



# EPIDEMIOLOGIC TRENDS IN DRUG ABUSE

Proceedings of the Community  
Epidemiology Work Group

**Volume II**

June 2010

NATIONAL INSTITUTE ON DRUG ABUSE



COMMUNITY EPIDEMIOLOGY WORK GROUP

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**U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES  
NATIONAL INSTITUTES OF HEALTH**

Division of Epidemiology, Services and Prevention Research  
National Institute on Drug Abuse  
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This publication, *Epidemiologic Trends in Drug Abuse, Volume II*, contains the individual

reports presented and data prepared for the June 2009 meeting by representatives from 22 areas in the United States. This publication also includes reports presented by researchers from Canada, Mexico, and the Netherlands.

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# Foreword

THIS PUBLICATION INCLUDES REPORTS PRESENTED and data prepared for the 68th semiannual meeting of the National Institute on Drug Abuse (NIDA) Community Epidemiology Work Group (CEWG) held in Boston, Massachusetts, on June 9–11, 2010. The CEWG is a network of researchers from sentinel sites throughout the United States. It meets semiannually to provide ongoing community-level public health surveillance of drug abuse through presentation and discussion of quantitative and qualitative data. CEWG representatives access multiple sources of existing data from their local areas to report on drug abuse patterns and consequences in their areas and to provide an alert to potentially emerging new issues. Local area data are supplemented, as possible, with data available from federally supported projects, such as the Substance Abuse and Mental Health Services Administration (SAMHSA) Drug Abuse Warning Network (DAWN), Drug Enforcement Administration (DEA) National Forensic Laboratory Information System (NFLIS), and the DEA Heroin Domestic Monitor Program (HDMP). This descriptive and analytic information is used to inform the health and scientific communities and the general public about the current nature and patterns of drug abuse, emerging trends, and consequences of drug abuse.

The CEWG convenes twice yearly, in January and June. For the June meetings, CEWG representatives prepare full reports on drug abuse patterns and trends in their areas. After the meeting, the *Proceedings of the Community Epidemiology Work Group* is published in two volumes: a Highlights and Executive Summary Report (Volume I), and this volume that includes the full CEWG area reports and international reports.

The majority of the June 2010 meeting was devoted to the CEWG area reports and presentations. CEWG area representatives presented data on local drug abuse patterns and trends. Presentations on drug abuse patterns and issues were also provided by guest researchers from Canada,

Mexico, the Netherlands, New Zealand, and the European Monitoring Centre for Drugs and Drug Addiction (EMCDDA) in Lisbon, Portugal. Other highlights of the meeting included a welcome from Rita Nieves, R.N., M.P.H., M.S.W., Director of the Addictions Prevention, Treatment, and Recovery Support Services Bureau in Boston; a greeting and update from Wilson Compton, M.D., M.P.E., Director of the Division of Epidemiology, Services, and Prevention Research at NIDA; presentations by DEA representatives Cassandra Prioleau, Ph.D., and Artisha Polk, M.P.H., on NFLIS and emerging drugs of concern and drug scheduling issues; an update from the Office of National Drug Control Policy on the Arrestee Drug Abuse Monitoring (ADAM) II data system by M. Fe Caces, Ph.D.; and an update on the National Drug Intelligence Center's SENTRY from Susan Seese, Ph.D. A panel session on new drugs included a presentation on "Adulterants, Drugs, Coingestants, and Associated HIV Risks" from Edward Boyer, M.D., Ph.D., Professor, Department of Emergency Medicine at the University of Massachusetts Medical School; a presentation on "Epidemiology, Clinical Effects, and Testing Results from a K2 Outbreak" by Christopher Rosenbaum, M.D., from the Division of Medical Toxicology, Department of Emergency Medicine, University of Massachusetts Medical Center; a presentation on "BZP Use in New Zealand: Patterns of Use, Harms, and Policy Response" from Chris Wilkins, Ph.D., Centre for Social and Health Outcomes Research and Evaluation, Massey University, Auckland, New Zealand; and one by Paul Griffiths, Scientific Coordinator for the EMCDDA in Portugal on the European Union's Early Warning System on new synthetic psychoactive substances, including the current situation and future challenges, using the synthetic cathinone, mephedrone, as a case study. An epidemiologic surveillance methods panel session included the following three presentations: "Use of Arrestee Data to Monitor Drug Abuse," by Eric

Wish, Ph.D., Director of the Center for Substance Abuse Research at the University of Maryland; “Using Treatment Admissions Data for Monitoring Methamphetamine,” by James Cunningham, Ph.D., the CEWG Phoenix area representative; and “Epidemiologic Surveillance Systems Development,” by Caleb Banta-Green, Ph.D., M.P.H., M.S.W., the CEWG area representative from Seattle.

The information published after each CEWG meeting represents findings from CEWG area representatives across the Nation, which are supplemented by national data and by special presentations

at each meeting. The information is intended to alert authorities at the local, State, regional, and national levels, and the general public, to current conditions and potential problems so that appropriate and timely action can be taken. Researchers also use information to develop research hypotheses that might explain social, behavioral, and biological issues related to drug abuse.

*Moira P. O'Brien*

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Department of Health and Human Services

# Introduction

## The CEWG Network: Roles, Functions, and Data Sources

THE 68TH SEMI-ANNUAL MEETING OF THE COMMUNITY EPIDEMIOLOGY WORK GROUP (CEWG) was held on June 9–11, 2010, in Boston, Massachusetts. During the meeting, researchers from 22 geographically dispersed areas in the United States reported on current trends and emerging issues in their areas. In addition to the information provided for 18 sentinel areas that have contributed to the network for many years, and two additional areas (Colorado and Broward County, Florida in the Miami/Dade Metropolitan Statistical Area), guest researchers from Cincinnati and Maine provided data from their respective areas, as did international representatives from Canada, Mexico, the Netherlands, and the European Monitoring Centre for Drugs and Drug Addiction (EMCDDA) in Lisbon, Portugal, with a presentation on BZP (1-benzylpiperazine) by a New Zealand researcher.

## The CEWG Network

The CEWG is a unique epidemiology network that has functioned since 1976 as a drug abuse

surveillance system to identify and assess current and emerging drug abuse patterns, trends, and issues, using multiple sources of information. Each source provides information about the abuse of particular drugs, drug-using populations, and/or different facets of the behaviors and outcomes related to drug abuse. The information obtained from each source is considered a drug abuse indicator. Typically, indicators do not provide estimates of the number (prevalence) of drug abusers at any given time or the rate at which drug-abusing populations may be increasing or decreasing in size. However, indicators do help to characterize drug abuse trends and different types of drug abusers (such as those who have been treated in hospital emergency departments, admitted to drug treatment programs, or died with drugs found in their bodies). Data on items submitted for forensic chemical analysis serve as indicators of availability of different substances and engagement of law enforcement at the local level, and data such as drug price and purity are indicators of availability, accessibility, and potency of specific drugs. Drug abuse indicators are examined over time to monitor the nature and extent of drug abuse and associated





problems within and across geographic areas. The CEWG areas on which presentations were made at the June 2010 meeting are depicted in the map above, with one area presentation including data on Baltimore, Maryland, and Washington, DC.

## CEWG Meetings

The CEWG convenes semiannually; these meetings continue to be a major and distinguishing feature of the workgroup. CEWG representatives and guest researchers present information on drug abuse patterns and trends in their areas, and personnel from Federal agencies provide updates of data sets used by the CEWG. In addition, time is set aside for question-and-answer periods and discussion sessions. The meetings provide a foundation for continuity in the monitoring and surveillance of current and emerging drug problems and related health and social consequences.

Through the meetings, the CEWG accomplishes the following:

- Dissemination of the most up-to-date information on drug abuse patterns and trends in each CEWG area
- Identification of changing drug abuse patterns and trends within and across CEWG areas
- At the semiannual meetings, CEWG representatives address issues identified in prior meetings and, subsequently, identify drug abuse issues for follow-up in the future. In addition to CEWG area presentations, time at each meeting is devoted to presentations by invited speakers. These special sessions typically focus on the following:
  - Presentations by researchers in the CEWG host city
  - Updates by Federal personnel on key data sets used by CEWG representatives
  - Drug abuse patterns and trends in other countries
  - Identification of changing drug abuse patterns is part of the discussions at each CEWG meeting. Through this process, CEWG representatives

can alert one another to the emergence of a potentially new drug of abuse. The CEWG is uniquely positioned to bring crucial perspectives to bear on urgent drug abuse issues in a timely fashion and to illuminate their various facets within the local context through its semiannual meetings and post-meeting communications.

## Data Sources

To assess drug abuse patterns and trends, city- and State-specific data were compiled from a variety of health and other drug abuse indicator sources. Such sources include: public health agencies; medical and treatment facilities; ethnographic research; key informant discussions; criminal justice, correctional, and other law enforcement agencies; surveys; and other sources unique to local areas.

Availability of data varies by area, so reporting varies by area. Examples of data reviewed by CEWG representatives to derive drug abuse indicators include, but are not limited to, the following:

- Admissions to drug abuse treatment programs by primary substance of abuse or primary reason for treatment admission reported by clients at admission
- Drug-related emergency department (ED) reports of drugs mentioned in ED records in the Drug Abuse Warning Network (DAWN) *Live!* data system, along with weighted estimates from the DAWN system available for 2004–2008 for this report
- Seizure, average price, average purity, and related data obtained from the Drug Enforcement Agency (DEA) and from State and local law enforcement agencies
- Drug-related deaths reported by medical examiner (ME) or local coroner offices or State public health agencies
- Controlled substance transactions reported by the DEA's Automation of Reports and Consolidated Orders System (ARCOS)

- Arrestee urinalysis results from the Arrestee Drug Abuse Monitoring (ADAM) II system
- State and local random samples and other surveys, such as the Youth Risk Behavior Survey (YRBS) and the National Survey on Drug Use and Health (NSDUH)
- Poison control center data
- Prescription drug monitoring programs

Other data sources cited in this report were local data accessed and analyzed by CEWG representatives. The sources included: local law enforcement (e.g., data on drug arrests); local DEA offices; High Intensity Drug Trafficking Area (HIDTA) reports; help lines; local and State surveys; and key informants and ethnographers.

**EPIDEMIOLOGY  
OF  
DRUG  
ABUSE:**

**CEWG  
AREA  
REPORTS**

# Patterns and Trends of Drug Use in Atlanta: 2009

Lara DePadilla, Ph.D., and Mary Wolfe, B.S.<sup>†</sup>

## ABSTRACT

*Cocaine and marijuana were the dominant drugs of abuse in the metropolitan Atlanta area in 2009. Together these drugs represented over 40 percent of treatment admissions for 2009. Although multiple indicators point to a reduction in cocaine use, cocaine was still the most mentioned drug in the National Forensic Laboratory Information System (NFLIS) drug seizure data. Treatment admissions indicated that Atlanta's cocaine users continued to be African-American, male, and older than 35. Approximately 7 out of 10 cocaine users who entered treatment preferred to smoke the drug, a proportion that has remained stable since 2006. The two counties closest to the city had treatment admission rates of 40 percent or higher. Reports of poisoning by crack have remained stable since 2008 following a decrease from 2006 to 2007. The State Medical Examiner (ME)'s office reported a slight increase in the number of postmortem results in which cocaine was found. Marijuana was the most commonly reported substance in Atlanta. Treatment admission for marijuana (23.3 percent) surpassed cocaine (19.8 percent) for the first time in 10 years. Percentages of marijuana treatment admissions were at least 20 percent for the majority of counties in the Metropolitan Statistical Area (MSA). Calls to the Georgia Crisis and Access Line increased slightly in the first quarter of 2010, compared with the second half of 2009, representing an increase from previous half years. Calls regarding poisonings by marijuana have decreased steadily since 2006.*

*Indicators were stable with regard to methamphetamine. Treatment admissions for methamphetamine remained predominantly female and White, and the proportion of treatment admissions (6.2 percent) was only 0.1 percent higher than 2008. Drug poisoning reports, however, may have indicated an increase following a decline from 2005 to 2008. Methamphetamine treatment admission rates were only greater than 20 percent in eight counties at the periphery of the MSA. Heroin indicators were stable. Following an increase reported by NFLIS in 2008, the number of seizures has remained at that elevated level. Treatment admissions were slightly lower than methamphetamine at 4.9 percent, and poisoning reports remained stable after an increase in 2008. Alprazolam remained the most reported benzodiazepine in the Atlanta area. Treatment admissions represented a small portion of overall admissions, but the percentage has nearly doubled since 2008. An increase was also reported in drug seizure data. However, State ME data indicated that the number of results was stable. Despite this, toxicology postmortem result entries for alprazolam exceeded that of all other benzodiazepines combined. Treatment admissions for oxycodone also comprised a small percentage of overall admissions but represented more than alprazolam and have more than doubled since 2008. NFLIS and State ME data also indicated increases. These same two sources also reflected an increase in hydrocodone. Similar to methamphetamine treatment rates, prescription opiate treatment rates were only above 20 percent in counties outside the center of the MSA. MDMA (3,4-methylenedioxymethamphetamine) accounted for a small percentage of treatment admissions, and its use appeared to be decreasing as indicated by the State ME office, NFLIS, and the Georgia Poison Center. Seizures of BZP (1-benzylpiperazine) were stable from 2008 to 2009 according to NFLIS, while seizures of TFMPP (1-(3-(trifluoromethylphenyl)piperazine) decreased.*

<sup>†</sup>The authors are affiliated with Emory University.

## INTRODUCTION

### Area Description

The Atlanta Metropolitan Statistical Area (MSA) is comprised of 28 of the State's 159 counties. The population has been steadily increasing, growing from 4,281,905 in 2000 to 5,475,213 in 2009, making it the 12th most populous MSA (U.S. Census Bureau, 2009). The State as a whole has also increased in population by about 300,000 persons while the city of Atlanta, with a population of approximately 453,038, has increased by approximately 10,000 persons (American Community Survey, 2008). The City of Atlanta is located in parts of two main counties, Fulton County and DeKalb County. The population of these counties represents 18 percent of the State's entire population. Cobb County, Gwinnett County, and Clayton County are closest to the city and these comprise another 18 percent of the State's population.

The racial composition of the city of Atlanta and State of Georgia reflect a reversal in proportion of Whites to African-Americans. The percentage of Whites living in the city of Atlanta (38.9 percent) and the State as a whole (61.9 percent) in 2008 was virtually unchanged from 2006 (American Community Survey, 2008). Similarly, the percentages of African-Americans living in the city of Atlanta (55.5 percent) and the State (30.0 percent) have also remained consistent. The per capita family income of people living in the city was somewhat higher, at \$35,128, compared with \$25,746 at the State level. These numbers reflect small increases since 2006. Conversely, the percentage of persons living below poverty was higher inside the city of Atlanta (22.4 percent) compared with the State (14.7 percent). These rates have been consistent from 2006, but represent a decrease for the city of Atlanta since 1999 (24.4 percent) and an increase for the State of Georgia as a whole since 1999 (13 percent). Housing vacancy is more apparent inside the city, at 20.6 percent, compared with 13.8 percent for the State as a whole. Unemployment declined from 9.8 percent in 2006 to 8.5 percent in the city of Atlanta in 2008, while the percentage

of unemployed persons in the State as a whole has remained consistent at 7 percent for the State. However, as of March 2010, the Georgia Department of Labor reported that the seasonally adjusted rate of unemployment in Georgia was 10.5 and the same rate for the Atlanta MSA was 10.4. These are slightly higher than the national rate of 9.7.

### Combating Drug Use

In a press release in 2008, the Atlanta High Intensity Drug Trafficking Area (HIDTA) office stated that eight suburban counties were being added to the program. All 8 are within the 28-county MSA. Previously, only DeKalb County, Fulton County, the city of Atlanta, and the airport were designated HIDTA areas. The new counties are Barrow, Bartow, Cherokee, Clayton, Douglas, Fayette, and Forsyth. According to the Atlanta HIDTA, Atlanta has become a hub for east coast drug distribution, with Columbian sources using Mexican cartels to move the drugs into the United States rather than bringing them directly through Miami. These cartels, in turn, use Georgia as one of their distribution bases.

The West Metropolitan Regional Drug Enforcement Office (WMRDEO), a unit of the Georgia Bureau of Investigation (GBI), also combats illicit drugs in the metropolitan Atlanta area. The WMRDEO includes 22 counties, some of which are part of the 28-county MSA. WMRDEO personnel work closely with local law enforcement agencies.

### DATA SOURCES

Data sources used for this report include the following:

- **Demographic and population data** were from the U. S. Census Bureau, specially the American Community Survey. Additional unemployment data was from the Georgia Department of Labor.
- **Drug abuse treatment program data** were from the Georgia Department of Human

Resources for primary and secondary drugs of abuse among clients admitted to Atlanta's public drug treatment programs from 2000 through December 2009.

- **Crisis and access line call data** were from the Georgia Department of Human Resources, and represent the number of telephone calls from persons seeking information about and/or admission to Georgia's public substance abuse treatment centers. Data, obtained from June 2006 through March 2010, were classified by drug type. Data from January 2010 through March 2010 were extrapolated for comparison to other half year data.
- **Drug-related prison admissions data** were obtained from the Georgia Department of Corrections, and represent individuals who entered the prison or jail system due to drug possession from calendar years (CYs) 2004 through 2009.
- **Drug price data** came from the Atlanta Drug Enforcement Administration (DEA), Atlanta Division, from the National Drug Intelligence Center (NDIC) Mid-Year Report, 2009.
- **Drug purity data** (for heroin) came from the DEA 2008 Heroin Domestic Monitor Program (HDMP) drug intelligence report.
- **Forensic drug analysis data** came from the National Forensic Laboratory Information System (NFLIS), and represent evidence in suspected drug cases throughout metropolitan Atlanta that were tested by the Georgia Bureau of Investigation Forensic Laboratory in 2009.
- **Poison control center call data** came from the Georgia Poison Center for the years 2005–2009. Calls for persons older than 12 were included in the analysis.
- **State drug-related mortality data** were obtained from the Georgia Medical Examiner's (ME)'s Office. Data representing the number of postmortem specimens that tested positive for a particular drug were collected from fiscal years (FYs) 2005 through 2010.
- **Trafficking data** were from the HIDTA Task Force, a coordination unit for drug-related Federal, State, and local law enforcement agencies.
- **Acquired immunodeficiency syndrome (AIDs) data** came from the Department of Human Resources, Division of Public Health, and represent AIDS cases in Georgia from January 1981 through December 2008.

## DRUG ABUSE PATTERNS AND TRENDS

### Cocaine/Crack

In 2009, cocaine was the second most mentioned primary drug of choice for individuals seeking assistance at publicly funded treatment centers in metropolitan Atlanta. The number of primary admissions in metropolitan Atlanta for cocaine or crack ( $n=1,465$ ) decreased by nearly 400 admissions from the previous year, reflecting a steady decrease since 2000. In 2009, cocaine-related admissions were 19.8 percent of the total number of primary admissions, a 3-percent decrease from 2008 (exhibit 1). The ratio of males to females in treatment for cocaine was 1.2:1, a proportion that was very similar to 2008. While the proportion of males has historically been higher, this ratio has been more equal and stable for 3 years. The percentage of African-Americans entering treatment for cocaine-related admissions in 2009 increased to 71.9 percent. This percentage was 65.6 percent in 2008. Clients older than 35 accounted for the highest number of cocaine admissions (76.7 percent). The age distributions were slightly different between powder cocaine and crack, with a lower proportion of powder cocaine users (61 percent) in the 35 and older group compared with crack users (78 percent). Smoking continued to be the most preferred route (76.7 percent), continuing a consistent pattern. Among the 60 percent of those seeking treatment who reported secondary drugs of choice, 30.8 percent indicated that they used crack or powder cocaine. Calls to the Georgia Crisis Line for cocaine in the first quarter of 2010 reflected a very slight increase if the trend holds through the middle of the year (exhibit 2).

According to the NDIC, wholesale-level powder cocaine prices decreased between the end of 2008 and midyear 2009, with the range dropping from \$28,500 to \$34,000 to \$24,000 to \$32,000. In contrast, the low end of the price range for wholesale crack cocaine increased from \$18,000 per kilogram to \$27,000 per kilogram. Retail prices for powder cocaine and crack cocaine ranged from \$80 to \$110 per gram, while prices for a rock of crack cocaine ranged from \$5 to \$40.

NFLIS reported that cocaine accounted for 48.7 percent (5,624 items) of confiscated substances in suspected drug cases that were tested in forensic laboratories in 2009 (exhibit 3), representing a reduction from 2008 (56.3 percent). In FY 2010, cocaine was indicated in 3.1 percent ( $n=234$ ) of all Georgia's postmortem specimens tested by the Georgia State ME Office, which was consistent with FY 2009 and represents a decrease from 2007 (exhibit 4). In 2009, prison admissions were down, particularly in Fulton County and DeKalb County. Similar to 2008, Cobb County had the highest number of prison admissions for cocaine possession ( $n=209$ ), followed by Clayton ( $n=77$ ), Fulton ( $n=53$ ), Gwinnett ( $n=50$ ), and DeKalb ( $n=36$ ) Counties. Across the 28 counties in the MSA, convictions for possession decreased from 961 in 2008 to 727 in 2009. However, convictions for intent to distribute increased from 120 to 250. According to the Georgia Poison Center, calls about crack cocaine in 2009 ( $n=59$ ) were consistent with 2008 ( $n=60$ ) and 2007 ( $n=59$ ).

The use of crack and powder cocaine appeared to be concentrated in Fulton County and DeKalb County, where treatment admissions for cocaine exceeded 40 percent of the total admissions (although Meriwether County also showed a 3rd quintile percentage, the number of total treatment admissions was small,  $n=32$  admissions) (exhibit 5).

## Heroin

In 2009, treatment admissions for individuals who reported heroin as their primary drug of choice accounted for 5.0 percent of public treatment program admissions in the 28-county MSA,

up slightly from 4.3 percent in 2008 (exhibit 1). Admission ratios for males were higher (1.86:1) than for females. Among the 60 percent of users admitted to treatment for other primary drugs that reported secondary drugs, only 2 percent indicated that heroin was a secondary drug of choice.

Whites comprised 60 percent of heroin treatment admissions. African-Americans made up the next highest proportion at 37 percent. Roughly one-half of the treatment admissions (52 percent) were for clients age 35 and older, similar to 2008 (54 percent). The rest of the admissions were divided nearly equally between clients age 18 to 25 and clients age 26 to 34. Nearly 70 percent of the clients admitted to treatment for heroin preferred to inject the drug, followed by inhalation (25 percent), oral (5 percent), and smoking (1 percent). The most commonly reported secondary drugs of choice were powder cocaine (15 percent), alcohol (14 percent), and crack cocaine (12 percent). Oxycodone and other narcotic analgesics made up another 10 percent of secondary drug choices.

According to the NDIC, the low end of wholesale level Mexican black tar and Mexican brown powder heroin prices increased between the end of 2008 and the middle of 2009 from \$40,000 per kilogram to \$65,000 per kilogram. However, there was a decrease in the low end of Mexican heroin for the smaller quantities, with prices dropping for 1 pound from \$500 to \$400. The high end for this amount was consistent at \$1,000 per pound. Mexican black tar/Mexican brown powder retailed for between \$100 and \$125 per gram in mid-2009. Prices for South American (SA) heroin were only available in the Savannah area, retailing for between \$200 and \$250 per gram. Thirteen samples were purchased in 2008 and tested for purity. Only one of these was Southwest Asian Heroin (SWA) and the others were SA heroin. The SWA sample was slightly more pure than previous years (29.1 percent) but was not indicative of any substantive change in purity since 2004. It was also more pure than the national average. The average purity for the SA sample was 31.1 percent, which represents a decrease of 2 percent since 2007. Despite this decrease, the overall trend did

not appear to deviate substantively from the slow decline in purity that began in 2001. The purity of SA in Atlanta was comparable to the purity of SA nationwide.

Approximately 2.4 percent (283 items) of NFLIS-tested drug items seized tested positive for heroin in 2009 (exhibit 3), which was nearly same percentage of drug items seized during the previous year. According to the Georgia Poison Center, the number of calls about heroin in 2008 ( $n=28$ ) and 2009 ( $n=26$ ) were double that for 2005 ( $n=13$ ), 2006 ( $n=13$ ), and 2007 ( $n=12$ ).

### Other Opiates/Narcotics

Beginning in 2007, the Georgia Department of Human Resources began reporting primary-related treatment admissions for prescription opiates/narcotics. Oxycodone accounted for 1.2 percent of treatment admissions in 2008, representing a small increase from 2007 (0.9 percent). However, in 2009, treatment admissions for oxycodone increased to 2.4 percent. Also in 2009, among the 60 percent of treatment admissions who reported a secondary drug of choice, another 1 percent indicated oxycodone as a secondary drug of choice. Forty-two percent of treatment admissions for oxycodone were age 18 to 25. The next largest age group was 35 and older (33 percent) followed by those age 26 to 34 (25 percent). The proportion of female admissions was smaller (39 percent).

Drug seizures of both oxycodone and hydrocodone were indicative of increases for these drugs. There were 336 items that tested positive for oxycodone in 2008 compared with 524 items that tested positive in 2009. Hydrocodone was found in 400 items in 2008, compared with 515 items in 2009. There were more modest increases in the number of postmortem result entries from FY 2009 to FY 2010 for opiates (exhibit 4). The count of deaths in which oxycodone was found was 225 in 2009; this number increased to 256 in 2010. For hydrocodone, the deaths increased from 281 in 2008 to 296 in 2009. Calls to the Georgia Crisis Line in the first 3 months of 2010 indicated a potential increase in calls regarding opioids/

narcotics if the trend continues (exhibit 2). Convictions for possession of narcotic opiates in the 28-county MSA increased from 30 in 2008 to 35 in 2009.

Prescription opiates made up greater proportions of treatment admissions in the counties farthest from the city of Atlanta. Only one county, Dawson County, reported a percentage of greater than 40 percent admissions for prescription opiates. Six additional counties reported percentages of higher than 20 percent but less than 40 percent (exhibit 6).

### Marijuana/Cannabis

Epidemiological indicators showed a slight upward trend in marijuana use with increases in treatment admissions and calls to the crisis line. Only calls for poisonings showed a decrease.

Twenty-three percent of public treatment admissions in 2009 in metropolitan Atlanta were for clients who considered marijuana their primary drug of choice (exhibit 1). Although this is not a substantive increase over the proportion of treatment admissions for marijuana in 2008, it is the first year in this decade that marijuana has surpassed cocaine in percentage of admissions. Male admissions remained approximately double that of females in the 28-county MSA (2.05:1). Additionally, marijuana was reported by 24 percent of treatment admissions as the secondary drug of choice among the 60 percent of treatment admissions who reported a secondary drug of choice. The proportion of African-Americans who identified marijuana as their primary drug of choice continued to increase, from 53.8 percent in 2007, to 58.2 percent in 2008, to 61 percent in 2009. Nearly twice as many African-Americans reported marijuana as their primary reason for admission compared with Whites. The proportion of younger users increased in 2009 over 2008, with 63 percent of clients seeking treatment for marijuana being younger than 26. Alcohol was still the most popular secondary drug of choice for marijuana users with one-third of users reporting it as their secondary drug of choice. Georgia Crisis Line data indicated an increase in calls related to



marijuana/cannabis based on the first 3 months of 2010 if the trend continues (exhibit 2).

According to the NDIC, marijuana wholesale prices ranged from \$400 to \$1,000 per pound in mid-2009 for Mexican marijuana. High quality U.S. marijuana was found in Columbus, Georgia for \$3,000 to \$4,500 per pound. Mid-level Mexican marijuana could be found in Atlanta for between \$180 and \$220 per ounce.

The NFLIS report for CY 2009 indicated that 2.4 percent (281 items) of all drug-related items confiscated tested positive for marijuana/cannabis (exhibit 3). However, these results are skewed due to changes in statewide drug testing for marijuana and, therefore, do not accurately reflect the prevalence of the drug's use. Calls to the Georgia Poison Center referencing marijuana have decreased over the past 5 years. Prison admissions across the 28-county MSA for possession of marijuana decreased from 84 in 2008 to 59 in 2009. However, prison admissions for intent to distribute increased from 140 in 2008 to 304 in 2009.

Marijuana was present in proportions greater than 20 percent in treatment admissions in all but three counties reporting at least 10 admissions (exhibit 7). Another seven counties reported marijuana in greater than 40 percent of treatment admissions.

## Stimulants

From 2000 to 2005, methamphetamine use increased based on treatment admissions. However, this trend appears to have reversed. The percentage of methamphetamine-related treatment admissions had been falling steadily since 2005 and it did not change substantially between 2008 and 2009. Primary treatment admissions for methamphetamine comprised 6 percent of all treatment admissions; 4 percent of the 60 percent of clients who represented secondary drugs of choice reported methamphetamine as their secondary drug. However, the Georgia Methamphetamine Project launched a statewide methamphetamine prevention campaign in March 2010, and it will be important to note in the coming years if the State's approach to curbing

methamphetamine use can continue to make a difference. The percentage of females in metropolitan Atlanta who reported to treatment for methamphetamine-related causes was 58 percent, continuing a downward trend in the proportion of females seeking treatment for the drug in the 28-county MSA. Users were predominantly White, and continued to account for 95 percent of treatment admissions as they did in 2008. The changes in age distribution of methamphetamine users continued in 2009. In 2007, 30 percent of admissions were younger than 26. After a drop to 25 percent in 2008, this amount stabilized in 2009 with approximately 26 percent of users being younger than age 26. An increase occurred among clients age 26 to 34, with 35.6 percent in 2007, 37.2 in 2008, and 39 percent in 2009. Thirty-five percent of admissions were age 35 and older, representing a drop from 2008 (37.8 percent) but maintaining an increase over 2007 (35.6 percent). These numbers were still a stark contrast to previous years when methamphetamine treatment seekers were predominantly older than 35. Metropolitan Atlanta treatment admissions were most likely to smoke methamphetamine (57 percent), followed by injection (19 percent), and snorting (12 percent). These results reflected an increase in persons who reported that they inject methamphetamine. Calls to the Georgia Crisis Line indicated a slight increase if the trend begun in the first quarter of 2010 continues for amphetamines (exhibit 2).

In mid-2009, methamphetamine wholesale price ranges increased from between \$9,000 and \$12,000 per pound to between \$10,000 and \$14,000 per pound. Locally produced powder prices ranged from \$220 to \$275 per one-eighth of an ounce, Mexican "ice" prices ranged from \$200 to \$250 per one-eighth of an ounce, and Mexican powder ranged from \$175 to \$225 per one-eighth of an ounce.

Seizures of methamphetamine indicated by NFLIS demonstrated the first increase in 4 years. Convictions for possession of methamphetamine in the 28-county MSA decreased from 456 in 2008 to 310 in 2009. However, convictions for possession with intent to distribute increased from 65 in

2008 to 149 in 2009. Calls to the Georgia Poison Center for methamphetamine had been decreasing since 2005, but an increase was evident in 2009. In 2005, there were 148 calls related to methamphetamine. By 2008, that number was reduced to 40. However, in 2009, there were 64 calls to the Georgia Poison Center related to methamphetamine.

For counties close to the city, methamphetamine treatment admissions did not reach 20 percent of total nonalcohol only admissions (exhibit 8). There were, however, a number of counties toward the periphery of the MSA that did show proportions of treatment admissions of between 20 and 40 percent.

### Depressants

Indicators describing benzodiazepine use in the 28-county MSA were mixed. The most commonly abused benzodiazepine was alprazolam. Treatment admissions for alprazolam, while modest, have been increasing gradually since the Georgia Department of Human Resources began providing treatment data on benzodiazepines as a primary reason for seeking treatment. In 2007 and 2008, the percentages were 0.8 percent and 0.7 percent, respectively. However, in 2009, that percentage was 1.2 percent. Although this proportion is small compared with other drugs of abuse, it still may be part of an overall trend toward prescription drug abuse. Additionally, alprazolam comprised 3 percent of all secondary drugs of choice, and other benzodiazepines were another 2 percent of all secondary drugs of choice among treatment admissions indicating a second drug. Calls to the Georgia Crisis Line also indicated a potential increase in benzodiazepine use if the trend initiated in the first quarter of 2010 continues (exhibit 2).

Based on data provided by the State ME Office, postmortem result entries for alprazolam remained stable between FY 2009 ( $n=445$ ) and FY 2010 ( $n=439$ ). However, these numbers still represent an increase over FY 2008 ( $n=202$ ). Alprazolam was found in 3.8 percent of postmortem result entries in FY 2007, 4.8 percent in FY 2008, and approximately 6 percent in FYs 2009 and 2010.

However, postmortem result entries that included other benzodiazepines rose from FY 2009 ( $n=314$ ) to FY 2010 ( $n=362$ ). This brings the total proportion of deaths for which a benzodiazepine was reported by the State ME to 11 percent, supporting last year's update that the DEA considered these drugs to be an increasing threat in Georgia. According to NFLIS data, seizures of alprazolam increased from 522 in 2008 to 583 in 2009. This amount was greater than both oxycodone and hydrocodone.

### Hallucinogens

In 2009, there was only one report of PCP (phencyclidine) among primary treatment admissions for the 28-county MSA. From 2005 to 2009, the highest number of calls received by Georgia Poison Center about PCP was five in 2006.

In 2009, LSD (lysergic acid diethylamide) accounted for less than 1 percent of drugs seized by NFLIS and was only mentioned once among primary treatment admissions. Calls regarding LSD poisonings reflect a decrease over the last 5 years. There were 6 calls in 2005, 18 calls in 2006, 7 calls in 2007, 11 calls in 2008, and 6 calls in 2009. In 2009, "other hallucinogens" were listed four times as a secondary drug of choice in metropolitan Atlanta.

### Club Drugs

#### *MDMA or Ecstasy*

A decrease in the use of MDMA (3,4-methylenedioxymethamphetamine) was reflected across all epidemiologic indicators for which it appeared. It was reported in 0.16 percent of public treatment admissions in 2009. There were 17 individuals admitted to public drug treatment who listed MDMA as their secondary drug of choice. It accounted for 2 percent of drug seizures (236 items) tested by NFLIS, down from 3.7 percent in 2008. The drug was indicated more among calls to the Georgia Poison Center, although that data also suggests a downward trend. There were 54 calls in 2005, 90 calls in 2006, 75 calls in 2007, 68 calls in

2008, and 62 calls in 2009. Prison admissions for MDMA or ecstasy increased from 8 in 2008 to 13 in 2009. According to the NDIC, MDMA tablets in mid-2009 were selling for between \$4 and \$6 per pill.

### **GHB**

Similar to LSD, GHB (gamma hydroxybutyrate) was only mentioned once among primary treatment admissions. NFLIS tested only one seizure that was found to be GHB. As was the case with LSD and MDMA, GHB was somewhat more apparent among calls to the Georgia Poison Center. In 2005, there were 44 calls related to GHB and 4 calls related to GHB alternatives. In 2006, there were 38 calls related to GHB and 2 calls related to GHB alternatives. In 2007, the number decreased to 26. This trend continued with only 14 calls in 2008. However, in 2009, there were 26 calls related to GHB and 2 calls related to GHB alternatives.

### **Other Drugs**

Seizures of BZP (1-benzylpiperazine) increased from 6 in 2007 to 32 in 2008, according to NFLIS, and in 2009, this number remained stable at 31. Seizures of TFMPP (1-3-(trifluoromethylphenyl)

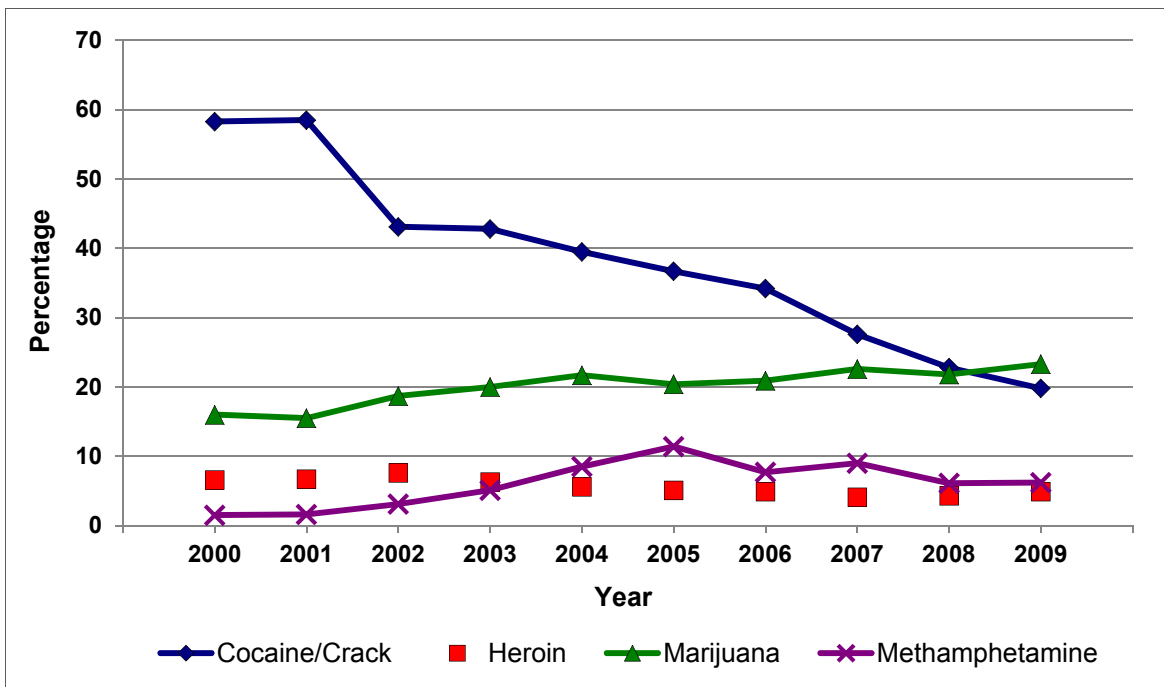
piperazine) increased from 16 in 2007 to 227 in 2008. In 2009, seizures of TFMPP decreased to 196.

## **INFECTIOUS DISEASES RELATED TO DRUG ABUSE**

There were 34,224 statewide cumulative AIDS cases in Georgia in 2008. There were fewer new AIDS cases in 2008 ( $n=1,157$ ) than in 2007 ( $n=1,877$ ). Three-quarters of new AIDS diagnoses were African-American; this was consistent with the previous year. In 2008, 15 percent of exposures were injection drug users (IDUs) and men who have sex with men (MSM)/IDU. This represented a decrease from 2007, and was lower compared with the same indicators across the United States.

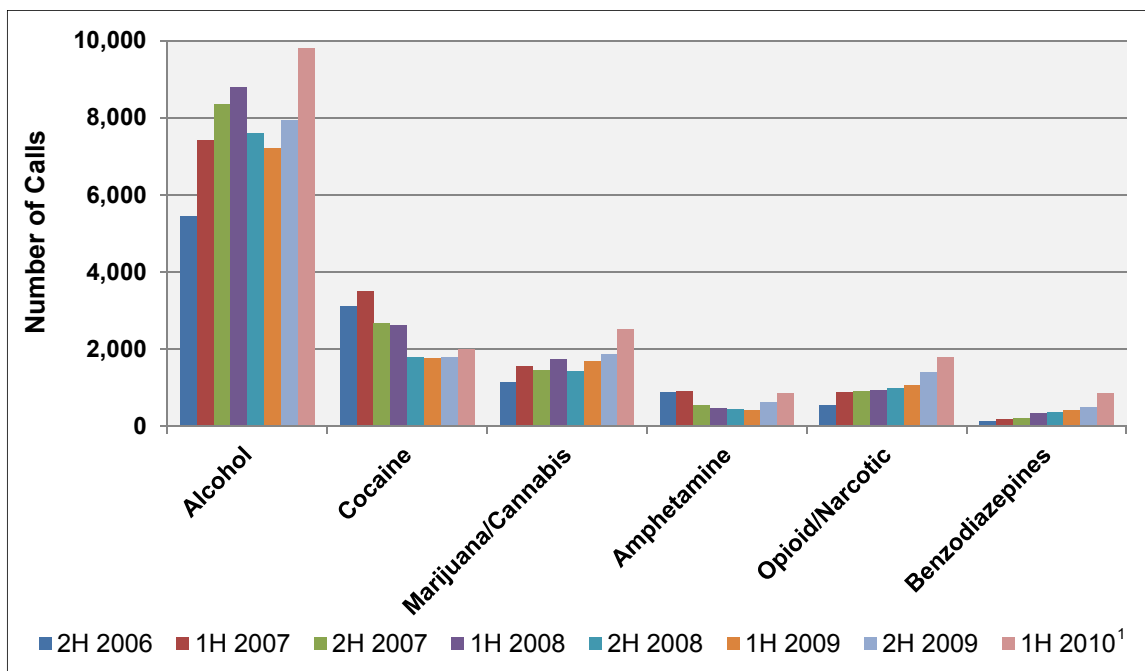
*For inquiries regarding this report, contact Lara DePadilla, Ph.D., Visiting Assistant Professor, Department of Behavioral Sciences and Health Education, Rollins School of Public Health, Emory University, 1518 Clifton Road, Atlanta, Georgia, 30322, Phone: 404-358-5037, Fax: 404-727-1369, E-mail: [ldepadi@emory.edu](mailto:ldepadi@emory.edu).*

**Exhibit 1. Percentage of Treatment Admissions for Four Major Drugs of Abuse, Atlanta: 2000–2009**



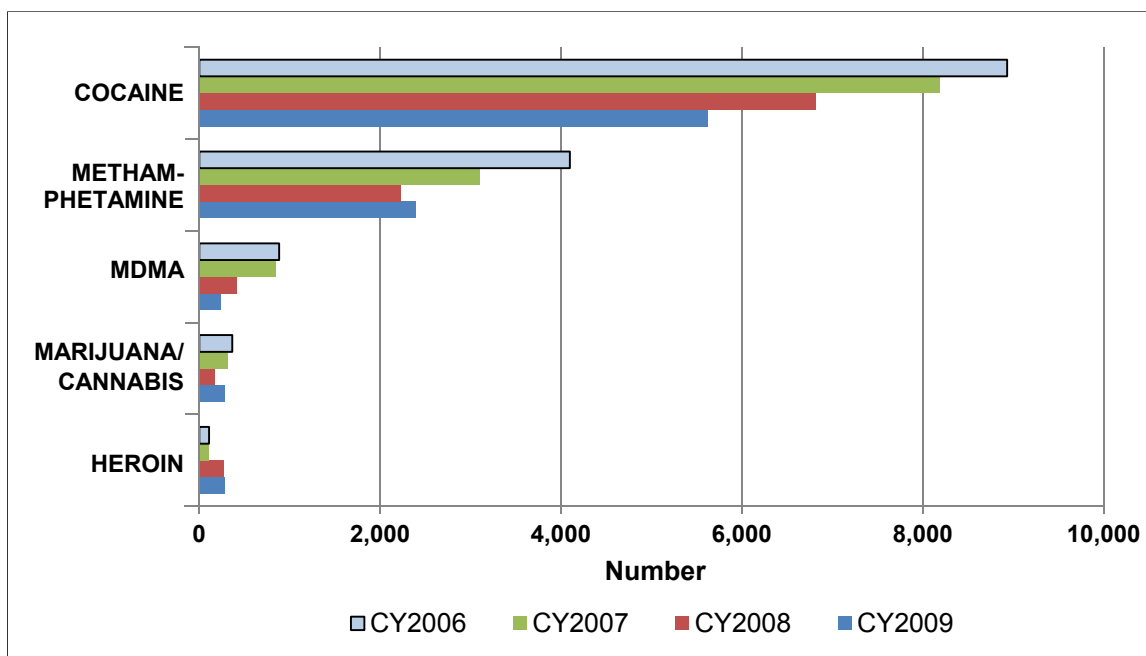
SOURCE: Georgia Department of Human Resources

**Exhibit 2. Number of Calls to Crisis Center for Select Drugs of Abuse, Georgia: Second Half (2H) 2006 to First Half (1H) 2010<sup>1</sup>**



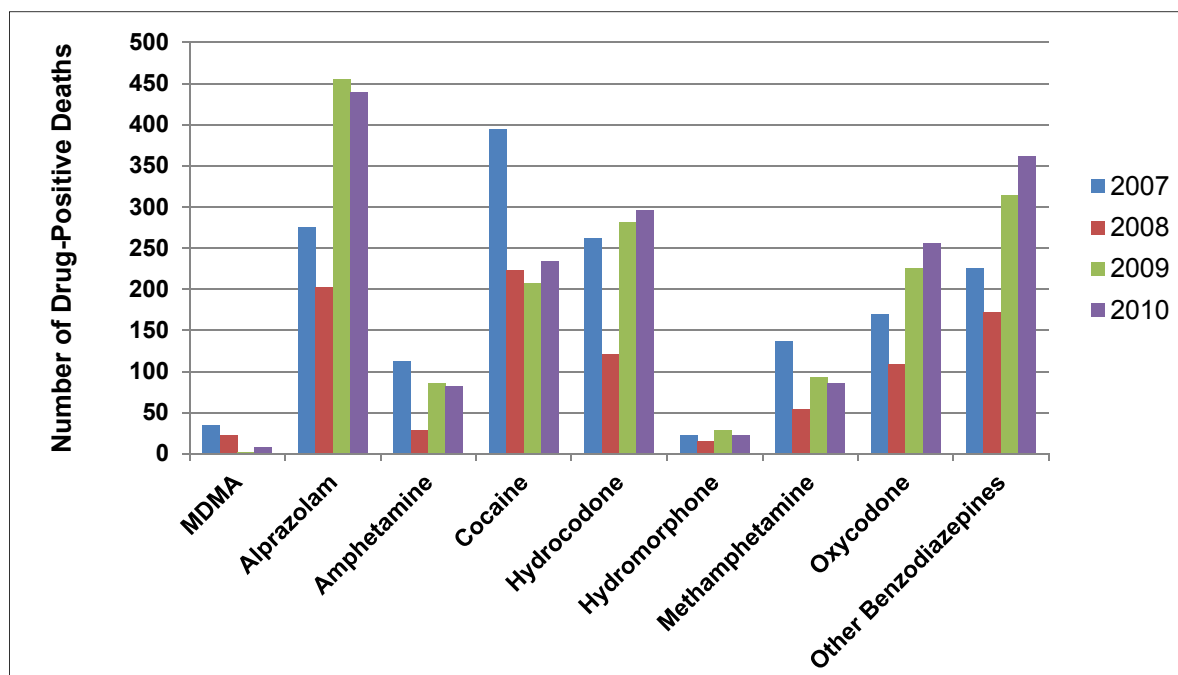
<sup>1</sup>The number of calls for 1H 2010 was extrapolated to be compatible with the other half years.  
SOURCE: Georgia Department of Human Resources

Exhibit 3. Number of Drug Seizures for Select Drugs of Abuse, Metropolitan Atlanta: 2006–2009



SOURCE: NFLIS, DEA

Exhibit 4. Number of Toxicology Postmortem Result Entries for Select Drugs of Abuse, Georgia: FYs<sup>1</sup> 2007–2010<sup>2</sup>

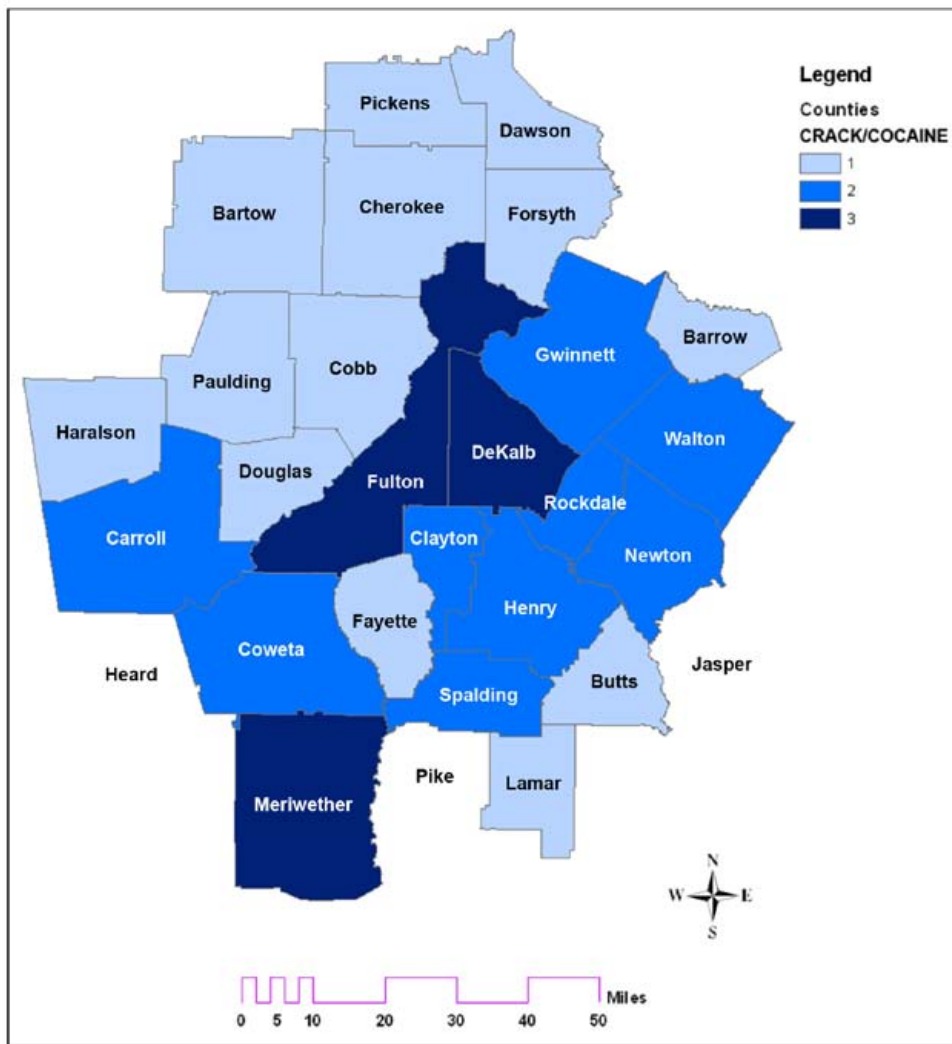


<sup>1</sup>FY=July to June.

<sup>2</sup>Data for 2010 are through April 20, 2010 only.

SOURCE: Georgia State Medical Examiner's Office

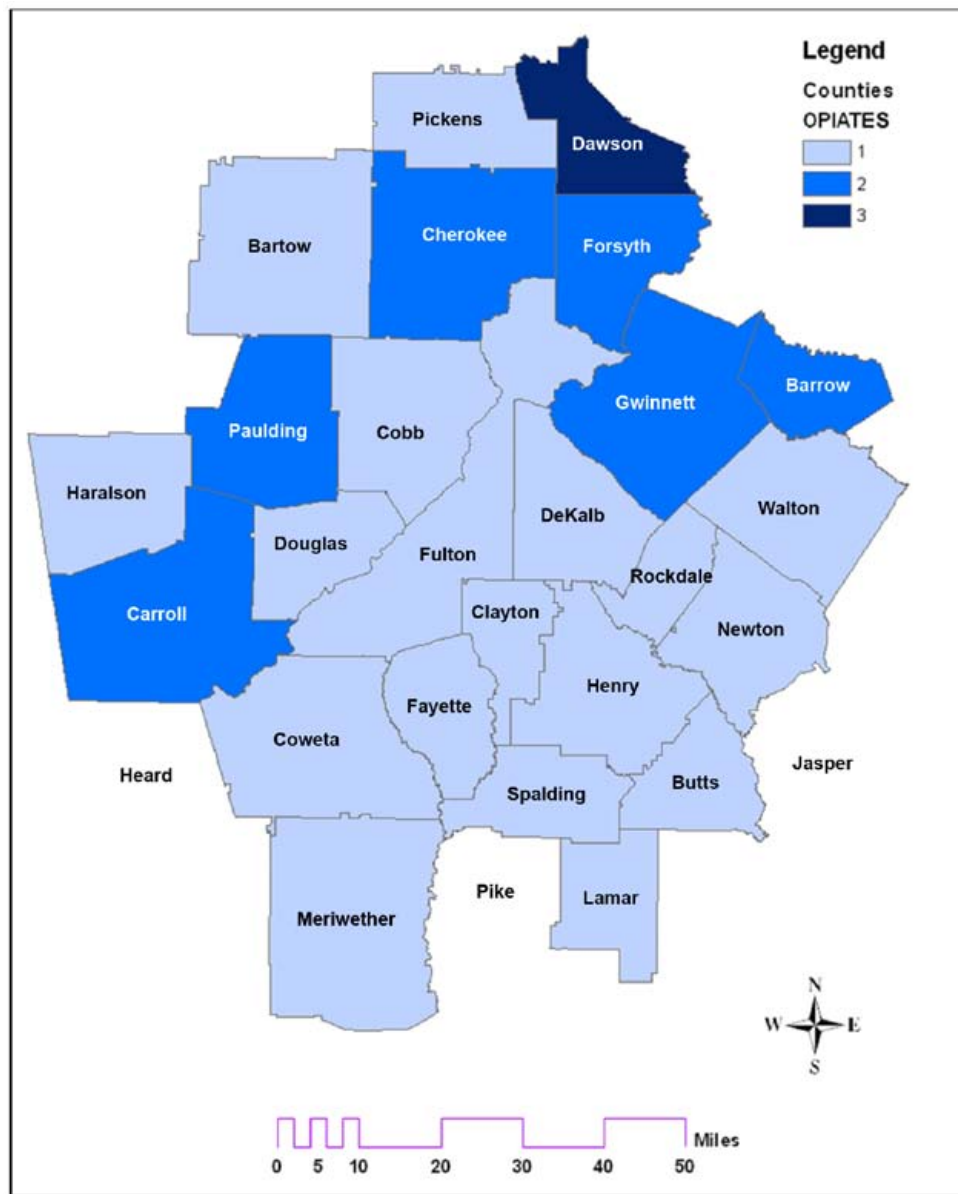
**Exhibit 5. Percentage of Drug Treatment Admissions for Crack/Cocaine, by County, in Atlanta Metropolitan Area: First Through Third Quintiles<sup>1</sup>, 2009**



<sup>1</sup>Only three quintiles are shown, as no counties met the criteria for the other two quintiles. Counties with fewer than 10 admissions were not included. The three quintiles shown were calculated after eliminating "Alcohol Only" cases from the dataset; they are: quintile 1=less than 20 percent; quintile 2=20–40 percent; and quintile 3=41–59 percent. The two quintiles not shown are: 4=60–79 percent and 5=80–100 percent.

SOURCE: Georgia Department of Human Resources

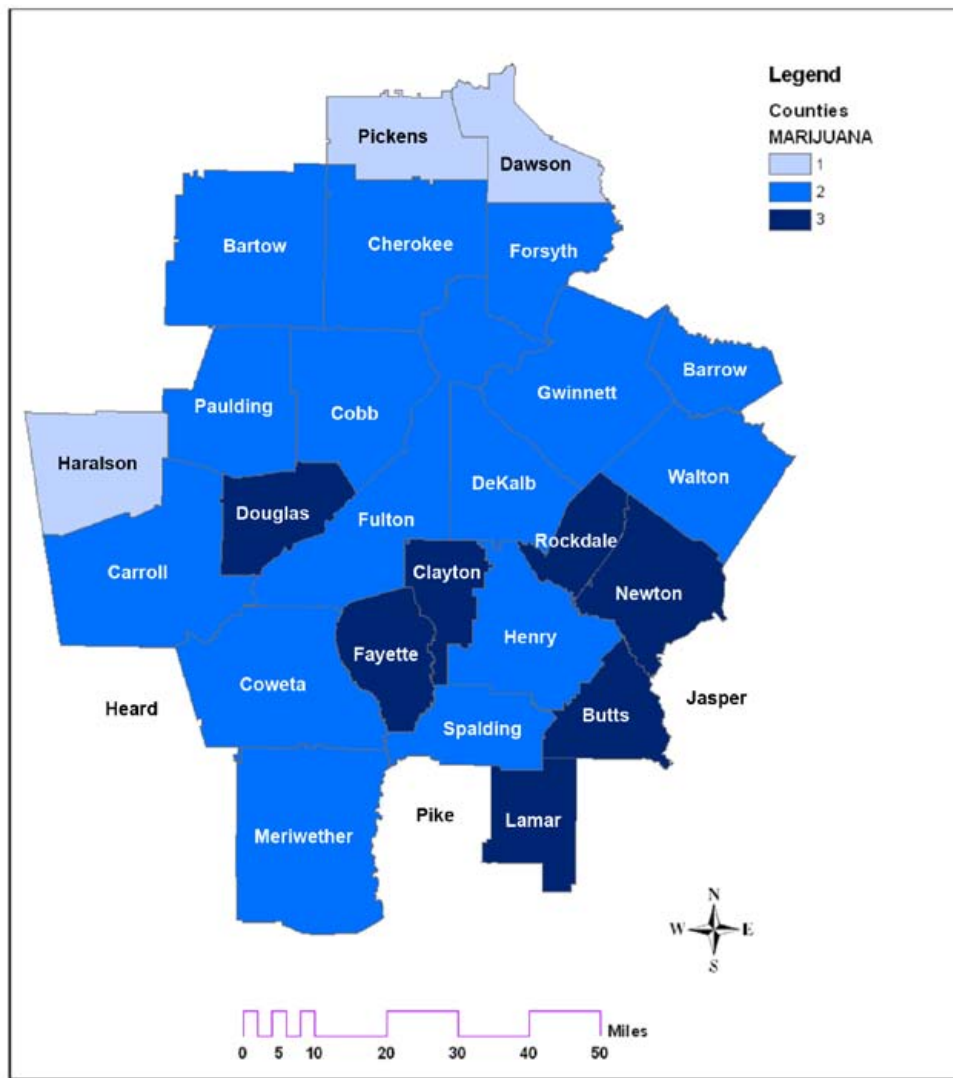
**Exhibit 6. Percentage of Drug Treatment Admissions for Prescription Opiates, Excluding Heroin, by County, in Atlanta Metropolitan Area: First Through Third Quintiles<sup>1</sup>, 2009**



<sup>1</sup>Only three quintiles are shown, as no counties met the criteria for the other two quintiles. Counties with fewer than 10 admissions were not included. The three quintiles shown were calculated after eliminating “Alcohol Only” cases from the dataset; they are: quintile 1=less than 20 percent; quintile 2=20–40 percent; and quintile 3=41–59 percent. The two quintiles not shown are: 4=60–79 percent and 5=80–100 percent.

SOURCE: Georgia Department of Human Resources

**Exhibit 7. Percentage of Drug Treatment Admissions for Marijuana, by County, in Atlanta Metropolitan Area: First Through Third Quintiles<sup>1</sup>, 2009**

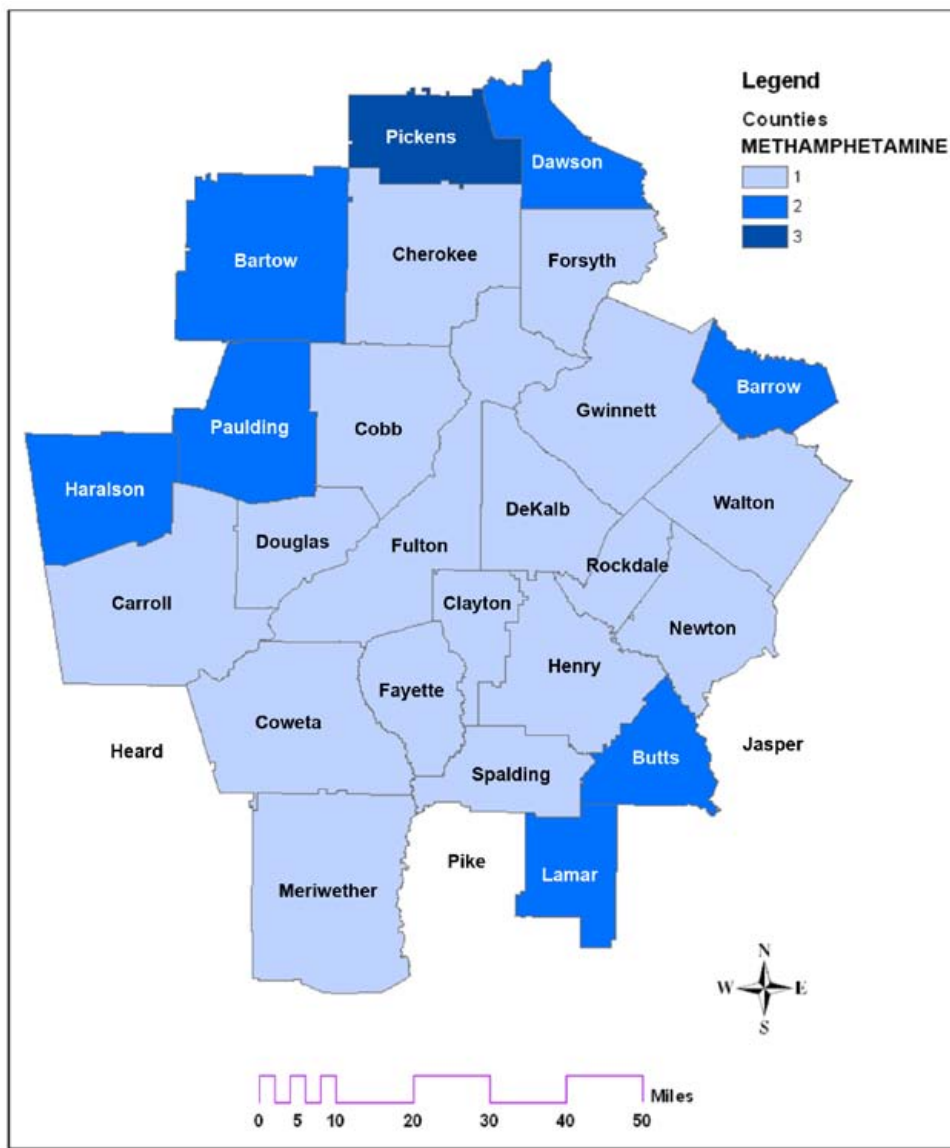


<sup>1</sup>Only three quintiles are shown, as no counties met the criteria for the other two quintiles. Counties with fewer than 10 admissions were not included. The three quintiles shown were calculated after eliminating "Alcohol Only" cases from the dataset; they are: quintile 1=less than 20 percent; quintile 2=20–40 percent; and quintile 3=41–59 percent. The two quintiles not shown are: 4=60–79 percent and 5=80–100 percent.

SOURCE: Georgia Department of Human Resources



**Exhibit 8. Percentage of Drug Treatment Admissions for Methamphetamine, by County, in Atlanta Metropolitan Area: First Through Third Quintiles<sup>1</sup>, 2009**



<sup>1</sup>Only three quintiles are shown, as no counties met the criteria for the other two quintiles. Counties with fewer than 10 admissions were not included. The three quintiles shown were calculated after eliminating “Alcohol Only” cases from the dataset; they are: quintile 1=less than 20 percent; quintile 2=20–40 percent; and quintile 3=41–59 percent. The two quintiles not shown are: 4=60–79 percent and 5=80–100 percent.

SOURCE: Georgia Department of Human Resources

# Patterns and Trends of Drug Abuse in the Baltimore/Maryland/Washington, DC, Metropolitan Area—Epidemiology and Trends: 2002–2009

Erin Artigiani, M.A., Margaret Hsu, M.H.S., Maribeth Rezey, M.S., Cheryl Rinehart, B.A., and Eric Wish, Ph.D.<sup>1</sup>

## ABSTRACT

*Throughout the Washington, DC, and Maryland region, cocaine, marijuana, and heroin continued to be the primary drug problems in 2009, but the misuse of prescription drugs showed increases in 2007 that continued into 2008. The Washington/Baltimore High Intensity Drug Trafficking Area (HIDTA) reported that cocaine, marijuana, and heroin were the most frequently seized drugs in the region. The wholesale value of the drugs seized decreased by more than one-third from 2008 to 2009, principally due to a sharp decline in seizures in the Baltimore metropolitan area. While other parts of the country have seen shifts in the use of methamphetamine, its use remained low throughout Maryland and Washington, DC, and was confined to isolated communities in Washington, DC. However, HIDTA seizures of methamphetamine in the DC area increased in 2009. The percentage of adult and juvenile offenders in Washington, DC, testing positive for amphetamines remained considerably lower than for other drugs and decreased in 2009 and into 2010. In Washington, DC, in 2009, cocaine/crack,*

*marijuana, and heroin continued to be the primary illicit drug problems. Cocaine remained one of the most serious drugs of abuse, as evidenced by the fact that more adult arrestees and more items seized tested positive for cocaine than for any other drug. The percentage of adult arrestees testing positive for cocaine appeared to be increasing in 2010. In comparison, the percentage testing positive for opiates and PCP (phencyclidine) remained about the same. In the first 4 months of 2010, 31.4 percent of adult arrestees tested positive for cocaine, and approximately 9–10 percent tested positive for opiates and/or PCP. In addition, more seized items tested positive for cocaine (41.31 percent) in 2009 than for any other drug, as reported by the National Forensic Laboratory Information System (NFLIS). Overdose deaths decreased from 119 in 2005 to 90 in 2007 and increased to 105 in 2008. They were also more likely to be related to cocaine (60 percent) than to any other drug. During the first 4 months of 2010, juvenile arrestees were more likely to test positive for marijuana (55.2 percent) than for any other drug, but the percentage appeared to be increasing again. The percentage testing positive for cocaine continued to decrease in the first 4 months of 2010 (from 3.5 percent in 2005 to 0.7 percent in 2010). The percentage testing positive for PCP also decreased (from 2.8 in 2008 to 1.3 percent in 2010) after holding steady in 2008. In Maryland, there were 60,404 primary admissions to certified treatment programs in 2009. They most frequently involved alcohol, heroin, marijuana, crack, and other cocaine. Cocaine and marijuana accounted for nearly three-quarters of the positive items tested through NFLIS during 2009. Approximately one in five items tested was positive for heroin, and nearly all of these items (98.8 percent) were from the Baltimore Metropolitan Statistical Area (MSA). The number of drug intoxication deaths in Maryland decreased approximately 13 percent from 2007 to 2008 and increased slightly in 2009. Narcotics (heroin, methadone, oxycodone, fentanyl, and other) were the most frequently identified drugs in drug abuse deaths in 2009,*

<sup>1</sup>The authors are affiliated with the Center for Substance Abuse Research, University of Maryland, College Park, Maryland. Some background material was taken from prior CEWG reports.

*and approximately one-third of these deaths occurred in Baltimore City.*

## INTRODUCTION

This report addresses drug trends in both Maryland (including Baltimore) and Washington, DC. It is organized to provide area descriptions and drug use overviews of both Maryland and Washington, DC, in this Introduction section. For each drug assessed in the Drug Abuse Patterns and Trends section, a region-wide overview is provided, followed by data specific to each jurisdiction.

### Area Description

**Washington, DC** (the District), a 68-square mile area, shares boundaries with the States of Maryland and Virginia. The Nation's Capital is home to approximately 581,530 people residing in eight wards; 20.2 percent live below the poverty level; 63.6 percent are in the labor force (U.S. Bureau of the Census, 2006 estimate). The northwest part of the city tends to be home to residents who are wealthy and White, while the northeast and southeast sections tend to be home to residents who are poor and African-American. Slightly more females than males live in DC, and the majority of the District's population are African-American (55 percent). However, the number of African-Americans residing in the District decreased approximately 14 percent in the 1990s, while the numbers of Asians and Hispanics increased (U.S. Bureau of the Census, 2000 Census; *The Washington Post*, May 17, 2007). The population of the District is slightly older than the Nation's population. One in five residents are younger than 18, and slightly more than 12 percent are 65 and older. More than one-third (39.1 percent) of adults age 25 or older have at least a bachelor's degree (District of Columbia Epidemiological Outcomes Workgroup—DCEOW—Profile 2008).

**The State of Maryland** is home to approximately 5,296,486 people residing in 24 jurisdictions. The State has slightly more females than males, and the majority of the State's population are White (64.0 percent). Approximately 27.9 per-

cent of Maryland's population are African-American, 4.3 percent are Hispanic or Latino, and 4.0 percent are Asian. As in the District, data from the 2000 census reveal several key demographic changes in Maryland since 1990. Maryland's total population increased by 11 percent from 1990 to 2000. Minority populations in the State increased sharply during this time, while the White population remained about the same. Increases were noted among the African-American population (24 percent), Asians (51 percent), and Hispanics (82 percent). Approximately three-quarters (74.4 percent) of the State's population are age 18 and older, comparable to the national average of 74.3 percent. Approximately 11.3 percent of Maryland's population are 65 and older, slightly lower than the national average. More than three-quarters (83.8 percent) of the State's residents are high school graduates or higher, and nearly one in three (31.4 percent) has a bachelor's degree or higher—an education level higher than that of the Nation's general population.

According to data from the Bureau of Labor Statistics, the unemployment rate across the region is increasing. The percentage of unemployed DC residents increased to 10.7 percent in May 2009 (from 6.6 percent in May 2008). The percentage of unemployed Maryland residents increased to 7.2 percent (from 4.1 percent in May 2008). The DC unemployment rate was higher than the national average (*The Washington Post*, June 20, 2009).

## DRUG USE OVERVIEW

**Washington, DC:** According to the National Survey on Drug Use and Health (NSDUH) annual State averages for 2007/2008, an estimated 12.13 percent of DC residents age 12 or older reported past-month illicit drug use; 60.53 percent reported past-month drinking (a substantial increase from 2002/2003); and 29.92 percent reported past-month binge drinking (a substantial increase from 2002/2003). Approximately one-third (35.02 percent) of residents age 12–20 drank alcohol, and nearly one-quarter (22.77 percent) reported binge drinking (a substantial increase from 2002/2003).

**Maryland:** In Maryland, an estimated 7.29 percent of residents age 12 or older reported past-month illicit drug use; 55.1 percent reported past-month drinking; and 22.14 percent reported past-month binge drinking. Approximately one-quarter (28.1 percent) of residents age 12–20 drank alcohol, and nearly one-fifth (17.87 percent) reported binge drinking (Substance Abuse and Mental Health Services Administration [SAMHSA], Office of Applied Studies [OAS], NSDUH, 2006–2007).

The Washington/Baltimore High Intensity Drug Trafficking Area (W/B HIDTA) has been monitoring drug threats in the Maryland/Washington, DC/Virginia region since 1994. Current primary drug threats include crack and other cocaine, heroin, and marijuana. Law enforcement representatives rank PCP (phencyclidine) as the fifth drug threat. Prevention and treatment representatives, in comparison, rank prescription pharmaceuticals as the fifth threat. Drug seizures decreased by more than one-third in 2009. The amount of heroin seized by HIDTA task forces more than tripled from 26 kilograms in 2007 to 87 kilograms in 2008 and decreased in 2009 to 78 kilograms. This was due principally to a sharp decrease in seizures in the Baltimore metropolitan area. The amount of club drugs and cocaine seized also decreased sharply. In contrast, the amount of methamphetamine seized increased, particularly in the Washington, DC, metropolitan area (DC District and three Maryland counties) from 6 to 49 kilograms. HIDTA task forces have identified 415 drug trafficking organizations (DTOs) and money laundering organizations in the region. The majority of these DTOs operate in multiple States and are African-American, Caucasian, Mexican, or Jamaican. The most frequently trafficked drugs by these DTOs are cocaine/crack, marijuana, and heroin (W/B HIDTA 2010).

Information from the W/B HIDTA suggests that Maryland and Washington, DC, have a wide variety of drug transportation options, including an extensive highway system, two major airports, and rail and bus systems. While W/B HIDTA information suggests that traffickers use all of these options

extensively, the region appears to be a secondary drug distribution center. Most drugs intended for distribution in Maryland or DC are distributed first to larger cities, such as New York City and Miami (W/B HIDTA 2009).

Alcohol abuse costs Maryland and the District approximately \$4.1 billion per year, and illicit drug use costs about \$2.7 billion per year. In fiscal year (FY) 2005, Washington, DC, spent approximately \$360 million to address the problem. Approximately 49 treatment programs, 20 publicly funded prevention programs, 11 recovery clubs, and 727 weekly recovery meetings are based in the District. There were more than 1,500 licensed alcohol retailers (as of January 2010) and more than 1,100 issued tobacco licenses (as of 2007) in DC. There were approximately 4,818 admissions to treatment programs in the District in 2008. The majority of people seeking treatment were male, African-American, and age 36 or older. In Maryland, the FY 2009 budget for the Alcohol and Drug Abuse Administration (ADAA) was approximately \$144 million. In FY 2009, 127,757 individuals received single-service prevention activities, and 18,340 participated in recurring programs. The majority of these people were White and female, but percentages served were very similar across age groups (“Outlook & Outcomes 2009,” an annual publication of the Maryland ADAA). Approximately 507 treatment programs are currently listed on the ADAA Web site. A recent data run indicated that there were 60,404 admissions to Maryland treatment programs in 2009. The most frequently mentioned drugs were alcohol, heroin, marijuana, and cocaine. The majority of clients seeking treatment were male and age 35 or older.

## DATA SOURCES

A number of sources were used to obtain comprehensive information regarding drug use trends and patterns in Maryland and Washington, DC. Data for this report were obtained from the sources listed below:

- **Test results on drug items analyzed** by local crime laboratories were obtained from the

National Forensic Laboratory System (NFLIS) for calendar year (CY) 2009 (exhibits 1a and 1b).

- **Drug-related death data** for Washington, DC, were obtained from the 2005 through 2008 Annual Reports, prepared by the District's Office of the Chief Medical Examiner (OCME). Drug-related death data for Maryland are from special data runs conducted by the Maryland Office of the Chief Medical Examiner. Exhibits 2a and 2b show the number of drug overdose and drug-positive deaths by drug in DC, and exhibit 2c shows the number of drug intoxication deaths in Maryland.
- **Student survey data** were adapted by the Center for Substance Abuse Research (CESAR) from the 2007 and 2009 Maryland and DC Public Schools Youth Risk Behavior Survey (YRBS). Exhibit 3 shows student drug use in Maryland in 2007 and 2009.
- **Arrestee data** were provided by the Arrestee Drug Abuse Monitoring II (ADAM II) system.
- **Arrestee urinalysis data** were provided by the District of Columbia Pretrial Services Agency for adult and juvenile arrestees from 1984 through April 2010 (exhibits 4a, 4b, 5a, and 5b).
- **Treatment data** for Maryland were provided by the Maryland ADAA (exhibit 6).
- **Drug prices and trafficking trends** were obtained from the Department of Justice, Drug Enforcement Administration (DEA), *National Illicit Drug Prices—Mid Year 2009*, the W/B HIDTA 2007 through 2009 Threat Assessment reports and the 2009 Annual Report.
- **Census data** for Maryland and Washington, DC, were derived from the U.S. Census Bureau. Additional information for DC came from the "Council of the District of Columbia; Subcommittee on Labor, Voting Rights, and Redistricting; Testimony of the Office of Planning/State Data Center on Bill 14–137, The Ward Redistricting Amendment Act of 2002."

- **Additional information** came from several sources. Data on the human immunodeficiency virus (HIV) and acquired immunodeficiency syndrome (AIDS) were provided by the DC HIV/AIDS Administration; retail distribution data were derived from the DEA's Automation of Reports and Consolidated Orders System (ARCOS); and other data or information were derived from the Maryland and DC Epidemiological Outcomes Workgroups State profiles (exhibits 7a, 7b, 8a, and 8b).

## DRUG ABUSE PATTERNS AND TRENDS

### Cocaine/Crack

Cocaine, particularly in the form of crack, remained the most serious drug of abuse in the District, accounting for more adult arrestee positive drug tests than any other drug, as well as more deaths than any other drug. It also continued to be a primary concern in Maryland. However, indicators across the jurisdictions were mixed, with seizures and treatment mentions decreasing and intoxication deaths increasing.

According to the National Drug Intelligence Center (NDIC), the cost of crack and other cocaine in the region has remained stable in recent years. In DC, in mid-2009, powder cocaine sold for approximately \$120–\$150 per gram retail. Crack sold for about the same retail: \$120–\$150 per gram and \$10 per rock. In Baltimore, powder cocaine sold for \$120–\$320 per gram retail, and crack sold for \$40–\$200 per gram retail. NFLIS data for CY 2009 showed that 41.31 percent of analyzed drug items in the District (about the same as 2008) and 29.31 percent in Maryland tested positive for cocaine (a decrease from 2008), more than for any other drug (exhibits 1a and 1b). There was also a decrease in the amount of cocaine seized by HIDTA initiatives throughout the W/B HIDTA region, from 677 kilograms in 2007 to 463 kilograms in 2008 to 169 kilograms in 2009 (W/B HIDTA 2008 and 2009 Annual Reports).

Cocaine-caused overdose deaths in the District totaled 75 in 2006, more than deaths caused by any other drug (exhibit 2a). This number decreased sharply in 2007, however, to 59, but increased again in 2008 to 63. The number of cocaine-positive cases (125) was surpassed only by alcohol-positive cases in the District in 2008 (201) (exhibit 2b). Nearly all of the driving under the influence (DUI) cases analyzed by the OCME tested positive for at least one drug. Approximately 8 percent of these cases were positive for cocaine. In Maryland and Baltimore, the total number of intoxication deaths decreased from 2007 to 2008 and increased in 2009 (5 percent statewide and 27 percent in Baltimore). Cocaine was the most frequently found drug in intoxication deaths statewide and in Baltimore in 2009 after heroin/morphine. In fact, cocaine intoxication deaths in Baltimore increased approximately 31 percent from 2008 to 2009. Cocaine intoxication statewide deaths remained about the same during this time (exhibit 2c). There were 192 alcohol-related fatal crashes (34 percent of all fatal crashes) in Maryland in 2007, resulting in the deaths of 221 people.

The results of the District's 2007 YRBS data indicated that 6.2 percent (95 percent confidence interval or CI=4.6–8.4) of public school students in grades 9–12 reported lifetime use of any form of cocaine, about the same as in 2003. Significantly more District students than Baltimore students reported lifetime cocaine use (6.2 [CI=4.6–8.4] versus 2.0 [CI=1.3–3.2] percent); 5.5 percent (CI=3.7–8.3) of Maryland students reported lifetime cocaine use, about the same as in 2005. In 2009, the percentage of Maryland students reporting lifetime cocaine use was about the same (6.3 percent) (exhibit 3). The 2009 DC YRBS data are not reportable due to a low response rate.

In the District, reports from the Pretrial Services Agency indicated that the percentages of both adult and juvenile arrestees testing positive for cocaine continued to decrease in 2009, and the decrease in youth positives appeared to continue in the first 4 months of 2010 (from 0.9 to 0.7 percent for juveniles) (exhibits 4a to 5b). The percentage

for adults, however, appears to be increasing for adults (from 28.7 to 31.4 percent).

For Maryland, primary admissions to certified Maryland alcohol and drug abuse treatment programs decreased by 9.5 percent from 2004 to 2006, but they increased slightly (1.5 percent) in 2007. Admissions decreased slightly in 2008 and 2009, but this may be because private programs expected to be dropped from the State reporting system and may have already stopped reporting data. Mentions of both crack and other cocaine appeared to have decreased from 2007 to 2009 (exhibit 6). Primary crack and other cocaine mentions at admission decreased in Baltimore as well, but city residents still accounted for approximately one-third of the crack and other cocaine admissions in the State.

## Heroin

Heroin represented one of the three leading drugs of abuse in Maryland and the District, along with cocaine and marijuana. In general, heroin was a bigger problem in Baltimore, while cocaine was a bigger problem in the District. The NDIC reported that heroin prices in mid-2009 remained stable: \$70,000–\$125,000 per kilogram retail and \$70–\$120 per gram retail in DC. In Baltimore, heroin prices were \$64,000–\$125,000 per kilogram retail and \$70–\$165 per gram retail.

NFLIS data for CY 2009 showed that approximately 10 percent of analyzed drug items in Washington, DC, and 20 percent in Maryland tested positive for heroin, making it the third most frequently found drug in the region (exhibits 1a and 1b). The percentage of drug items testing positive for heroin reported by NFLIS remained about the same from 2008 to 2009. More than twice as many heroin-positive items were found in the Baltimore MSA than in DC. The amount of heroin seized throughout the W/B HIDTA region by HIDTA task forces decreased slightly in 2009 but increased in Northern Virginia (W/B HIDTA 2009 Annual Report).

The number of overdose deaths involving heroin/morphine in the District decreased sharply

in 2007, but they increased again in 2008 (from 32 to 39). As in prior years, heroin/morphine was the second most likely drug to cause an overdose death (exhibit 2a). Heroin/morphine was the third most frequently found drug in all drug-positive cases in Washington, DC, in 2008 ( $n=77$ ) (exhibit 2b). In Maryland, heroin/morphine was the most frequently found drug in intoxication deaths in 2009, and the number of heroin/morphine deaths increased approximately 28 percent from 196 in 2008 to 250 in 2009 (exhibit 2c). Baltimore experienced a much larger increase (46 percent) from 72 in 2008 to 105 in 2009. Nearly one-half (42 percent) of the heroin/morphine intoxication deaths in the State occurred in Baltimore.

The results of the District's 2007 YRBS indicated that 5.4 percent (CI=3.8–7.7) of public school students in grades 9–12 reported lifetime use of heroin, about the same as in 2003. Significantly more District students (5.4 percent; CI=3.8–7.7) reported lifetime heroin use than Baltimore students (1.8 percent; CI=1.1–2.8). Maryland is the only jurisdiction with 2009 YRBS data available. In 2009, 4.1 percent (CI=3.3–5.0) of Maryland students reported lifetime heroin use, making heroin the only drug showing a significant increase in use from 2007 ( $p=.02$ ) (exhibit 3).

Reports from the Pretrial Services Agency in the District indicated that the percentage of adult arrestees testing positive for opiates remained about the same from 2001 through 2009. In 2009, 9.2 percent of adult arrestees tested positive for opiates; however, the percentage testing positive decreased to 8.9 percent during the first 4 months of 2010 (exhibits 4a and 4b). Juvenile arrestees were not tested for opiates during this time period.

Heroin continued to be the most frequently used illicit drug among Maryland treatment admissions (exhibit 6). Primary admissions for heroin to certified Maryland alcohol and drug abuse treatment programs remained about the same in 2008 as in 2007 and 2006, but they decreased slightly in 2009. These admissions were highest in Baltimore in 2009. More than one-half (53 percent) of the admissions in Baltimore mentioned heroin as a primary substance of abuse, and Baltimore

residents accounted for 56 percent of the admissions in the State. Primary heroin mentions at admission to treatment appeared to have decreased slightly from 2008 to 2009.

### Other Opiates/Narcotics

Drug overdose deaths in Washington, DC, involving methadone continued to decrease in 2008. Twenty-two drug-positive cases involved methadone, and 10 of these cases were classified as overdose deaths (exhibits 2a and 2b). Methadone intoxication deaths also decreased in Maryland statewide, but they stayed about the same in Baltimore from 2008 to 2009. In Maryland, methadone intoxication deaths decreased by 21 percent, from 164 in 2008 to 129 in 2009 (exhibit 2c). Methadone intoxication deaths in Baltimore increased from 52 to 55. The number of oxycodone-positive cases in DC tripled from 2007 to 2008 (from 6 to 18), but they were still lower than in 2006 (23) (exhibit 2b). In Maryland, oxycodone intoxication deaths increased from 81 in 2008 to 97 in 2009 (exhibit 2c), and the number of oxycodone intoxication deaths in Baltimore tripled (from 7 in 2008 to 21 in 2009).

Oxycodone, methadone, hydrocodone, and buprenorphine combined to account for approximately 4 percent of analyzed drug items reported to NFLIS in 2009 in Maryland and approximately 2 percent of analyzed drug items in DC. These items were twice as likely to be found in the Baltimore MSA as in DC.

The DEA's ARCOS reports showed that the retail distribution of oxycodone, methadone, and buprenorphine in Washington, DC, and Baltimore City and Baltimore County increased sharply from 2000 to 2007 (exhibits 7a and 7b). All of these drugs were distributed in far higher quantities in Baltimore City and County than in DC. Oxycodone was distributed in far higher quantities in both cities than methadone or buprenorphine. Oxycodone distribution nearly doubled, from 31,963.5 grams in 2000 to 60,664.81 grams in 2007 in DC. Distribution more than doubled, from 141,802.5 grams in 2000 to 290,662.41 grams in 2007 in Baltimore

City and County. Buprenorphine distribution increased from 224.17 grams in 2005 to 840.57 grams in DC in 2007 and from 2,622.65 grams in 2005 to 8,457.31 grams in 2007 in Baltimore City and County.

In Maryland, primary admissions for other opiates to certified drug and alcohol treatment programs increased by 48 percent, from 3,369 in 2006 to 4,982 in 2008, and continued to increase to 5,476 in 2009 (exhibit 6). More than one in five admissions involving other opiates were Baltimore residents.

## Marijuana

Marijuana was widely available in the District and Maryland, but local production was limited. No indoor grows were dismantled in 2007 (W/B HIDTA 2009), but seizures across the W/B HIDTA region increased slightly, from 4,304 kilograms in 2007 to 4,567 kilograms in 2008 (W/B HIDTA 2008 Annual Report). Seizures decreased to 4,155 kilograms in 2009 (W/B HIDTA 2009 Annual Report). Marijuana was available for wide-ranging but relatively stable prices in mid-2009. Retail prices were \$950–\$1,400 per pound and \$100–\$500 per ounce in the District. Prices in Baltimore covered a broader range: \$1,000–\$3,250 per pound and \$125–\$130 per ounce retail.

NFLIS data for CY 2007 showed that approximately 33.69 percent of analyzed drug items in Washington, DC, and 42.67 percent of Maryland items tested positive for marijuana/cannabis. This made marijuana the most frequently found drug in Maryland and the second most frequently found drug in DC. The percentage of items testing positive increased in Maryland from 2008 to 2009, but it stayed about the same in DC (exhibits 1a and 1b).

The results of the 2007 YRBS indicated that alcohol and marijuana were the two most frequently reported substances by public school students. More than 40 percent of public school students in grades 9–12 in Washington, DC, and Baltimore used marijuana at least once in their lives; 1 in 10 first used marijuana before age 13. Approximately one in five students reported using marijuana at least once in the past month. More

than one-third (36.5 percent; CI=31.3–42.0) of Maryland students reported lifetime marijuana use (exhibit 3). Substantially more DC students than Baltimore students reported alcohol use or DUIs. YRBS 2009 data for Maryland indicate that 35.9 percent of students reported lifetime use, about the same as in 2007.

No marijuana-involved deaths were reported by the District's or Maryland's CME in recent years, but marijuana was the third most frequently found illicit drug in DC DUI cases testing positive for illicit drugs in 2008, after alcohol and PCP. Marijuana was found in one-fifth (19 percent) of these cases (data not shown).

The DC Pretrial Services Agency does not test adult arrestees for marijuana, but marijuana was the most frequently found drug among juveniles. The proportion of juveniles testing marijuana-positive increased from 2004 to 2007, after decreasing steadily for 5 years; it remained level in 2008 and decreased slightly in 2009 (exhibits 5a and 5b). Approximately 52 percent tested positive in 2009, and 55 percent were marijuana-positive during the first 4 months of 2010.

Primary marijuana admissions to Maryland treatment programs increased by 11.4 percent from 2006 ( $n=9,950$ ) to 2008 ( $n=11,069$ ) and stayed about the same in 2009 (10,911) (exhibit 6). Four of the most populous jurisdictions—Baltimore City, Baltimore County, Prince George's County, and Montgomery County—each had more than 1,000 primary mentions of marijuana in 2008. Together they accounted for nearly one-half of the primary mentions of marijuana in 2008.

## PCP

Law enforcement generally rates PCP (phencyclidine) as a secondary threat, given its fluctuations in use (as demonstrated by W/B HIDTA reports and DC Pretrial Services urinalysis results). PCP can be used alone or in combination with other drugs, most often marijuana.

NFLIS data for 2009 showed that 5.94 percent of analyzed drug items tested positive for PCP in Washington, DC, making it the fourth most



frequently found drug, after cocaine, marijuana, and heroin (exhibit 1a). This is a slight decrease from 2008. However, very few items (0.32 percent) in Maryland were positive for PCP.

Twenty-eight PCP-positive deaths occurred in Washington, DC, in 2008, a decrease of nearly one-half from 2007 (exhibit 2b). Six overdose deaths in DC involved PCP. Approximately 25 percent of the DUI cases in DC were positive for PCP. In Maryland, there were three intoxication deaths involving PCP in 2009—two in Prince George’s County (a county bordering DC) and one in Baltimore City.

Data from the DC Pretrial Services Agency showed a rise in PCP use among adult arrestees, from the low single digits in the late 1990s to the mid-teens in 2002 and 2003 (exhibits 4a and 4b). Positive tests for PCP among adults increased, from 6 percent in 2004 to 10 percent in 2008. In 2009, a slightly lower percentage (8.9 percent) of adults tested positive for PCP, but the percentage appeared to be increasing again during the first 4 months of 2010 (10.3 percent). Trend data from 1987 to the present indicated that PCP use among the juvenile arrestee population fluctuated greatly between 1987 and 2004 and then leveled off at approximately 2 to 3 percent each year through 2008. In 2009, 1.5 percent of juvenile arrestees tested positive for PCP, a low previously reached in 2004 (exhibits 5a and 5b). The percentage testing positive during the first 4 months of 2010 remained low (1.3 percent).

Primary treatment admissions involving PCP in Maryland—though much lower than those for other drugs—increased by 51 percent between 2006 ( $n=340$ ) and 2009 ( $n=514$ ) (exhibit 6).

### **Methamphetamine/MDMA**

Abuse of methamphetamine has remained very low in Washington, DC, and Maryland. No drug overdose deaths were reported due to methamphetamine, MDMA (3,4-methylenedioxymeth-amphetamine), or MDA (3,4-methylenedioxyamphetamine) in 2008 in DC, but the 2008 annual report included only the most

commonly found drugs. However, five decedents tested positive for MDMA and six tested positive for methamphetamine/amphetamine at the time of their deaths in the District in 2008 (exhibit 2b). In Maryland, there were no intoxication deaths involving methamphetamine and only two involving MDMA (one in 2007 and one in 2008). Neither involved a Baltimore resident. Methamphetamine and MDMA accounted for less than 1 percent of the primary drug mentions at admission to treatment in Maryland.

The W/B HIDTA continued to report that methamphetamine use was limited to the DC club scene and rural areas of the HIDTA region. Methamphetamine continued to be ranked as a secondary threat in the 2010 threat assessment. Substance abuse professionals surveyed in 2008 from the District were more likely to rate methamphetamine as a threat than professionals in Maryland or Virginia. However, none of these professionals felt that methamphetamine was likely to become a primary drug of abuse. Seizures throughout the W/B HIDTA regions remained low and decreased slightly in 2008 (W/B HIDTA 2008 Annual Report). In 2009, however, methamphetamine seizures increased particularly in the DC metropolitan area (from 6 to 49 kilograms).

NFLIS data for 2009 showed that slightly more items tested positive for methamphetamine (1.45 percent) than for MDMA/MDA (0.71 percent) in DC. In Maryland, less than 1 percent of the items tested were positive for methamphetamine or MDMA/MDA. The NDIC reported that locally produced powder methamphetamine sold for \$140–\$150 per gram retail in mid-2009 in DC. Mexican ice, by comparison, sold for \$1,100–\$1,800 per ounce in Baltimore. MDMA pills sold for approximately twice as much in DC (\$20–\$25) as in Baltimore City and County (\$10–\$12) in 2007. In mid-2009, MDMA sold for approximately the same amount in DC (\$4–\$25) and in Baltimore (\$10–\$25). No purchases of methamphetamine or MDMA were listed for Baltimore for 2008.

The results of the 2007 YRBS also indicated that significantly more public school students in grades 9–12 reported lifetime use of

methamphetamine and MDMA in DC than in Baltimore (6.1 [CI=4.5–8.2] versus 1.9 [CI=1.3–2.9] percent and 7.7 [CI=6.1–9.7] versus 3.5 [CI=2.5–4.8] percent, respectively). The 2009 Maryland YRBS indicated that 4.3 percent of students reported lifetime methamphetamine use and 6.4 percent reported lifetime MDMA use, about the same as in 2007 (exhibit 3).

The DC Pretrial Services Agency began testing for amphetamines in August 2006. The percentage of adult arrestees testing positive for amphetamines decreased, from 3.7 percent in 2007 to 1.1 percent in 2009. During the first 4 months of 2010, 0.9 percent tested positive. The percentage of juvenile arrestees testing positive for amphetamines also decreased, from 2.7 percent in 2007 to 0.9 percent in 2009. During the first 4 months of 2010, 0.3 percent of juvenile arrestees were positive for amphetamines (data not shown).

## ADAM II

The 2007 and 2008 ADAM II reports were released just prior to this report. ADAM II continues the methodology from the original ADAM in 10 sites, including Washington, DC. ADAM II data in DC come from a urinalysis for 10 drugs and a 20–25-minute face-to-face interview. The interview covers “basic demographics, drug use history, current use, recent participation in buying and selling drugs, lifetime drug and mental health treatment, and, for those with any illegal drug use in the prior 12 months, detailed information on arrests, treatment, housing, and drug and alcohol use for the last year” (ADAM II 2008 Annual Report p. vi).

The 2008 DC sample included an eligible sample of 177 male arrestees in 7 facilities. There was a response rate of 59 percent ( $n=95$ ) for the interviews and a response rate of 58 percent ( $n=55$ ) for the urinalysis. Approximately 33 percent of the arrestees tested positive for cocaine, 30 percent for marijuana, 10 percent for opiates, and 1 percent for methamphetamine. The percentages for cocaine and opiates were very similar to those found from the Pretrial Services tests, which include all

willing adult arrestees ( $n=24,375$ ); the percentages testing positive for methamphetamine were low in both. More than one-half of the arrestees tested through ADAM II were age 36 or older, and approximately 87 percent were African-American. The majority of these arrestees had completed a high school or GED diploma and worked full time. Approximately 44 percent owned a house, mobile home, or apartment. Although more than 40 percent had no health insurance, more than one-half of those reporting cocaine use had received inpatient treatment, and more than one-half of those reporting heroin use had received outpatient treatment. Trends from 2007 to 2008 showed decreases in the percentages of arrestees testing positive for cocaine, marijuana, and methamphetamine. The percentage testing positive for opiates remained about the same.

## INFECTIOUS DISEASES RELATED TO DRUG ABUSE

Washington, DC, and Maryland both switched from a code-based reporting system to a name-based reporting system for HIV cases, as required by the Centers for Disease Control and Prevention (CDC). As a result of this shift, neither DC nor Maryland released HIV case data in 2008. Efforts continue in both jurisdictions to clean and assess the data to ensure its accuracy. CDC estimates that this transition takes approximately 5 years. As a result, the most recent data available for Maryland are for 2007. DC recently released a new report on AIDS cases and has provided data through 2008.

The HIV/AIDS Epidemiology Annual Report 2009 indicated that the rate of newly reported AIDS cases in DC decreased by one-third (33.2 percent), from 786 in 2004 to 525 in 2008 (exhibit 8a). Newly reported injection drug user (IDU) and men who have sex with men (MSM)/IDU AIDS cases in DC decreased from 218 in 2005 to 94 in 2008.

IDU-related HIV cases in Maryland also decreased steadily from 2001 to 2008. In 2008, the majority of new HIV diagnoses in Maryland were male and African-American. Nearly three-quarters were between the ages of 20 and 49. In 2008, there

were 301 IDU and IDU/MSM-related HIV cases in Maryland. IDU-related HIV cases decreased steadily from 44.2 percent in 2001 to 21.8 percent in 2008. MSM/IDU-related HIV cases remained between 1 and 3 percent during this time (exhibit 8b). A review of cumulative IDU-related living HIV cases as of 12/31/08 with or without AIDS revealed that 40 percent were IDU-related.

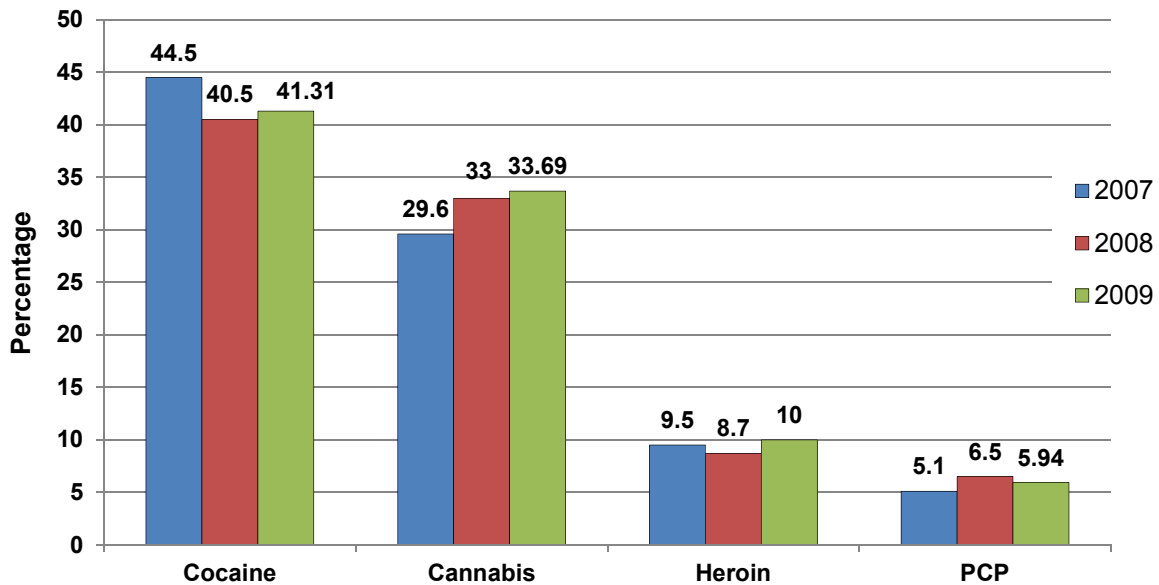
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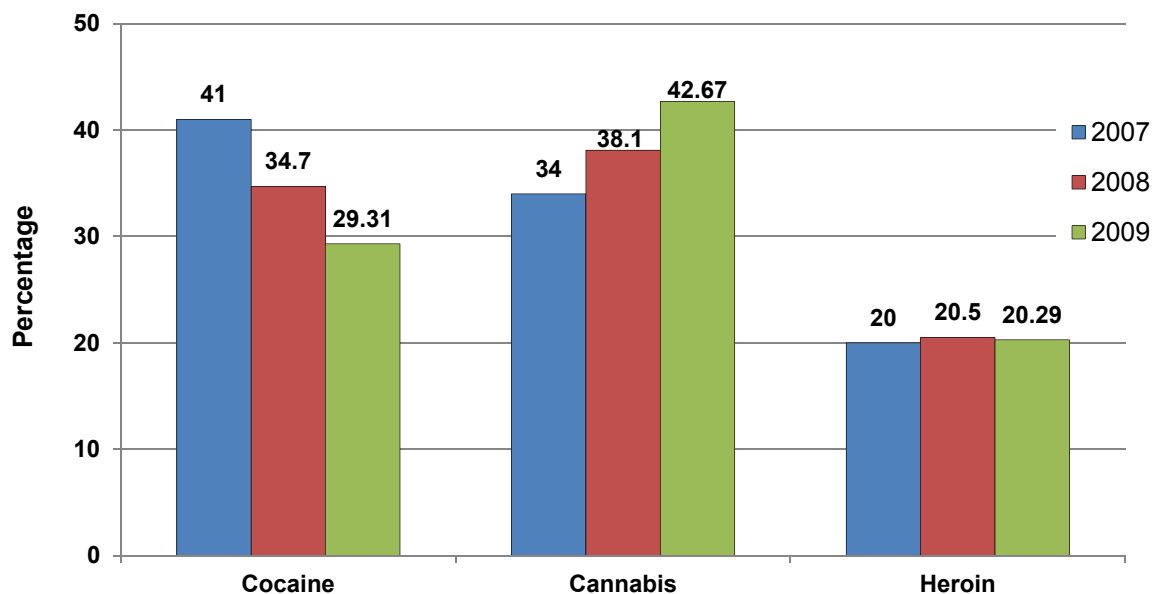
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**Exhibit 1a. Percentage of Drug-Positive Items Identified in NFLIS Analyses<sup>1</sup> for Selected Drugs in Washington, DC: 2007–2009**



<sup>1</sup>In 2007, *N*=4,141 drug items were tested; in 2008, *N*=3,715 items were tested; in 2009, *N*=3,520 items were tested.  
SOURCE: NFLIS, DEA, special data runs May 2008, 2009, and 2010

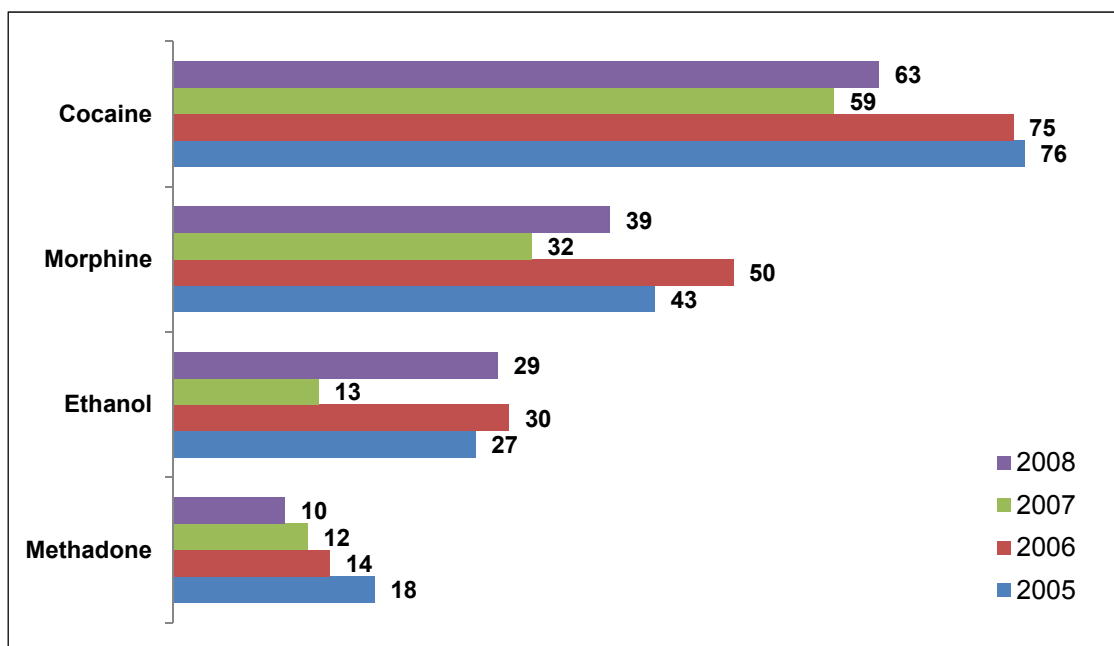
**Exhibit 1b. Percentage of Drug-Positive Items Identified in NFLIS Analyses<sup>2</sup> for Selected Drugs in Maryland: 2007–2009**



<sup>1</sup>In Maryland, 1.3 percent of items tested positive for oxycodone; less than 1 percent of items tested positive for MDMA/MDA, alprazolam, buprenorphine, clonazepam, methadone, PCP, and methamphetamine

<sup>2</sup>In 2007, *N*=62,355 drug items were tested; in 2008, *N*=57,968 items were tested; in 2009, *N*=55,149 items were tested.  
SOURCE: NFLIS, DEA, special data runs May 2008, 2009, and 2010

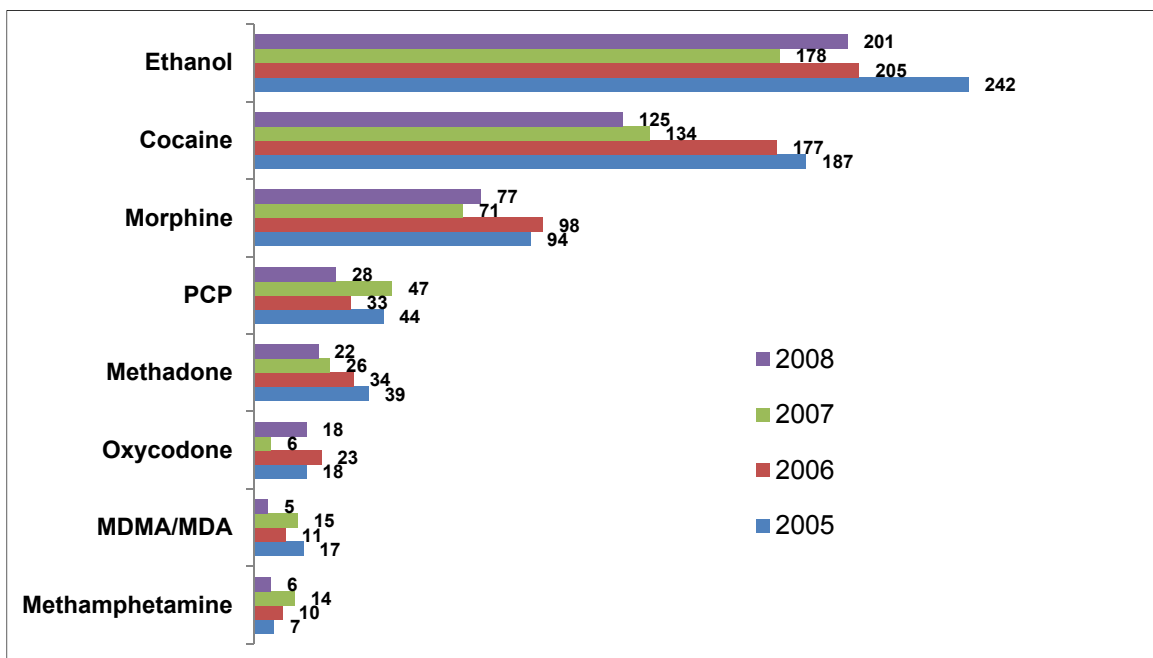
Exhibit 2a. Number of Drug Overdose Deaths by Drug<sup>1</sup> in Washington, DC: 2005–2008



<sup>1</sup>In 2005, N=119 deaths; in 2006, N=111 deaths; in 2007, N=93 deaths; in 2008, N=105 deaths.

SOURCE: Adapted by the Center for Substance Abuse Research (CESAR), from data from the Office of the Chief Medical Examiner, Washington, DC, Annual Reports 2005, 2006, 2007, and 2008

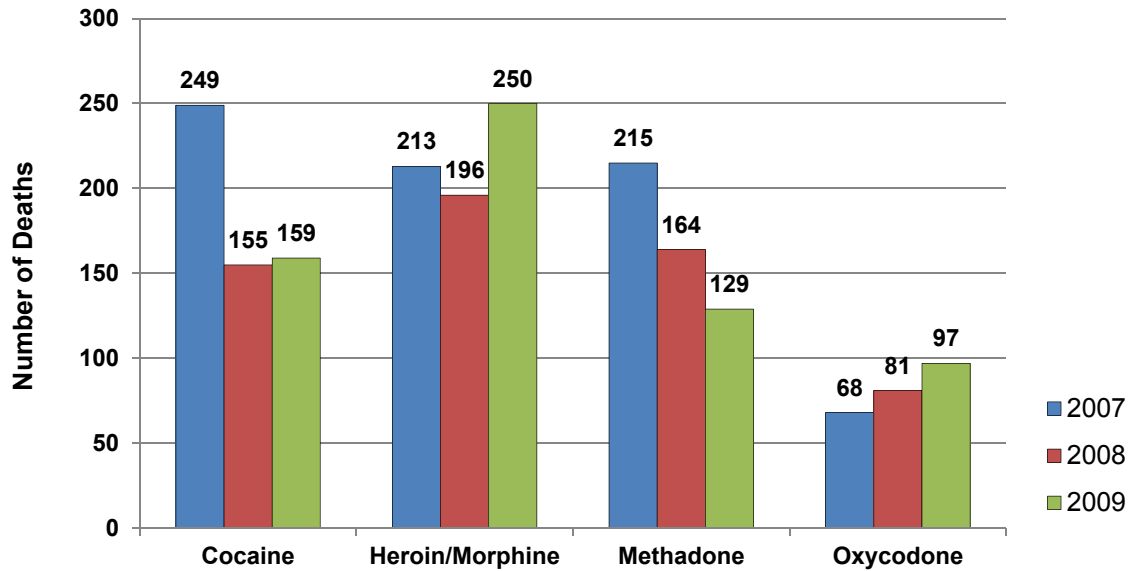
Exhibit 2b. Number of Drug-Positive Deaths by Drug<sup>1</sup> in Washington, DC: 2005–2008



<sup>1</sup>In 2005, N=631 positive cases; in 2006, N=503 positive cases; in 2007, N=447 positive cases; in 2008, N=500 positive cases. Some decedents tested positive for multiple drugs.

SOURCE: Office of the Chief Medical Examiner, Washington, DC, 2005, 2006, 2007, and 2008 Annual Reports

**Exhibit 2c. Number of Drug Intoxication Deaths for Selected Drugs in Maryland: 2007–2009<sup>1</sup>**



<sup>1</sup>In 2007, N=836; in 2008, N=721; in 2009, N=760.

SOURCE: Office of the Chief Medical Examiner, special data run May 2009 and March 2010

**Exhibit 3. Drug Use by Percent, Including 95 Percent Confidence Intervals (CIs), Among Maryland Public School Students in Grades 9–12: 2009**

Lifetime Drug Use	2007 (N=1,528)	2009 (N=1,664)
Cocaine	5.5 (CI=3.7–8.3)	6.3 (CI=5.1–7.8)
Heroin	2.4 (CI=1.4–4.0)	4.1 (CI=3.3–5.0)
Methamphetamine	3.0 (CI=2.0–4.5)	4.3 (CI=3.4–5.3)
Ecstasy (MDMA)	6.3 (CI=4.0–9.7)	6.4 (CI=5.3–7.8)
Marijuana	36.5 (CI=31.3–42.0)	35.9 (CI=31.9–40.0)

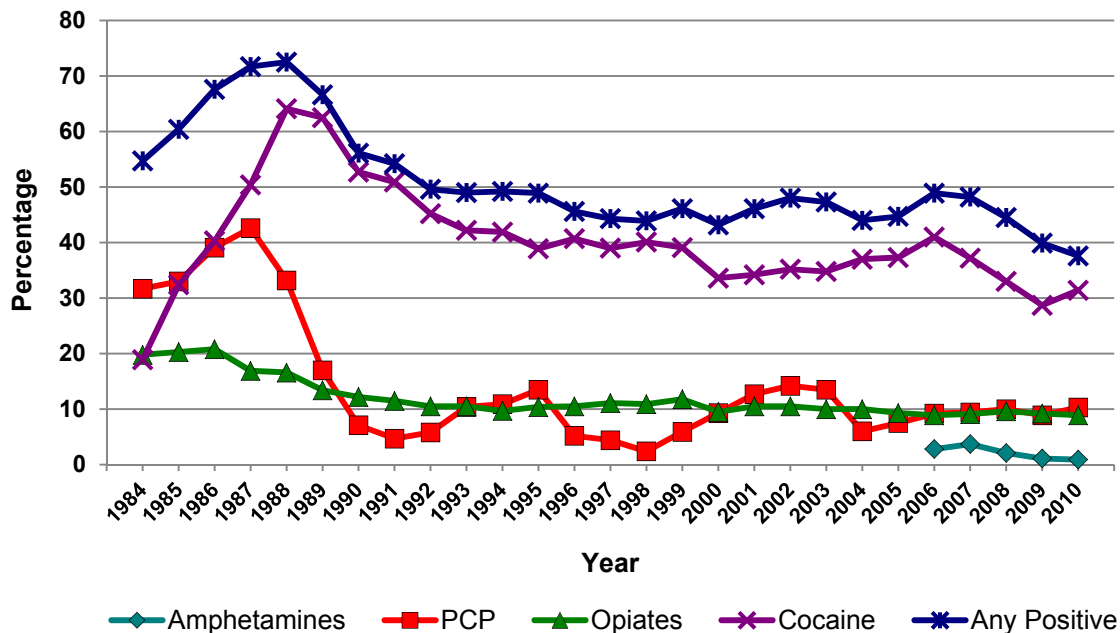
SOURCE: Adapted by the Center for Substance Abuse Research (CESAR) from data from YRBS Online

**Exhibit 4a. Percentage of Adult Arrestees Testing Positive for Selected Drugs in Washington, DC: 2000–2009**

Drug	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
(N=)	(15,630)	(17,350)	(17,952)	(17,742)	(19,531)	(19,867)	(23,271)	(22,800)	(24,375)	(22,319)
Cocaine	33.6	34.2	35.2	34.8	36.6	37.3	41.0	37.2	33.0	28.7
PCP	9.3	12.7	14.2	13.5	6.2	7.5	9.2	9.4	9.6	8.9
Opiates	9.5	10.5	10.5	10.0	9.8	9.3	8.9	9.1	10.0	9.2
Any Drug	43.2	46.1	48.0	47.3	43.5	44.7	48.9	48.2	44.5	39.9

SOURCE: District of Columbia Pretrial Services Agency

**Exhibit 4b. Percentage of Adult Arrestees Testing Positive for Any Drug, Cocaine, PCP, and Opiates in Washington, DC: 1984–2010**



2010 includes January–April. 2006 Amphetamines covers August–December only.

SOURCE: Adapted by the Center for Substance Abuse Research (CESAR) from data from the District of Columbia Pretrial Services Agency

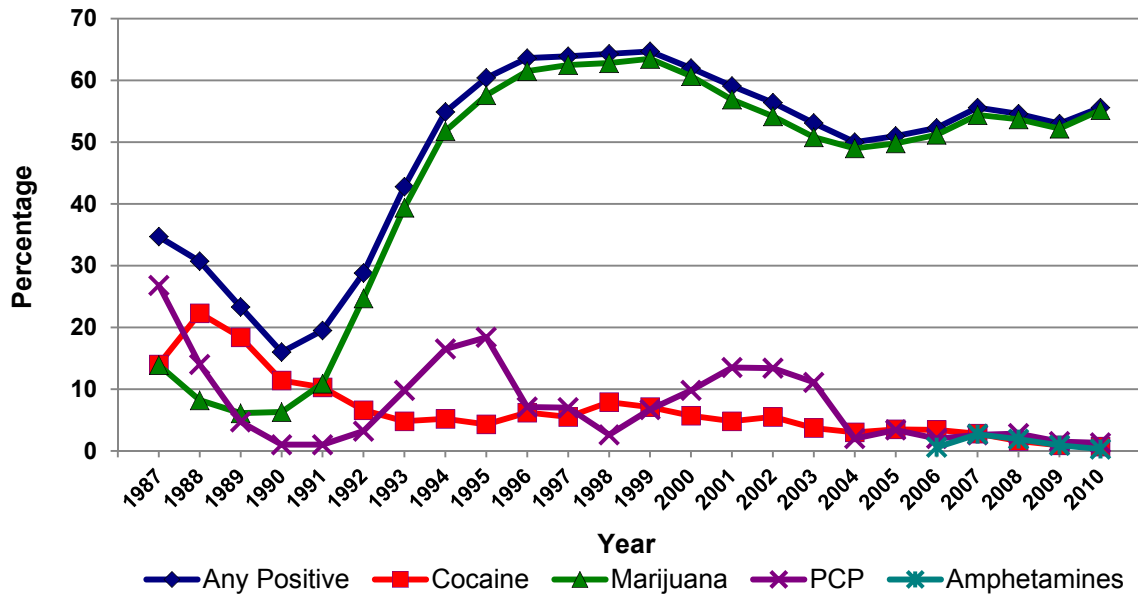


**Exhibit 5a. Percentage of Juvenile Arrestees Testing Positive for Selected Drugs in Washington, DC: 2000–2009**

Drug	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
(N=)	(2,162)	(2,165)	(1,896)	(1,899)	(2,001)	(2,319)	(2,379)	(2,248)	(2,566)	(2,614)
Marijuana	60.7	56.9	54.2	50.8	49	49.8	51.2	54.4	53.7	52.2
Cocaine	5.7	4.8	5.5	3.7	3.3	3.5	3.4	2.8	1.6	0.9
PCP	9.8	13.5	13.4	11.1	1.9	3.4	2.0	2.6	2.8	1.5
Any Drug	62.0	59.1	56.4	53.1	49.6	51.0	52.3	55.6	54.6	53.0

SOURCE: District of Columbia Pretrial Services Agency

**Exhibit 5b. Percentage of Juvenile Arrestees Testing Positive for Any Drug , Cocaine, PCP, and Marijuana in Washington, DC: 1987–2010**

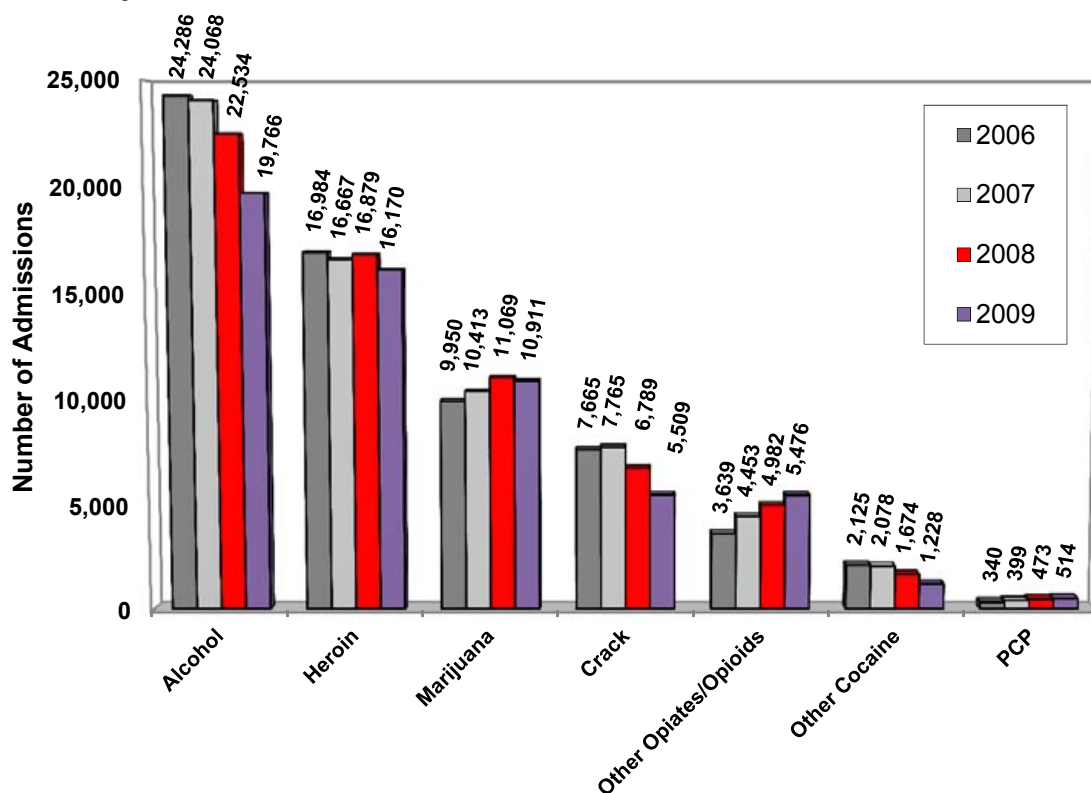


Any positive includes opiates from 1987 through mid-1994 (<1 percent).

2010 includes January–April Amphetamines tests; testing started in August 2006.

SOURCE: Adapted by the Center for Substance Abuse Research (CESAR) from data from the District of Columbia Pretrial Services Agency

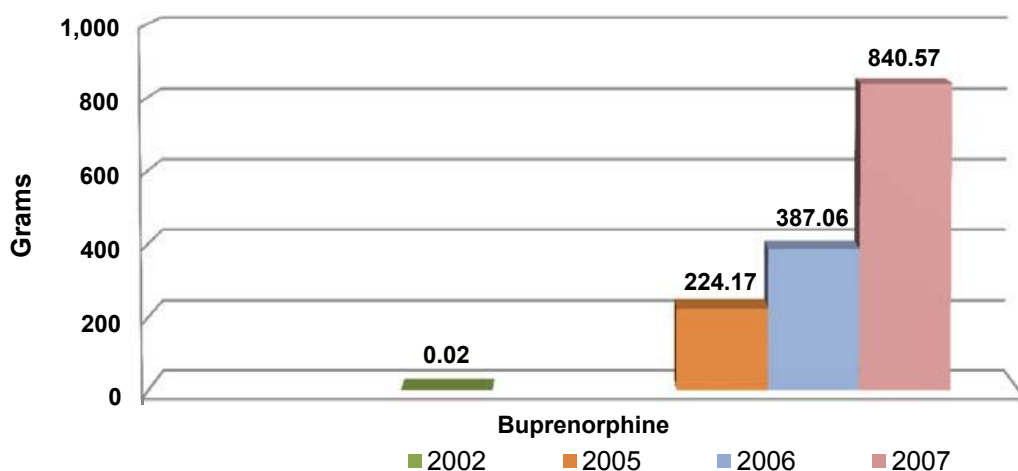
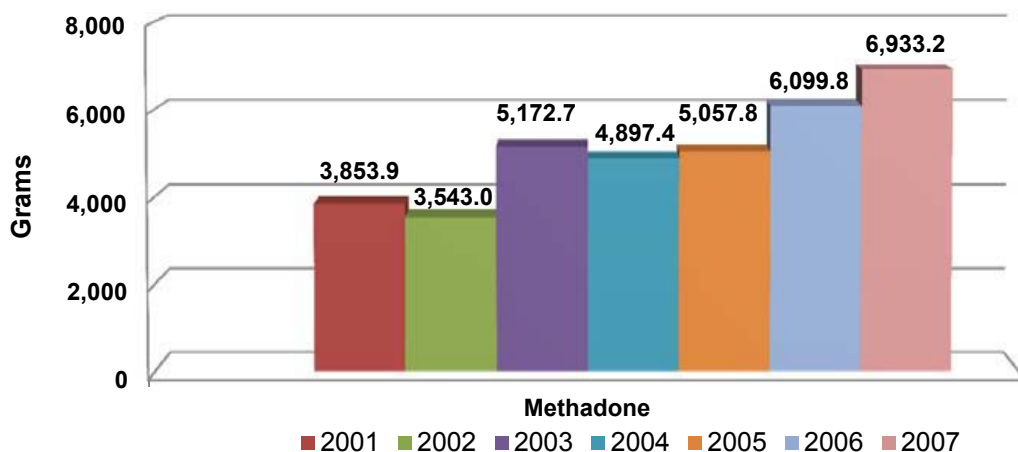
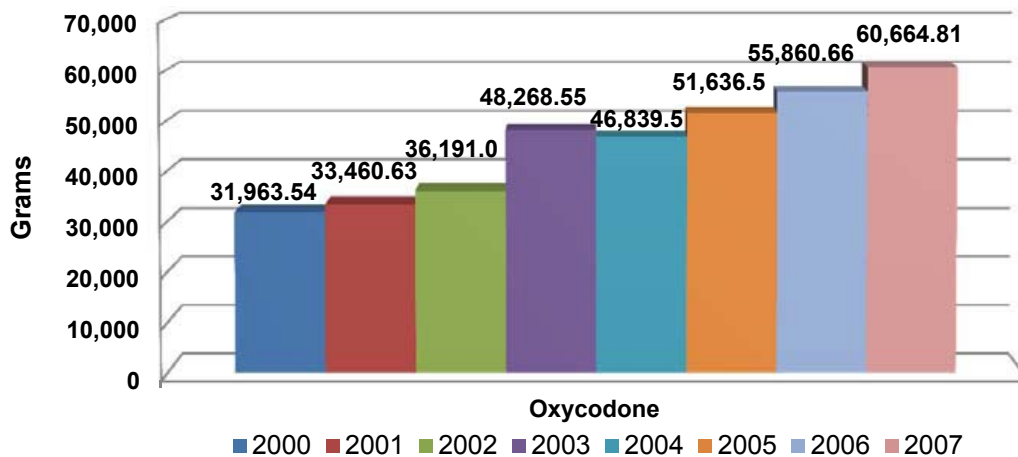
**Exhibit 6. Number of Primary Admissions<sup>1</sup> to Certified Alcohol and Drug Treatment Programs in Maryland: 2006–2009**



<sup>1</sup>In 2006, N=65,861; in 2007, N=66,852; in 2008, N=65,375; in 2009, N=60,404.

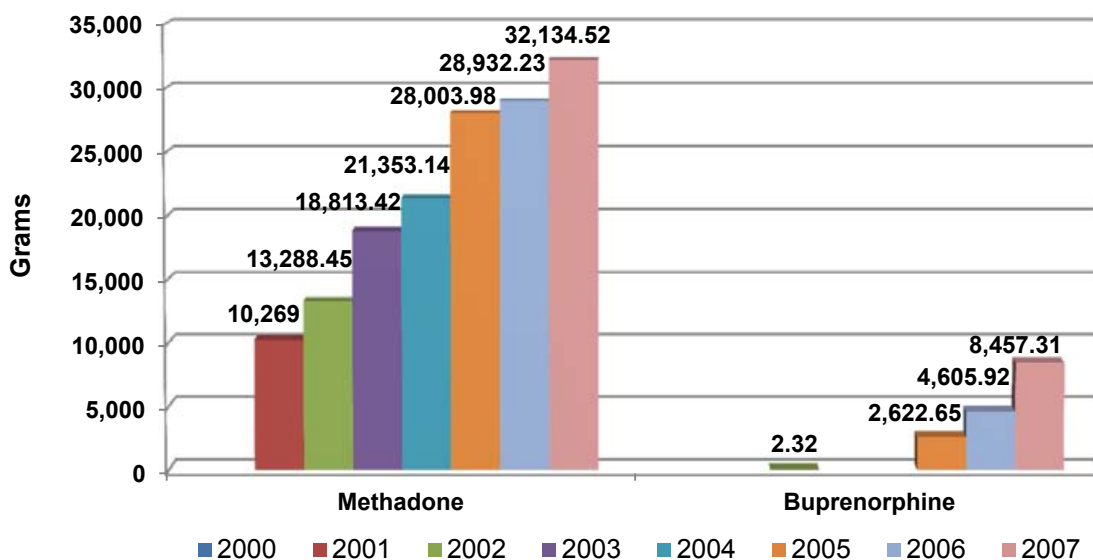
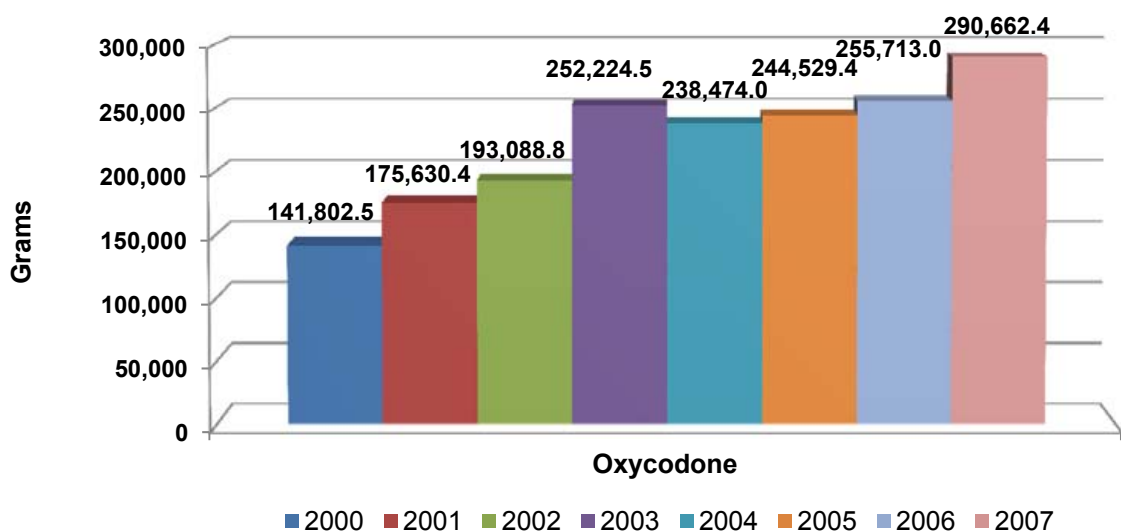
SOURCE: Adapted by the Center for Substance Abuse Research (CESAR) from data provided by the Alcohol and Drug Abuse Administration, Dept. of Health and Mental Hygiene, SAMIS System

Exhibit 7a. Retail Distribution of Selected Drugs by Year and Drug<sup>1</sup> in Washington, DC: 2000–2007



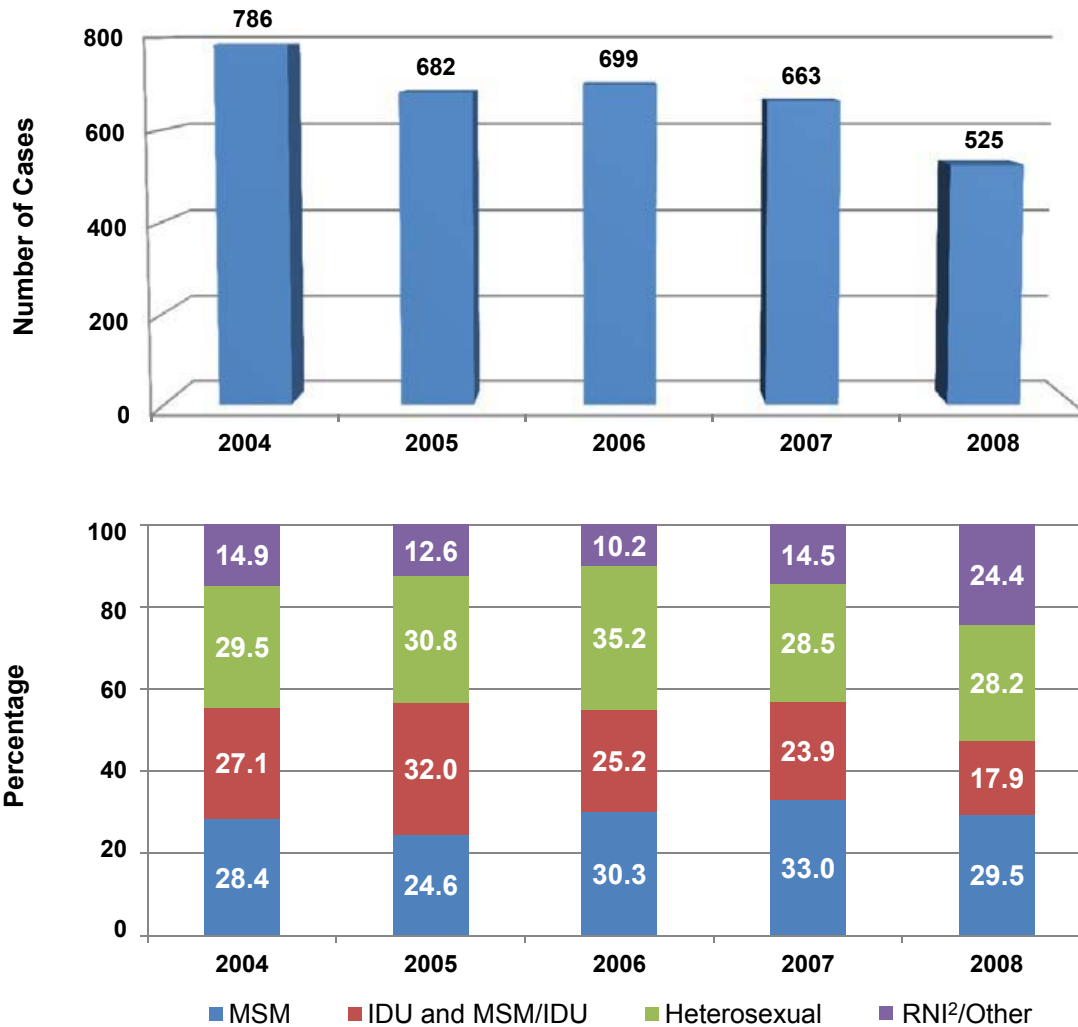
<sup>1</sup>Buprenorphine first became available for treating heroin addiction in May 2003.  
SOURCE: DEAARCOS Retail Drug Summaries

Exhibit 7b. Retail Distribution of Selected Drugs by Year and Drug<sup>1</sup> in Baltimore: 2000–2007



<sup>1</sup>Buprenorphine first became available for treating heroin addiction in May 2003.  
SOURCE: DEAARCOS Retail Drug Summaries

**Exhibit 8a. New Adult and Adolescent AIDS Cases by Year and by Mode of Transmission<sup>1</sup> in Washington, DC: 2004–2008**

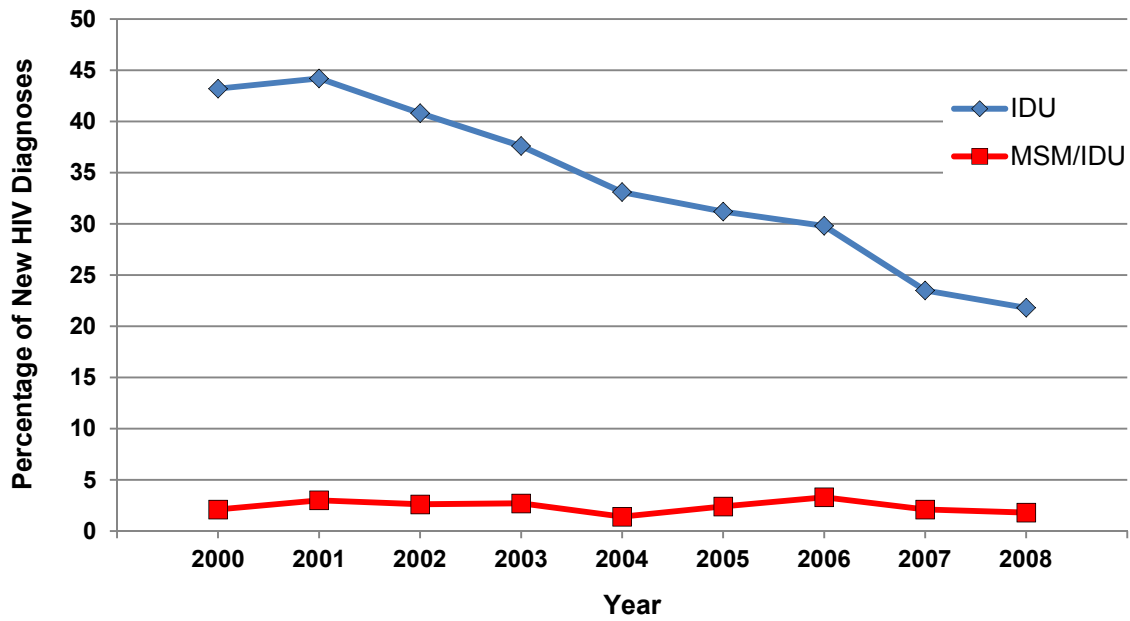


<sup>1</sup>IDU includes injection drug users (IDUs) and men who have sex with men (MSM) who are also IDUs.

<sup>2</sup>RNI=Risk Not Identified.

SOURCE: HIV/AIDS Surveillance and Epidemiology Division, Administration for HIV Policy and Programs, DC Department of Health, HIV/ADIS Annual Report Update 2009

**Exhibit 8b. Newly Diagnosed IDU- and MSM/IDU-Related HIV Cases With or Without an AIDS Diagnosis and with Reported Exposure Category, as a Percentage of New HIV Diagnoses, by Year of HIV Diagnosis in Maryland: 2000–2008**



SOURCE: Maryland HIV/AIDS Epidemiological Profile Fourth Quarter 2009, MD Department of Health and Mental Hygiene, Infectious Disease and Environmental Health Administration

# Greater Boston Patterns and Trends in Drug Abuse: 2009

Daniel P. Dooley<sup>†</sup>

## ABSTRACT

*Boston's cocaine indicators for 2009 were mixed (decreasing and stable) at high levels. Cocaine (including crack) primary drug treatment admissions decreased slightly from 8 percent, which had held steady in the 3-year period from 2006 to 2008, to 7 percent in 2009. The overall decrease was driven by a sharp decrease in the number of crack admissions, from 1,068 in 2008 to 779 in 2009. Additionally, 20 percent (one in five) of all treatment admissions identified cocaine (including crack) as a secondary drug in 2009, compared with 23 percent in 2008. Cocaine helpline calls decreased from 18 percent in 2007 and 2008 to 15 percent in 2009. Though the proportion of Class B drug arrests (mainly cocaine) increased from 2008 to 2009, no significant change was observed after adjusting for the impact of a major change in Massachusetts' law that effectively decriminalized possession of an ounce or less of marijuana. The adjusted (nonmarijuana) proportion of cocaine drug laboratory samples decreased from 40 percent in 2008 to 38 percent in 2009. Heroin abuse indicators were mixed (stable and increasing) at high levels. The proportion of heroin primary drug treatment admissions increased to the highest level in 10 years of reported data, from 49 percent in 2008 to 51 percent in 2009. In 2009, 84 percent of all heroin admissions (more than four-fifths) reported injecting heroin, up from 80 percent in 2008 and 67 percent in 2000. Heroin helpline calls remained stable at 34 percent from 2008 to 2009. Though the proportion of Class A drug arrests (mainly heroin) increased from*

*2008 to 2009, no significant change was observed after adjusting for the impact of decriminalizing possession of small amounts of marijuana. The adjusted (nonmarijuana) proportion of heroin drug laboratory samples increased from 17 percent in 2008 to 22 percent in 2009. Indicators for other opiates were mostly increasing at moderate levels. The proportion of other opiates/synthetics primary treatment admissions remained between 3 and 4 percent for 8 years from 2002 to 2009, but the 564 admissions in 2009 was highest among 10 years of reported data. Additionally, 5 percent of admissions cited other opiates/synthetics as secondary drugs, up from 2 percent in 2008. Calls to the helpline with nonheroin opioid mentions increased from 17 percent in 2007 and 2008 to 20 percent in 2009. The number of oxycodone drug laboratory samples increased 35 percent from 2008 to 2009. Benzodiazepine abuse indicators remained stable at moderate levels. Benzodiazepine helpline calls were stable at 5 percent from 2008 to 2009. From 2000 to 2009, the number of benzodiazepine helpline calls ranged between 137 and 188, while the proportion slightly increased from 3 to 5 percent. In 2009, 2 of the top 10 drug laboratory samples were benzodiazepines; clonazepam and alprazolam together accounted for 4 percent of all samples analyzed. Marijuana indicators not directly impacted by the change in Massachusetts' marijuana possession law were fairly stable at moderate levels. Treatment admissions citing marijuana as primary drug remained between 3 and 4 percent from 2000 to 2009, but combined marijuana primary and secondary drug admissions increased from 9 percent in 2008 to 11 percent in 2009. From 2000 to 2009, the proportion of marijuana helpline calls remained fairly stable between 4 and 6 percent. Mainly as a result of the new marijuana law in 2009, the proportion of Class D drug arrests (mainly marijuana) decreased substantially from 35 percent in 2008 to 21 percent in 2009. Similarly, the proportion of marijuana drug laboratory samples decreased from 43 percent in 2008 to 24 percent in 2009. Methamphetamine abuse indicators remained low overall in Boston. In*

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*2009, 35 treatment admissions identified methamphetamine as their primary drug. There were only 12 methamphetamine calls to the helpline in 2009. Ranking 17th among identified drugs in 2009, methamphetamine drug laboratory samples totaled 69 in 2008 and 66 in 2009. The Drug Enforcement Administration reported that the cost of methamphetamine increased from \$100–\$200 per gram in May 2009 to \$150–\$250 in May 2010.*

## INTRODUCTION

### Area Description

According to the U.S. Census Bureau 2006–2008 American Community Survey, the city of Boston has a population of 619,086. A larger metropolitan Boston region (Community Health Network Area [CHNA] 19) consisting of the cities of Boston, Brookline, Chelsea, Revere, and Winthrop has a population of 787,482 and the seven-county Boston Metropolitan Statistical Area (MSA) has a population of 4,494,144.

The racial composition for the city of Boston includes 51 percent White non-Hispanic, 22 percent Black non-Hispanic, 16 percent Hispanic/Latino, and 8 percent Asian. The racial composition for the Boston MSA includes 78 percent White non-Hispanic, 6 percent Black non-Hispanic, 8 percent Hispanic/Latino, and 6 percent Asian.

Several characteristics influence drug trends in Boston and throughout Massachusetts:

- Massachusetts is contiguous with five neighboring States (Rhode Island, Connecticut, New York, Vermont, and New Hampshire) that are linked by a network of State and interstate highways.
- Interstate 95 connects Boston to all major cities on the east coast, particularly New York.
- A public transportation system provides easy access to communities in eastern Massachusetts.
- There is a large population of college students in both the greater Boston area and western Massachusetts.

- There are several seaport cities in the State with major fishing industries and harbor areas.
- Logan International Airport and several regional airports are located within a 1-hour drive of Boston.
- Boston has a high number of homeless individuals seeking shelter.

## DATA SOURCES

This report presents data from a number of different sources with varied Boston area geographical parameters. For this reason, caution is advised when attempting to generalize across data sources. A description of the relevant boundary parameters is included with each data source description. For simplicity, these are all referred to as “Boston” throughout the text of the report. In addition, there are many systemic factors specific to each data source that do not directly relate to the level of abuse in the larger population, but may contribute to changes seen in the data. For example, a 2009 change in Massachusetts’ marijuana possession law resulted in the decriminalization of possession of up to one ounce of marijuana. As a result, a substantial reduction in Class D (mainly marijuana) drug arrests and analyzed marijuana drug laboratory samples was observed in 2009 (compared with 2008). To what extent such systemic factors influence totals and subpopulation differences observed within a data source is difficult to determine and often unknown. For analysis of drug arrests and laboratory samples, adjusted proportions of nonmarijuana totals are utilized in order to allow for drug trending. Conclusions drawn from the data sources within this text are subject to this and other types of limitations. At best, these data present a partial picture of Boston’s collective drug abuse experience. Overall understanding of drug use and abuse patterns should improve as current data sources improve and new sources develop.

Data sources used in this report include the following:

- **State-funded substance abuse treatment admissions data** for a Boston region



comprising the cities of Boston, Brookline, Chelsea, Revere, and Winthrop (CHNA 19), for calendar years (CYs) 2000 through 2009 were provided by the Massachusetts Department of Public Health (MDPH), Bureau of Substance Abuse Services. All treatment data refer to treatment admissions of clients who may or may not have been admitted more than once within a calendar year.

- **Information on drug mentions in helpline calls** for the Boston CHNA 19 for CYs 2000 through 2009 was provided by the Massachusetts Substance Abuse Information and Education Helpline.
- **Drug arrest data** for the city of Boston for 2000 through 2009 were provided by the Boston Police Department, Drug Control Unit and Office of Research and Evaluation. For arrests data only, Black and White racial designations include those who identify themselves as Hispanic. Also, adjusted (non-Class D) arrest proportions were utilized to assist trending of non-Class D (mainly marijuana) arrests by accounting for a major 2009 change in Massachusetts' marijuana possession law.
- **Analysis of seized drug samples** for the seven-county Boston MSA, including Essex, Middlesex, Norfolk, Plymouth, and Suffolk Counties in Massachusetts, and Rockingham and Strafford Counties in New Hampshire, for 2008 and 2009 was provided by the National Forensic Information System (NFLIS) Data Query System (DQS), Drug Enforcement Agency (DEA). Adjusted (nonmarijuana) sample proportions were utilized to assist trending of nonmarijuana items by accounting for a major 2009 change in Massachusetts' marijuana possession law.
- **Drug price, purity, and availability data and information** for New England were provided by the Drug Enforcement Administration (DEA), New England Field Division Intelligence Group, May 2010.
- **High school student drug use data** for Boston public high school students were provided

by the Youth Risk Behavior Survey (YRBS) 2009, Boston Public School Department, and the Centers for Disease Control (CDC).

## DRUG ABUSE PATTERNS AND TRENDS

### Cocaine/Crack

Cocaine (including crack) was one of the most heavily abused drugs in Boston in 2009. Cocaine/crack indicators for 2009 were mostly decreasing at high levels. In 2009, 1,343 treatment admissions (7 percent of all admissions) reported cocaine/crack as the primary drug, and there were an additional 3,936 (20 percent of all admissions) admissions with cocaine/crack reported as a secondary drug (exhibit 1). Of the cocaine/crack primary admissions, 58 percent identified crack and 42 percent identified powder cocaine as the primary drug.

The proportion of treatment admissions reporting cocaine/crack as the primary drug decreased slightly from 8 percent in 2008 to 7 percent in 2009 (exhibit 1). This slight percentage decrease was driven by a 27-percent decrease in the number of crack primary admissions. The proportion of admissions reporting cocaine/crack as a secondary drug decreased from 23 percent in 2008 to 20 percent in 2009 (exhibit 1). Of the 1,190 cocaine/crack primary drug admissions reporting a secondary drug in 2009, 42 percent reported alcohol, 16 percent reported heroin, and 13 percent reported marijuana as the secondary drug.

The gender distribution of cocaine/crack primary drug treatment admissions in 2009 (60 percent male, 39 percent female, and less than 1 percent transgender) reflected a slight increase in the proportion of males (up from 56 percent in 2008) and a decrease in the proportion of females (down from 44 percent in 2008) (exhibit 2a). In 2009, 10 percent of cocaine/crack treatment admissions were younger than 26, 22 percent were age 26–34, and 68 percent were 35 and older. The age distribution changed very little from 2005 to 2009. During the 5 previous years, from 2000 to 2004, there was a higher proportion of the 26–34 age group and a

lower proportion of the 35 and older age group (exhibit 2a). The 2009 racial/ethnic group distribution for cocaine/crack admissions (41 percent Black, 37 percent White, and 16 percent Latino) revealed a shift toward higher Latino proportions (up from 10 percent in 2002) and continued lower Black proportions (down from 63 percent in 2000) (exhibit 2a).

Cocaine or crack was indicated in 457 calls (15 percent) to the substance abuse helpline in 2009 (exhibit 3). The proportion of cocaine/crack helpline calls in 2009 decreased from 18 percent in 2008 to the lowest level in 10 years of reported data.

There were 1,575 Class B (mainly cocaine and crack) drug arrests in 2009 (exhibit 4). Class B arrests accounted for the largest proportion of drug arrests (49 percent) in the city of Boston in 2009. The adjusted proportion of Class B arrests among all non-Class D (mainly marijuana) drug arrests remained stable from 2008 to 2009.

The gender distribution of Class B arrestees in 2009 (87 percent male and 13 percent female) was similar to the previous 7 years, 2001 to 2008 (arrestee demographic data not shown). The proportion of Class B arrestees age 40 and older increased from 24 percent in 2005 to 34 percent in 2008 before decreasing to 32 percent in 2009. Class B arrestees age 20–24 increased from 15 percent in 2008 to 19 percent in 2009. The racial/ethnic distribution of Class B arrestees was similar from 2007 to 2009: 62–63 percent were Black (including Hispanic); 36–37 percent were White (including Hispanic); and 20–21 percent were Hispanic.

In 2009, 5,008 seized samples seized and identified as cocaine/crack from drug arrests were reported by NFLIS. The adjusted proportion of cocaine/crack samples among all nonmarijuana drug samples analyzed decreased from 40 percent in 2008 to 38 percent in 2009 (exhibit 5).

The DEA reported that retail “street-level” cocaine cost between \$50 and \$100 per gram (exhibit 6) with variable levels of purity in Boston. A rock of crack cost \$10–\$80. Cocaine was considered available throughout New England. According to the YRBS, 3 percent of Boston public high

school students reported having used cocaine during their lifetime.

## Heroin

Heroin remained one of the most heavily abused drugs in Boston in 2009. Overall, heroin indicators were mixed at high levels with some increasing and others stable. In 2009, 10,025 treatment admissions (51 percent of all admissions) reported heroin as the primary drug, and there were an additional 701 admissions (4 percent of all admissions) with heroin reported as a secondary drug (exhibit 1). A comparison of 2008 to previous years shows that the proportion of admissions with heroin reported as the primary drug fluctuated between 47 and 51 percent from 2003, but had increased from 38 percent in 2000 (exhibit 1). The proportion of admissions with heroin reported as a secondary drug remained stable, between 3 and 5 percent from 2000 to 2009 (exhibit 1). Of 9,280 heroin primary drug admissions citing a secondary drug, 22 percent reported cocaine/crack and 15 percent reported alcohol as the secondary drug.

Exhibit 2b shows demographic characteristics of heroin primary treatment admissions in Boston. The 2009 gender distribution of heroin/other opiates primary drug treatment admissions (71 percent male and 28 percent female) reflects a slight decrease in male admissions and slight increase in female admissions compared with the previous 6 years, 2003 to 2008. The proportion of younger client admissions (age 18–25) increased from 21 percent in 2008 to 24 percent in 2009. The racial distribution for heroin admissions has shifted over time towards increasing percentages of White client admissions (up from 50 percent in 2000 and 63 percent in 2008 to 67 percent in 2009), decreasing percentages of Black client admissions (down from 22 percent in 2000 and 13 percent in 2008 to 11 percent in 2009), and decreasing Latino client admissions (down from 23 percent in 2000 to 17 percent in 2009) (exhibit 2b). In 2009, 84 percent ( $n=8,446$ ) of heroin primary admissions reported injecting as the preferred route of administration, up from 67 percent in 2000 and 80 percent in 2008.

From 2000 to 2009, the number and proportion of heroin primary admissions that reported sniffing heroin as the primary route decreased by more than 50 percent.

In 2009, heroin was indicated in 1,022 calls (34 percent of the total) to the helpline (exhibit 3). The proportion of heroin helpline calls remained stable at 34 percent from 2008 to 2009. There were 716 Class A (mainly heroin and other opiates) drug arrests in 2009 (exhibit 4). Class A arrests accounted for the second largest proportion of drug arrests (22 percent) in the city of Boston in 2009. The adjusted proportion of Class A arrests among all non-Class D (mainly marijuana) drug arrests remained stable from 2008 to 2009.

The gender distribution of Class A arrestees has remained fairly stable from 2000 to 2009 with the proportion of male arrestees ranging from 82 to 87 percent (arrestee demographic data not shown). The proportion of White (including Hispanic) Class A arrestees decreased from 69 percent in 2008 to 64 percent in 2009. In 2009, 2,828 samples seized and identified as heroin (16 percent of all drug samples) were reported by NFLIS.

The adjusted proportion of heroin samples among all nonmarijuana drug samples analyzed increased from 17 percent in 2008 to 22 percent in 2009 (exhibit 5). The most recent DEA data indicated that in Boston street heroin cost \$5–\$80 per bag and \$40–\$120 per gram (exhibit 6). The DEA reported that heroin “remained readily available throughout New England, with low to mid-level purity levels encountered at the street level.” According to the YRBS, 2 percent of Boston public high school students reported having used heroin during their lifetime.

### **Narcotic Analgesics**

Narcotic analgesic abuse indicators appeared to be increasing at moderate levels. In 2009, 859 treatment admissions (4 percent of all admissions) reported other opiates/synthetics as primary drugs, and 989 additional admissions reported other opiates/synthetics as secondary drugs (exhibit 1). The proportion of other opiates/synthetics primary

drug admissions fluctuated between 3 and 4 percent from 2002 to 2009 (exhibit 1). The proportion of admissions with reported other opiates/synthetics as secondary drugs increased from 1 percent in 2007 to 2 percent in 2008 to 5 percent in 2009 (exhibit 1). Of the 750 other opiates/synthetics primary drug admissions citing a secondary drug, 19 percent reported heroin, 15 percent reported alcohol, and 13 percent reported cocaine as the secondary drug.

The proportion of younger client admissions (age 18–25) increased from 22 percent in 2000 to 44 percent in 2002, but then steadily decreased to 26 percent by 2009. The proportion of older client admissions (35 and older) increased from 29 percent in 2003 to 44 percent by 2008 and remained at approximately the same level in 2009 (data not shown). In 2009, female other opiates/synthetics client admissions reached their highest level (39 percent) in 10 years of reported data. The racial composition of other opiates/synthetics client admissions changed little from 2000 to 2009. In 2009, 86 percent were White, 5 percent were Black, and 5 percent were Latino (data not shown).

In 2009, there were 591 calls (20 percent of the total) to the helpline during which narcotic analgesics (heroin not included) were mentioned (exhibit 3). The proportion of narcotic analgesic calls increased from 17 percent in 2008. OxyContin® and other drugs containing oxycodone were mentioned in 254 calls in 2009. The proportion of OxyContin®/oxycodone calls decreased from 12 percent in 2003 and 2004 to 8 percent in 2008 and 2009.

In 2009, 1,149 samples seized and identified as oxycodone (7 percent of all drug samples) were reported by NFLIS. The adjusted proportion of oxycodone samples among all nonmarijuana drug samples analyzed increased from 8 percent in 2008 to 9 percent in 2009 (exhibit 5). NFLIS also reported substantial numbers of buprenorphine ( $n=419$ ), hydrocodone ( $n=171$ ), methadone ( $n=96$ ), and morphine ( $n=58$ ) samples in 2009.

The DEA reported that OxyContin® was widely available throughout New England, and

typically cost between \$0.45 and \$1.25 per milligram. Generic oxycodone sold for as little as \$5 per dosage unit (exhibit 6).

### **Benzodiazepines**

As a group, benzodiazepines continued to show moderate to high levels of abuse. There were 154 calls (5 percent of the total) to the helpline during which benzodiazepines—including clonazepam (Klonopin®, 30 calls), alprazolam (Xanax®, 17 calls), lorazepam (Ativan®, 6 calls), diazepam (Valium®, 3 calls), triazolam (Halcion®, 6 calls), chlordiazepoxide (Librium®, 1 calls), flunitrazepam (Rohypnol®, 1), and 97 unspecified benzodiazepines—were identified in 2009 (exhibit 3). From 2000 to 2009, the number of helpline calls with benzodiazepine mentions fluctuated between 130 and 188 per year. Clonazepam accounted for 3 percent ( $n=461$ ) and alprazolam accounted for 2 percent ( $n=257$ ) of the laboratory samples analyzed by NFLIS for 2009 (exhibit 5). Arrest data were unavailable for benzodiazepines.

### **Methamphetamine/ Amphetamines**

Methamphetamine indicators remained stable (if not decreasing) at low levels of abuse. There were 117 methamphetamine primary treatment admissions in 2008, but only 35 in 2009.

There were 22 methamphetamine calls to the helpline in 2008 and 12 calls in 2009 (exhibit 3). The number of methamphetamine calls was similar to the 3 previous years. There were 69 methamphetamine laboratory samples analyzed in 2008 and 66 in 2009 (exhibit 5). There were 115 unspecified amphetamine laboratory samples reported by NFLIS in 2009 and 105 samples in 2008.

The DEA reported that the cost of methamphetamine increased from between \$100–\$200 per gram reported in May 2009 to \$150–\$250 per gram reported in May 2010 (exhibit 6). Availability of methamphetamine was considered “limited,” and average purity was not available. According to the YRBS, 2 percent of Boston public high school students reported having used methamphetamine during their lifetime.

### **Marijuana**

In 2009, Massachusetts adopted a new marijuana possession law that decriminalized possession of small amounts of marijuana (up to one ounce). As a result, the number of marijuana arrests and drug laboratory samples for Boston decreased substantially from 2008 to 2009. Other indicators for marijuana (i.e., treatment admissions and helpline calls) were fairly stable at moderate levels of use/abuse.

In 2009, 863 treatment admissions (4 percent of all admissions) reported marijuana as the primary drug, and an additional 1,300 admissions (7 percent of the total) reported marijuana as a secondary drug (exhibit 1). The proportion of all treatment client admissions that reported marijuana as their primary drug remained relatively stable from 2000, accounting for 3 to 4 percent of total admissions, but the proportion reporting marijuana as their secondary drug increased from 5 percent in 2008 to 7 percent in 2009 (exhibit 1). Of the 664 marijuana primary drug admissions citing a secondary drug in 2009, 71 percent reported alcohol and 13 percent reported cocaine/crack as their secondary drug (data not shown).

Exhibit 2c shows demographic characteristics of marijuana primary treatment admissions in Boston. From 2008 to 2009, the proportion of male admissions increased from 71 to 82 percent, and the proportion of female admissions decreased from 29 to 18 percent. The age distribution of marijuana primary drug admissions varied little during the 4-year period from 2006 to 2009, but the proportion of client admissions younger than 26 decreased from 62 percent in 2000 to 49 percent in 2009. The proportion of client admissions age 35 and older increased from 13 percent in 2001 to 24 percent in 2006 and 2009. From 2008 to 2009 the racial distribution shifted towards an increasing proportion of Black client admissions (39 percent in 2008 to 48 percent in 2009) and a decreasing proportion of White client admissions (29 percent in 2008 to 21 percent in 2009) (exhibit 2c).

In 2009, marijuana was mentioned in 107 calls (4 percent) to the helpline (exhibit 3). The proportion of helpline calls with marijuana mentions

remained stable at 4 percent from 2007 to 2009. There were 677 Class D (mainly marijuana) drug arrests in 2009 (exhibit 4). Primarily as a result of the marijuana possession law change, the proportion of Class D arrests among all drug arrests decreased significantly from 35 percent in 2008 to 21 percent in 2009. The gender distribution of Class D arrestees in 2008 (94 percent male and 6 percent female) was similar to the previous 9 years (arrestee demographic data not shown). The proportion of Black (including Hispanic) Class D arrestees remained fairly stable, ranging from 68 to 70 percent from 2004 to 2009. Similarly, the proportion of White (including Hispanic) Class D arrestees remained fairly stable, ranging from 29 to 31 percent from 2004 to 2009.

In 2009, 4,249 drug samples were identified as marijuana (24 percent of all drug samples) and reported by NFLIS. Due mainly to the marijuana possession law change in 2009, the proportion of marijuana samples among all drug samples analyzed decreased significantly from 43 percent in 2008 to 24 percent in 2009 (exhibit 5). The DEA reported that marijuana remained readily available throughout the New England States and sold for \$90–\$350 per ounce. A marijuana cigarette, or “joint,” typically cost \$5 (exhibit 6). According to the YRBS, 38 percent of Boston public high school students reported having used marijuana during their lifetime, and 22 percent reported using marijuana during the past month.

### Club Drugs

*MDMA* (3,4-methylenedioxymethamphetamine) or ecstasy indicators showed low levels of abuse. There were only six calls to the helpline during which MDMA was self-identified as a substance of abuse (less than 1 percent of all mentions) in 2009. The number of MDMA helpline calls peaked at 39 in 2001 and has declined since (exhibit 3).

There were 124 MDMA drug laboratory submissions in 2009 and 106 samples in 2008 (exhibit 5).

The DEA reported that one MDMA tablet cost between \$15 and \$40 retail, with lower prices when purchasing in bulk (more than 50 dosage units) (exhibit 6). Distributed at “legitimate nightclubs and rave parties,” the DEA reported that MDMA remained widely available and was “primarily distributed and abused by teenagers and young adults.” According to the YRBS, 3 percent of Boston public high school students reported having used MDMA during their lifetime.

*Ketamine.* The DEA reported that a vial of ketamine cost \$55 to \$120 and \$40 per dosage unit in New England (exhibit 6).

### PCP

The DEA reported that PCP (phencyclidine) cost between \$10 and \$20 per bag (1–2 grams) (exhibit 6).

### ACKNOWLEDGMENTS

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**Exhibit 1. Percentage of Admissions to State-Funded Substance Abuse Treatment Programs<sup>1</sup>, by Primary and Secondary Drug, in Greater Boston: 2000–2009**

Treatment Admissions	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
<b>Primary Drug</b>										
Alcohol	45%	42%	38%	36%	35%	34%	36%	34%	34%	32%
Heroin/Other Opiates	40%	45%	48%	51%	53%	52%	51%	54%	52%	55%
Heroin	38%	42%	45%	47%	49%	48%	47%	51%	49%	51%
Other Opiates	1%	3%	3%	3%	4%	4%	4%	3%	4%	4%
Cocaine and/or Crack	10%	9%	8%	8%	7%	9%	8%	7%	8%	7%
Powder Cocaine	2%	2%	2%	1%	1%	2%	1%	1%	2%	3%
Crack	8%	7%	7%	7%	6%	7%	7%	6%	6%	4%
Marijuana	4%	4%	4%	4%	4%	4%	3%	3%	4%	4%
Other <sup>2</sup>	1%	1%	1%	1%	1%	2%	2%	2%	2%	2%
<b>Secondary Drug</b>										
Alcohol	18%	17%	18%	17%	15%	14%	14%	13%	13%	13%
Heroin	4%	5%	4%	4%	3%	3%	3%	3%	3%	4%
Other Opiates	0.2%	0.2%	0.2%	0.3%	0.2%	0.2%	0.2%	0.7%	2%	5%
Cocaine or Crack	22%	21%	20%	20%	20%	21%	24%	22%	23%	20%
Marijuana	8%	8%	7%	7%	7%	6%	6%	6%	5%	7%
Other <sup>2</sup>	6%	7%	8%	10%	10%	10%	10%	10%	8%	8%
None	42%	42%	43%	42%	45%	45%	44%	47%	48%	48%
<b>Total Admissions (N)</b>	<b>25,332</b>	<b>25,284</b>	<b>25,750</b>	<b>21,463</b>	<b>20,578</b>	<b>20,853</b>	<b>20,936</b>	<b>21,541</b>	<b>18,256</b>	<b>20,340</b>
<b>Total Admissions (N) With Identified Primary Drug</b>	<b>25,322</b>	<b>25,272</b>	<b>25,737</b>	<b>21,447</b>	<b>20,563</b>	<b>20,839</b>	<b>20,912</b>	<b>21,420</b>	<b>17,691</b>	<b>19,638</b>

<sup>1</sup>Excluding prisoners and out-of-State admissions. Percentages are based on admissions with known primary drug (subset of total number of admissions).

<sup>2</sup>Other includes barbiturates, other sedatives, tranquilizers, hallucinogens, amphetamines, "over-the-counter," and other drugs.

SOURCE: Massachusetts Department of Public Health, Bureau of Substance Abuse Services; prepared by the Boston Public Health Commission, Research Office

**Exhibit 2a. Demographic Characteristics of Client Admissions<sup>1</sup> to State-Funded Substance Abuse Treatment Programs with a Primary Problem with Cocaine/Crack, by Percentage, in Greater Boston: 2000–2009**

Characteristic	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
<b>Gender</b>										
Male	61%	64%	60%	55%	60%	63%	60%	58%	56%	60%
Female	39%	36%	40%	45%	40%	37%	40%	42%	44%	39%
<b>Race</b>										
White	25%	25%	26%	27%	29%	30%	33%	36%	38%	37%
Black	63%	59%	60%	58%	54%	52%	48%	44%	44%	41%
Latino	10%	12%	10%	11%	15%	15%	15%	13%	NA <sup>2</sup>	16%
Other	2%	3%	3%	4%	3%	3%	4%	7%	NA	7%
<b>Age at Admission</b>										
17 and younger	<1%	<1%	<1%	<1%	<1%	<1%	1%	<1%	1%	<1%
18–25	8%	8%	7%	7%	6%	9%	10%	11%	9%	10%
26–34	36%	32%	31%	29%	26%	21%	22%	22%	21%	22%
35 and older	57%	60%	62%	64%	68%	70%	68%	66%	69%	68%
<b>Total (N)</b>	<b>2,553</b>	<b>2,182</b>	<b>2,167</b>	<b>1,704</b>	<b>1,477</b>	<b>1,807</b>	<b>1,715</b>	<b>1,675</b>	<b>1,440</b>	<b>1,343</b>

<sup>1</sup>Excludes prisoners and out-of-State admissions.

<sup>2</sup>NA=Data unavailable.

SOURCE: Massachusetts Department of Public Health, Bureau of Substance Abuse Services; prepared by the Boston Public Health Commission, Research Office

**Exhibit 2b. Demographic Characteristics of Client Admissions<sup>1</sup> to State-Funded Substance Abuse Treatment Programs with a Primary Problem with Heroin, by Percentage, in Greater Boston: 2000–2009**

Characteristic	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
<b>Gender</b>										
Male	75%	77%	76%	73%	73%	74%	74%	74%	73%	71%
Female	25%	23%	24%	27%	27%	26%	26%	27%	27%	28%
<b>Race</b>										
White	50%	48%	52%	55%	61%	62%	65%	67%	63%	67%
Black	22%	20%	20%	17%	15%	14%	13%	12%	13%	11%
Latino	23%	28%	23%	24%	21%	20%	18%	18%	NA <sup>2</sup>	17%
Other	5%	5%	5%	4%	4%	4%	5%	4%	NA	5%
<b>Age at Admission</b>										
17 and younger	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%
18–25	15%	17%	17%	18%	20%	24%	23%	24%	21%	24%
26–34	34%	33%	32%	30%	31%	30%	33%	34%	32%	33%
35 and older	52%	50%	51%	52%	48%	46%	44%	42%	46%	43%
<b>Total (N)</b>	<b>9,713</b>	<b>10,626</b>	<b>11,671</b>	<b>10,178</b>	<b>10,056</b>	<b>10,015</b>	<b>9,886</b>	<b>10,802</b>	<b>8,641</b>	<b>10,025</b>

<sup>1</sup>Excludes prisoners and out-of-State admissions.

<sup>2</sup>NA=Data unavailable.

SOURCE: Massachusetts Department of Public Health, Bureau of Substance Abuse Services; prepared by the Boston Public Health Commission, Research Office

**Exhibit 2c. Demographic Characteristics of Client Admissions<sup>1</sup> to State-Funded Substance Abuse Treatment Programs with a Primary Problem with Marijuana, by Percentage, in Greater Boston: 2000–2009**

Characteristic	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
<b>Gender</b>										
Male	76%	78%	76%	73%	70%	76%	72%	70%	71%	82%
Female	24%	22%	23%	27%	30%	24%	28%	30%	29%	18%
<b>Race</b>										
White	28%	29%	26%	29%	27%	28%	30%	28%	29%	21%
Black	48%	48%	50%	45%	47%	47%	41%	44%	39%	48%
Latino	20%	19%	21%	21%	21%	21%	23%	21%	NA <sup>2</sup>	25%
Other	3%	3%	3%	4%	4%	4%	6%	7%	NA	5%
<b>Age at Admission</b>										
17 and Younger	17%	21%	16%	16%	6%	14%	7%	7%	9%	9%
18–25	45%	46%	48%	46%	46%	42%	44%	47%	43%	40%
26–34	25%	20%	21%	21%	26%	22%	25%	24%	25%	28%
35 and Older	13%	13%	14%	17%	21%	22%	24%	22%	23%	24%
<b>Total (N)</b>	<b>1,122</b>	<b>1,074</b>	<b>1,055</b>	<b>959</b>	<b>783</b>	<b>762</b>	<b>727</b>	<b>701</b>	<b>641</b>	<b>863</b>

<sup>1</sup>Excludes prisoners and out-of-State admissions.

<sup>2</sup>NA=Data unavailable.

SOURCE: Massachusetts Department of Public Health, Bureau of Substance Abuse Services; prepared by the Boston Public Health Commission, Research Office



**Exhibit 3. Number and Percentage of Substance-Related Helpline Calls, by Substance, Greater Boston: 2000–2009**

Drug	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
	Number (%)	Number (%)	Number (%)	Number (%)	Number (%)	Number (%)	Number (%)	Number (%)	Number (%)	Number (%)
Alcohol only	2,051 (38.9)	2,087 (35.4)	1,735 (33.8)	1,411 (28.9)	1,472 (30.9)	1,298 (32.4)	1,240 (32.5)	1,033 (37.9)	1,068 (33.6)	1,035 (34.4)
Heroin	1,729 (32.8)	2,045 (34.7)	1,727 (33.6)	1,964 (40.2)	1,743 (36.6)	1,365 (34.1)	1,264 (33.2)	839 (30.8)	1,073 (33.8)	1,022 (33.9)
Cocaine/Crack	1,011 (19.2)	1,115 (18.9)	986 (19.2)	891 (18.2)	889 (18.6)	820 (20.5)	829 (21.7)	486 (17.8)	558 (17.6)	457 (15.2)
Marijuana	279 (5.3)	332 (5.6)	296 (5.8)	212 (4.3)	214 (4.5)	185 (4.6)	198 (5.2)	120 (4.4)	127 (4.0)	107 (4.0)
Narcotic Analgesics <sup>1</sup>	327 (6.2)	724 (12.3)	758 (14.8)	760 (15.6)	859 (18.0)	676 (16.9)	655 (17.2)	451 (16.5)	536 (16.9)	591 (19.6)
Benzodiazepines <sup>2</sup>	146 (2.8)	188 (3.2)	173 (3.4)	165 (3.4)	180 (3.8)	137 (3.4)	174 (4.6)	130 (4.8)	162 (5.1)	154 (5.1)
Methamphetamine	9 (<1)	7 (<1)	8 (<1)	16 (<1)	11 (<1)	22 (<1)	24 (<1)	18 (<1)	22 (<1)	12 (<1)
MDMA	34 (<1)	39 (<1)	36 (<1)	21 (<1)	16 (<1)	15 (<1)	18 (<1)	8 (<1)	5 (<1)	6 (<1)
Hallucinogens <sup>3</sup>	22 (<1)	13 (<1)	10 (<1)	9 (<1)	5 (<1)	6 (<1)	5 (<1)	0 (<1)	3 (<1)	2 (<1)
Inhalants <sup>4</sup>	85 (2.0)	36 (1.6)	22 (<1)	20 (<1)	16 (<1)	13 (<1)	12 (<1)	9 (<1)	22 (<1)	9 (<1)
<b>Total Number of Calls</b>	<b>5,279</b>	<b>5,897</b>	<b>5,134</b>	<b>4,889</b>	<b>4,767</b>	<b>4,006</b>	<b>3,813</b>	<b>2,727</b>	<b>3,178</b>	<b>3,013</b>

<sup>1</sup>Narcotic Analgesics include codeine, methadone, morphine, oxycodone (including OxyContin®), Percocet®, Roxicet®, Vicodin®, Suboxone®, and other opioids.

<sup>2</sup>Benzodiazepines include Ativan®, Halcion®, Klonopin®, Librium®, Rohypnol®, Valium®, and Xanax®.

<sup>3</sup>Hallucinogens include LSD, PCP, psilocybin, and mescaline.

<sup>4</sup>Inhalants include acetone, aerosols, glue, markers, paint, and other inhalants.

SOURCE: Massachusetts Substance Abuse Information and Education Helpline; data analysis by the Boston Public Health Commission Research Office

Exhibit 4. Number and Percentage of Police Department Arrests by Drug Class<sup>1</sup>, by Number and Percent, Boston: 2000–2009

Drug Class	2000		2001		2002		2003		2004		2005		2006		2007		2008		2009	
	Number (%)	Adj. % <sup>2</sup>	Number (%)	Adj. %	Number (%)	Adj. %	Number (%)	Adj. %	Number (%)	Adj. %	Number (%)	Adj. %	Number (%)	Adj. %	Number (%)	Adj. %	Number (%)	Adj. %	Number (%)	Adj. %
A (Mostly Heroin)	1,022 (27.1) 38%		905 (26.4) 37%		947 (22.5) 33%		939 (22.5) 33%		791 (20.8) 31%		752 (17.4) 28%		789 (16.6) 26%		732 (15.3) 24%		774 (17.9) 28%		716 (22.4) 28%	
B (Mostly Cocaine)	1,532 (40.6) 57%		1,428 (41.7) 58%		1,762 (41.9) 62%		1,736 (41.6) 62%		1,650 (43.3) 64%		1,821 (42.2) 67%		2,033 (42.9) 68%		2,178 (45.6) 70%		1,812 (41.9) 65%		1,575 (49.4) 63%	
D (Mostly Marijuana)	1,093 (29.0) N/A		982 (28.7) N/A		1,375 (32.7) N/A		1,366 (32.7) N/A		1,247 (32.8) N/A		1,599 (37.1) N/A		1,757 (37.0) N/A		1,677 (35.1) N/A		1,512 (35.0) N/A		677 (21.2) N/A	
Other	123 (3.3) 5%		111 (3.2) 5%		125 (3.0) 4%		133 (3.2) 5%		119 (3.1) 5%		141 (3.3) 5%		165 (3.5) 6%		185 (3.9) 6%		223 (5.2) 8%		222 (7.0) 9%	
Total Drug Arrests	3,770		3,426		4,209		4,174		3,807		4,313		4,744		4,772		4,321		3,190	
Total Non-Class D Drug Arrests	2,677		2,444		2,834		2,808		2,560		2,714		2,987		3,095		2,809		2,513	
Total Arrests	22,216		20,470		21,025		20,686		19,577		23,035		23,134		22,377		21,811		20,017	
Drug Arrest Percentage of Total Arrests	(17.0)		(16.7)		(20.0)		(20.2)		(19.4)		(18.7)		(20.5)		(21.3)		(19.8)		(15.9)	

<sup>1</sup>Includes all arrests made by the Boston Police Department (i.e., arrests for possession, distribution, manufacturing, trafficking, possession of hypodermic needles, conspiracy to violate false substance acts, and forging prescriptions).

<sup>2</sup>Adj. % are adjusted percentages based on Total non-Class D Drug Arrests. These percentages were derived to support trending with adjustment to exclude Class D (mainly marijuana) arrests due to impact of 2009 change in Massachusetts' marijuana possession law.

SOURCE: Boston Police Department, Office of Planning and Research; prepared by the Boston Public Health Commission, Research Office

**Exhibit 5. Number and Percentage of Seized Drug Samples from Drug Arrests, by Substance, Boston Area: 2008–2009**

Drug	2008	2009
	Number (%) Adj. % <sup>1</sup>	Number (%) Adj. % <sup>1</sup>
Marijuana	8,667 (43.2) N/A	4,249 (24.4) N/A
Cocaine/ Crack	4,564 (22.8) 40%	5,008 (28.8) 38%
Heroin	1,964 (9.8) 17%	2,828 (16.3) 22%
Oxycodone	852 (4.3) 8%	1,149 (6.6) 9%
Clonazepam	370 (1.8) 3%	461 (2.7) 4%
Buprenorphine	403 (2.0) 4%	419 (2.4) 3%
Alprazolam	224 (1.1) 2%	257 (1.5) 2%
Hydrocodone	153 (0.8) 1%	171 (1.0) 1%
MDMA	106 (0.5) <1%	124 (0.7) <1%
Amphetamine	105 (0.5) <1%	115 (0.7) <1%
Methamphetamine	69 (0.3) <1%	66 (0.4) <1%
<b>Total</b>	<b>20,046</b>	<b>17,394</b>
<b>Nonmarijuana Total</b>	<b>11,379</b>	<b>13,145</b>

<sup>1</sup>Adjusted percentages based on total number of nonmarijuana samples. These percentages were derived to assist trending with consideration for impact of 2009 change in Massachusetts' marijuana possession law.  
SOURCE: NFLIS, DEA

**Exhibit 6. Drug Street Price and Availability, in New England: As of May 2010**

<b>Drug</b>	<b>Price</b>	<b>Availability</b>
Heroin	\$40–\$120 per gram \$65–\$300 per bundle \$5–\$80 per bag	Readily Available
Powder Cocaine	\$50–\$100 per gram retail	Available
Crack Cocaine	\$10–\$80 per rock	Available
Marijuana	\$5 per joint \$90–\$350 per ounce	Readily Available
Methamphetamine	\$150–\$250 per gram	Limited
MDMA (Ecstasy)	\$15–\$40 per tablet	Widely Available
OxyContin®	\$0.45–\$1.25 per milligram \$5–\$12 per dosage unit (generic)	Widely Available
PCP (Phencyclidine)	\$10–\$20 per bag (1–2 grams)	Available
Ketamine	\$55–\$120 per vial	Available
GHB (Gamma Hydroxybutyrate)	\$150 per ounce	Available
Psilocybin (Mushrooms)	\$10 per dosage unit	Limited

SOURCE: New England Field Division, DEA, as of May 2010; prepared by the Boston Public Health Commission Research Office

# Patterns and Trends of Drug Abuse in Chicago: 2009

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## ABSTRACT

*Epidemiological indicators suggest that heroin, cocaine, and marijuana continue to be the most commonly used illicit substances in Chicago. Heroin is the major opiate abused in this region, and many heroin-use indicators have been increasing or maintaining already elevated levels since the mid-1990s. Drug treatment services for heroin use, which surpassed those for cocaine in fiscal year (FY) 2001, peaked in FY 2005 at 33,662 episodes and then declined and leveled at about 27,000 episodes in both FY 2006 and FY 2007. A further decline in 2009 was attributed to budget reductions. Heroin purity has increased since 2006, and the price per milligram pure decreased. Cocaine fell to third behind alcohol among reasons for entering publicly funded treatment programs in FY 2007; the decline may reflect budget cuts. After 3 years of small increases in treatment episodes for cocaine, admissions dropped slightly in FY 2007 to 16,938. According to preliminary unweighted data from the Drug Abuse Warning Network (DAWN) Live!, cocaine, heroin, and marijuana were the illicit drugs most often reported in emergency departments during 2008. These were also the drugs most frequently seized by law enforcement in FY 2009, accounting for 94 percent of all items seized and identified. According to the 2009 Youth Risk Behavior Survey, marijuana use by 9th to 12th grade students in Chicago has continued its decline since 2001, but there were statistically significant increases in cocaine and heroin*

*use. In addition, inhalants were at the highest level since 1997. Methamphetamine indicators suggested declining levels of use in Chicago and among African-Americans. Whereas in previous reports smoking appeared to be the primary route of methamphetamine administration, recent data indicated that injecting has become more common. Methamphetamine use appeared to remain concentrated among north side men who have sex with men. Beyond Chicago, methamphetamine use was most common in downstate and western Illinois. MDMA (3,4-methylenedioxy-methamphetamine) indicators suggested low levels of use but several indicated increases, including among 9th to 12th grade students. Ethnographic and survey reports suggested MDMA was popular among young, low-income African-Americans, and the drug was available in street drug markets. LSD (lysergic acid diethylamide) and PCP (phencyclidine) indicators continued to show levels of use below the national average. African-American injection drug users were an aging cohort, while among Whites, new cohorts of young heroin injectors continued to emerge.*

## INTRODUCTION

This report is produced for the Community Epidemiology Work Group of the National Institute on Drug Abuse (NIDA). As part of this epidemiological surveillance network, researchers from 22 U.S. areas monitor trends in drug abuse using the most recent data from multiple sources.

## Area Description

Because of its geographic location and multifaceted transportation infrastructure, Chicago is a major hub for the distribution of illegal drugs throughout the Midwest. Located in northeastern Illinois, Chicago stretches for 25 miles along the shoreline of the southern tip of Lake Michigan. The 2000 U.S. census estimated the population of Chicago at 2.9 million and Cook County (which includes Chicago) at 5.4 million. In June 2003, the U.S. Office of Management and Budget revised definitions for the Nation's Metropolitan Statistical

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Areas (MSAs). The Chicago-Naperville-Joliet, Illinois MSA includes Cook, DeKalb, DuPage, Grundy, Kane, Kendall, McHenry, and Will Counties, and its population size was slightly more than 9 million (ranking third in the Nation), according to the 2000 census. In 2006, this population was estimated at 9.5 million.

According to the U.S. Census Bureau, the city population increased about 4 percent between 1990 and 2000. The number of Hispanics living in Chicago increased 38 percent between 1990 and 2000, while the number of Whites and African-Americans declined by 14 and 2 percent, respectively. Among U.S. cities, Chicago has the second largest Mexican-American and Puerto Rican populations.

Based on the 2000 census, the Chicago population was 36 percent African-American, 31 percent White, 26 percent Hispanic, and 4 percent Asian-American/Pacific Islander. In 2000, the median age of Chicagoans was 31.5; 26 percent of the population were younger than 18, and 10 percent were 65 or older. The U.S. Bureau of Labor Statistics estimated unemployment for the Chicago MSA to be 10.4 percent in May 2010. A recent report ([www.voices4kids.org/library/files/KC2010/KC-Chpt-2-IncomePoverty.pdf](http://www.voices4kids.org/library/files/KC2010/KC-Chpt-2-IncomePoverty.pdf)) using data from the U.S. Census Bureau American Community Survey estimated that 31 percent of children in Chicago lived below the poverty level in 2008.

## DATA SOURCES

Information for this report was obtained from the sources described below:

- **Treatment data** for the State of Illinois and Chicago for fiscal years (FYs) 2002–2007 and 2009 (July 1–June 30) were provided by the Illinois Division of Alcoholism and Substance Abuse (DASA).
- **Emergency department (ED) data** were derived for calendar year (CY) 2008 from the Drug Abuse Warning Network (DAWN) *Live!* restricted-access, online query system, administered by the Office of Applied Studies (OAS),

Substance Abuse and Mental Health Services Administration (SAMHSA). Eligible hospitals in the Chicago MSA totaled 88; hospitals in the DAWN sample numbered 76, with 79 EDs in the sample. (Some hospitals have more than one ED.) During this 12-month period, between 30 and 35 EDs reported data each month. The completeness of data reported by participating EDs varied by month (exhibit 1). Exhibits in this paper reflect cases that were received by DAWN as of May 5, 2009. Data derived from DAWN *Live!* represent drug reports in drug-related ED visits. The number of drug reports exceeds the number of visits because a patient may report use of multiple drugs (up to six drugs plus alcohol). The DAWN *Live!* data for 2008 are unweighted and are not estimates for the reporting area. These data cannot be compared with DAWN data from 2007 and before, nor can these preliminary data be used for comparison with future data. Only weighted DAWN data released by SAMHSA can be used for trend analysis. This report provided the first weighted ED data, however, for the years 2004–2007, and also includes weighted ED data for 2006–2008. A full description of the DAWN system can be found on the DAWN Web site: <http://dawninfo.samhsa.gov>.

- **Arrestee drug use data** were derived from the Arrestee Drug Abuse Monitoring (ADAM II) program, sponsored by the Office of National Drug Control Policy (ONDCP). ADAM II collects data regarding drug use and related issues from adult male booked arrestees in 10 counties across the country. ADAM II data come from two sources: a 20–25 minute face-to-face interview and urinalysis of a test sample for the presence of 10 different drugs. Participation in both the interview and urine test is voluntary and confidential. In 2008, 4,592 interviews were conducted with booked arrestees from all 10 sites. Of these interview respondents, 3,924 provided a urine specimen. Data were collected over two quarters in 2008 and then statistically annualized to represent the entire year.

- **Drug-related mortality data** on deaths in Cook County related to accidental drug poisonings were available for 2007 and 2008 from DAWN Area Profiles of Drug-Related Mortality, SAMHSA, OAS, Rockville, Maryland.
- **Price and purity data** were provided by the Drug Enforcement Administration (DEA), Domestic Monitor Program (DMP), for heroin for 1991–2008. The Illinois State Police (ISP), Division of Forensic Science, provided purity data on drug samples for 2008. Drug price data are reported from the February 2010 report of *National Illicit Drug Prices* by the National Drug Intelligence Center (NDIC). Data from the National Forensic Laboratory Information System (NFLIS) for CY 2009 were used to report on drugs seized by law enforcement in Chicago. Ethnographic data on drug availability, prices, and purity are from observations and interviews conducted by the Community Outreach Intervention Projects (COIP), School of Public Health, University of Illinois at Chicago (UIC).
- **Survey data on student and household populations** were derived from two sources. Student (8th, 10th, and 12th grades) drug use data were provided by the 2006 Illinois Youth Survey, which is prepared by the Chestnut Health Systems for the Illinois Department of Human Services. The 2009 Youth Risk Behavior Survey (YRBS), prepared by the Centers for Disease Control and Prevention (CDC), provided drug use data representative of students in grades 9 through 12 in Chicago public schools. Data on substance use and abuse for the State of Illinois were provided by SAMHSA's National Survey on Drug Use and Health (NSDUH) for 2005 and 2006.
- **Recent drug use estimates** were derived from the NIDA-funded “Sexual Acquisition and Transmission of HIV – Cooperative Agreement Program” (SATH-CAP) study in Chicago (U01 DA017378). Respondent-driven sampling was used at multiple sites in Chicago to recruit men and women who use “hard” drugs (cocaine, heroin, methamphetamine, or any illicit injected

drug), men who have sex with men (MSM) regardless of drug use, and sex partners linked to these groups. Participants ( $n=4,344$ ) in this ongoing study completed a computerized self-administered interview and were tested for human immunodeficiency virus (HIV), syphilis, chlamydia, and gonorrhea.

- **Acquired immunodeficiency syndrome (AIDS) and HIV data** were derived from both agency sources and UIC studies. Illinois Department of Public Health (IDPH) surveillance reports provided statistics on sexually transmitted infections (STI)/HIV infections from June 2007 through December 2009 for the State of Illinois. Data for Chicago were obtained from a presentation, *Current State of the HIV/AIDS Epidemic in Chicago*, by Nikhil Prachand, Chicago Department of Public Health (CDPH), STI/HIV/AIDS Division, March 2010.

Several of the sources traditionally used for this report have not been updated by their authors or were unavailable at the time this report was generated. Because some information has not changed—and to avoid redundancy—this report occasionally refers readers to a previous Chicago CEWG report for more information in a particular area.

## DRUG ABUSE PATTERNS AND TRENDS

Although this report of drug abuse patterns and trends is organized by major pharmacologic categories, readers are reminded that multidrug consumption is the normative pattern among a broad range of substance abusers in Chicago. Various indicators suggest that drug combinations play a substantial role in drug use prevalence. Preliminary unweighted DAWN data show that 26 percent of all ED drug reports in Chicago in 2008 were alcohol-in-combination. During FY 2009, heroin use was the most often reported reason for seeking addiction treatment in Chicago. Among these treatment episodes, the most common secondary substances reported were cocaine (43 percent) and alcohol (9 percent).

## Cocaine/Crack

The majority of quantitative and qualitative cocaine indicators suggest that use may be declining somewhat but remains at high levels and continues to constitute a serious drug problem for Chicago.

The number of treatment services rendered for primary cocaine use in Chicago declined markedly to 9,992 in FY 2009 due to budget cuts (exhibit 2). Treatment services peaked in FY 2006 at 17,764 and decreased slightly in FY 2007 to 16,938 admissions. Cocaine use was the third most common reason to enter treatment in FY 2009; the majority reported treatment for crack cocaine use (89 percent) (exhibit 3). Cocaine was the most commonly mentioned secondary drug among clients treated for primary alcohol, heroin, and other opioid-related problems. In FY 2007, African-Americans remained the largest group treated (79 percent) for cocaine abuse, and males accounted for more services rendered (62 percent) than females (exhibit 3).

Preliminary unweighted data accessed from DAWN *Live!* for 2008 showed that almost one-third (32 percent) of total ED reports for major substances of abuse (including alcohol) were cocaine related. ED cocaine reports totaled 8,132 during this period (exhibit 4). The majority of the cocaine reports involved males (66 percent) and patients older than 35 (77 percent). African-Americans represented 65 percent of cocaine ED reports, followed by Whites at 16 percent (race was not documented for 10 percent of the cocaine ED reports).

Weighted Dawn ED data showed that the rate of cocaine-involved ED visits in 2008 were significantly lower than in 2006 (321 versus 369 per 100,000 population,  $p < 0.05$ ), though not significantly different than the rates in 2004 (332), 2005 (322), and 2007 (328).

The most recent DAWN Area Profile of Drug-Related Mortality reported 568 drug-related deaths in Cook County in 2008. The number and proportion of these deaths that involved cocaine declined in 2008 ( $n=282$ , 50 percent), compared with 2007 ( $n=342$ , 63 percent).

Among the 593 male jail arrestees sampled in 2008 by ADAM II at the Cook County Jail, 485

(87 percent) consented to interviews and, of them, 426 (88 percent) provided a urine sample for drug testing. Most (87 percent) arrestees tested positive for at least one illicit drug; 40 percent were positive for multiple drugs; and 44 percent were positive for cocaine. All three figures were the highest among the 10 ADAM II sites nationally. The proportion testing positive for cocaine in 2008 was slightly—though not significantly—higher than in 2007 (41 percent). Self-reported crack use in the 30 days before arrest was highest in Chicago and Atlanta (23 percent). In contrast, Chicago arrestees were the least likely (3 percent) to report using powdered cocaine in the 30 days before arrest.

ISP and Federal (NFLIS) laboratories reported that cocaine was the drug most often received for testing in CY 2009 after cannabis, constituting 26 and 22 percent of the drugs seized in 2008 and 2009, respectively (exhibit 5).

The NDIC reported a substantial increase in the wholesale price of a kilogram of powder cocaine in Chicago on the low end, from \$17,000–\$25,000 in 2007 to \$23,000–\$25,000 in 2008. The price range for powder cocaine was nearly the same in mid-2009 at \$22,000–\$26,000, a level well above the \$15,000–\$22,000 reported in 2006. Ounce prices reported by NDIC in mid-2009 ranged from \$800 to \$1,000, while ethnographic reports in mid-2010 reported prices around \$1,300. NDIC reported no prices for crack cocaine in Chicago for mid-2009. Ethnographic reports indicated that crack cocaine remained highly available in street markets and typically sold for \$5–\$20 per bag, a level that has been stable for many years.

The ISP analyzed 197,112 grams of cocaine in Cook County (which includes Chicago) in 2009, 24 percent of which was crack cocaine. In Chicago, an average of 74 percent purity was reported for two exhibits of cocaine weighing more than 980 grams. In addition, one exhibit weighing between 0.1 and 2 grams was analyzed with a purity of 97 percent.

Ethnographic reports suggest that the quality of cocaine (and heroin) may be becoming more variable, as police pressure on drug dealing organizations causes decentralization in organizational



structures. Leaders in highly centralized drug-dealing gangs have been effectively targeted by police. Consequently, as they are sent to prison, drug sales are more often made by smaller cliques of younger people who have more control over the product they sell, including how the product is mixed. There is also a trend towards conducting user-level sales through contacts made by telephone or other electronic means rather than in open-air markets, which are more vulnerable to arrests.

The 2009 YRBS assessed current (previous 30 days) and lifetime cocaine use among public school students in grades 9 through 12 in the city of Chicago. In 2009, 3.4 percent (2.1–5.6, 95 percent confidence interval [CI]) of Chicago students reported current cocaine use, an increase from 2005 of 1.9 percent (1.1–3.4). Lifetime use for these students increased from 4.2 percent (2.4–7.3) in 2005 to 6.7 percent (4.3–10.1) in 2009, the highest level since the first YRBS survey in 1991 (exhibit 6).

According to data from SAMHSA's NSDUH, the proportion of past-year cocaine use among Illinois youth age 12–17 increased slightly from 1.32 percent in 2005 to 1.58 percent in 2006.

In the SATH-CAP study, crack cocaine was the most prevalent illicit drug, with 55 percent of participants reporting its use in the past 30 days. Crack use varied geographically, with the highest prevalence on the north side and the lowest prevalence on the near northwest side. Ethnographic reports suggested crack cocaine remained highly available on the street, while powder cocaine was less easily found. Powder cocaine in street drug markets is said to be used mostly by speedball (heroin and cocaine) injectors and was often of poor quality.

## Heroin

Heroin abuse indicators in this reporting period continued to suggest high levels of use in the Chicago area. NDIC data indicated that South American heroin dominated Chicago drug markets. Mexican brown and tar heroin and, to a lesser extent, Southeast and Southwest Asian were also available.

The number of treatment services rendered for primary heroin use in Chicago declined markedly in FY 2009 to 19,099 (exhibit 2). As was the case with cocaine treatment services, officials attribute this decline to budget reductions. The number of clients treated for heroin use in State-supported programs increased considerably between FY 2000 and the peak in FY 2005 at 33,662; such admissions then decreased to about 27,000 in both FY 2006 and FY 2007. Heroin use accounted for 38 percent of all treatment admissions in FY 2009 and was the most common reason for seeking treatment in Chicago (exhibit 3). Consistent with recent years, the majority (81 percent) of those treated reported inhalation (“snorting”) as the primary route of administration. The proportion reporting injection as the primary route of administration increased somewhat from 14 percent in FY 2007 to 17 percent in FY 2009 (exhibit 3). In contrast, clients entering treatment programs outside of Chicago were far more likely to report injection as the primary route of administration, and this figure increased markedly from 46 percent in FY 2007 to 59 percent in FY 2009. Recent research indicated that injection was declining among African-Americans and perhaps increasing among Whites (Armstrong, 2007; Broz and Ouellet, 2008; Cooper et al., 2008), which may account for some of this difference in injection prevalence. Clients entering treatment in Chicago were more likely to be African-American (82 percent), while clients from the remainder of Illinois were more likely to be White (60 percent).

Preliminary unweighted DAWN *Live!* ED data for 2008 indicated that heroin was the third most frequently reported major substance of abuse, following only cocaine and alcohol (exhibit 4). The majority of the 6,472 heroin ED reports involved males (65 percent), those older than 35 (74 percent), and African-Americans (60 percent) (race was not documented for 10 percent of the heroin reports).

Weighted data Dawn ED data showed that the rate of heroin-involved ED visits in 2008 was significantly greater than in 2007 (250 versus 206 per 100,000 population,  $p < 0.02$ ), though not

significantly different than the rates in 2004 (234) and 2005 (201). The number and proportion of drug-related deaths in Cook County attributed to opiates/opioids increased in 2008 to 72 percent ( $n=409$ ) from 60 percent ( $n=326$ ) in 2007.

ADAM II data indicated that 29 percent of male arrestees at the Cook County Jail tested positive for opiates in 2008, a substantial increase from 2007 (20 percent). This was the highest level among the 10 ADAM II sites nationally. Males older than 30 were much more likely to test positive for an opiate than were younger male arrestees. Among Chicago arrestees who used heroin, only 25 percent said they injected the drug, far fewer than in any other city.

The purity of street-level heroin peaked in 1997 at about 31 percent and then began a steady decline to 12.6 percent in 2006 (exhibit 7). However, the average price per milligram pure was \$0.49 in 2006, among the lowest in CEWG cities nationally. Purity rebounded in 2007 to 21 percent and increased again in 2008 to 24 percent. This change was accompanied by a decline in the average price per milligram pure to \$0.37 in 2008, the lowest price for South American heroin among the 28 cities sampled nationally and well below the average of \$1.07.

The amount of heroin analyzed in Cook County by the ISP laboratory increased from 12 kilograms in 2002 to 21 kilograms 2003, remained at this level in both 2004 and 2005, and then dropped to less than 20 kilograms in 2006. In 2007, the amount of heroin analyzed by the ISP increased again to almost 23 kilograms, dropped to 19 kilograms in 2008, and then increased to 38 kilograms in 2009. Cook County accounted for 92 percent of heroin seized by the ISP in 2009. No purity data were available for this heroin. According to NFLIS, heroin was the third most often identified drug in Chicago in CY 2009, accounting for 13 percent of all items analyzed (exhibit 5).

The YRBS reported an increase in lifetime use of heroin among Chicago public high school students from 2.0 percent (CI=0.9–4.4) in 2005 to 4.7 percent (CI=3.0–7.2) in 2009, though this increase was not statistically significant (exhibit 6). More

use was reported for male (6.8 percent) than for female (1.9 percent) students.

Heroin prices varied depending on type and origin. On the street, heroin was commonly sold in \$10 and \$20 units (bags), although bags for as little as \$5 were available. Heroin was also sold in bundles (“jabs”), typically 11–13 “dime” bags for \$100. During this reporting period, there were reports of \$100 jabs that comprised 15 bags, the most ever reported to researchers. According to the December 2008 NDIC report, wholesale prices for a kilogram dropped to \$35,000–\$50,000 from about \$60,000 in 2007 for Mexican brown powder heroin, and prices dropped to \$30,000–\$80,000 from \$45,000 to \$80,000 for 1 kilogram of Mexican black tar heroin. No kilogram prices were available for mid-2009, though there were two mid-2010 reports of white heroin for about \$65,000 a kilogram. In comparison, kilogram prices in 2003 ranged from \$100,000 to \$125,000. Ethnographic reports of ounce prices in 2010 for white heroin averaged \$1,800–\$2,800, which is in the 2006 range of \$1,800–\$3,000 but somewhat lower than in 2003 (\$2,500–\$3,000). NDIC reported mid-2009 ounce prices for Mexican brown powder that ranged from \$800 to \$1,000. Ethnographic reports indicated gram prices for heroin typically ranged from \$80 to \$150.

The prevalence of heroin use in the past 30 days among SATH-CAP participants was 49 percent and was highest on the near northwest side of Chicago.

### Other Opiates/Narcotics

Preliminary unweighted data accessed from DAWN *Live!* showed that there were 2,761 ED reports of other opiates in 2008 that were due to seeking detoxification, overmedication, or “other,” which includes the illegal use of the drug. The majority of the “other opiates” reports were for methadone (26 percent), hydrocodone (20 percent), propoxyphene (8 percent), and oxycodone (6 percent). Males represented more than one-half of the cases (56 percent), while African-Americans constituted 43 percent of cases, followed by White

and Hispanic reports (34 and 8 percent, respectively). Race was not documented for 15 percent of reports.

Weighted DAWN ED data showed that the rate of hydrocodone-involved ED visits per 100,000 population was significantly greater ( $p<0.01$ ) in 2008 (15.6), compared with 2007 (11.7) and 2006 (11.6). Likewise, the rate of oxycodone-involved ED visits per 100,000 population was significantly greater in 2008 (3.7), compared with 2007 (2.5;  $p<0.01$ ) and 2006 (2.5;  $p<0.04$ ).

Drug treatment for other opiates/opioids as the primary drug of abuse decreased from 788 episodes in 2006 to 496 in 2007, a 37-percent reduction. The further decrease to 239 episodes in FY 2009 likely reflected budget reductions rather than demand. In contrast to 2007, treatment episodes in 2009 more often involved males (54 percent) and Whites (46 percent) rather than African-Americans (38 percent). As in the past, the largest age group was clients older than 34, but this proportion in FY 2009 (50 percent) was substantially lower than in FY 2007 (76 percent). Oral ingestion (72 percent) was reported as the most frequent route of administration, and cocaine was reported to be the most common secondary drug.

Of the top 25 drugs seized and analyzed by the NFLIS, five were opiates/opioids other than heroin: hydrocodone (513); methadone (113); buprenorphine (104); oxycodone (54); and codeine (44).

### **Methamphetamine/Amphetamines**

Treatment services rendered in Chicago for methamphetamine use steadily increased, from 29 episodes in FY 2002 to 139 in FY 2006, before declining to 114 in FY 2007. In 2009, there were 81 methamphetamine treatment episodes, a decline that may have been affected by budget reductions. After a substantial increase in the proportion of episodes involving African-Americans seeking treatment for methamphetamine abuse, from 15 percent in FY 2005 to 47 percent in FY 2006, there was a decline to 30 percent in FY 2007 and 17 percent in FY 2009 (exhibit 3). Males continued to be more likely to seek treatment than

females (81 percent), probably because the use of methamphetamine in Chicago remains concentrated among MSMs. While smoking was the most often reported primary route of administration in FY 2007 (60 percent), there was little difference in FY 2009 between the proportions reporting injection (48 percent) versus smoking (47 percent). The proportion reporting injection was 27 percent in FY 2007 and 15 percent in FY 2006. A more pronounced increase in methamphetamine treatment episodes was reported in the rest of the State. Treatment episodes increased from 698 in FY 2000 to peak in FY 2005 at 5,134, but they started to decline in FY 2006 to 4,879 and then to 3,029 in FY 2007. There were 1,595 episodes in FY 2009. Cocaine was the predominant secondary drug used with methamphetamine (28 percent) in Chicago, followed by alcohol (21 percent), while elsewhere in the State marijuana (32 percent) was the predominant secondary drug, followed by alcohol (20 percent).

Treatment services rendered for methamphetamine outnumbered those for amphetamine in Chicago and the State. In FY 2009, there were 34 amphetamine episodes reported in Chicago. In FY 2007, there were 56 episodes, a 53-percent decrease from the previous year. Amphetamine treatment episodes in the rest of the State numbered 335 in FY 2007 and 127 in FY 2009. In contrast to FY 2007, treatment for amphetamine use in Chicago more often involved females (74 percent) and African-Americans (41 percent). Nearly equal proportions in FY 2009 reported cocaine (18 percent) and marijuana (15 percent) as the predominant secondary drug used in conjunction with amphetamine.

In 2008, preliminary unweighted DAWN *Live!* data showed 49 methamphetamine ED reports for Chicago (exhibit 4). ED patient characteristics were similar to clients receiving treatment services in publicly funded programs for methamphetamine. Males (71 percent), persons age 21–54 (82 percent), and Whites (at least 45 percent) accounted for the majority of ED methamphetamine reports. (Race was not documented for 16 percent of these reports.) In 2008, DAWN

*Live!* registered 111 preliminary amphetamine ED reports (exhibit 4). Weighted DAWN ED data for 2004 through 2008 showed that the rate of methamphetamine-involved ED visits remained very low (2–3 per 100,000 in population).

ADAM II data indicated that in 2008 0.4 percent of male arrestees at the Cook County Jail tested positive for methamphetamine, down from 0.7 percent in 2007 and among the lowest ADAM II sites nationally.

Data from the ISP indicated that seizures of methamphetamine in 2006 decreased considerably from the previous year. In 2005, more methamphetamine was seized than cocaine or heroin in nearly 50 percent of Illinois counties. However, methamphetamine seizures in all counties in Illinois were reduced by 52 percent in 2006 and by another 53 percent in 2007 (to 9.1 kilograms). In 2008 and 2009, methamphetamine seizures increased to 12.8 and 15.2 kilograms, respectively. The amount of methamphetamine received by ISP from Cook County in 2006 also decreased considerably from the previous year, from approximately 7.6 to 3.8 kilograms, a reduction of 51 percent. However, in 2008 there was an increase to 7 kilograms of methamphetamine seized by the ISP, followed by 7.2 kilograms in 2009. According to the NFLIS report, 0.57 percent of the items analyzed in Chicago in CY 2009 were methamphetamine (exhibit 5).

According to the YRBS, lifetime use of methamphetamine among Chicago public high school students increased considerably from 1.5 percent in 2005 to 4.7 percent in 2007 before declining slightly in 2009 to 4.3 percent (exhibit 6). Use was greater ( $p=0.03$ ) among male students (5.5 percent) than female students (2.1 percent). Interestingly, methamphetamine use among high school students was less prevalent in the State of Illinois than in the city of Chicago in 2007 (3.8 percent; 95 percent CI=2.5–5.0), although this difference could be due to chance. In Chicago, African-American students had the lowest proportion (2.4 percent), while non-Hispanic Whites and Hispanic students were the most likely to use the drug (4.8 percent and 5.1 percent, respectively). For the State as a whole, use was greatest among Hispanic

(5.4 percent) and Asian (4.8 percent) students, followed by Whites (3.4 percent) and African-Americans (1.2 percent).

Within Chicago, a low but stable prevalence of methamphetamine use has been reported for a number of years in the north side gay community. In a recent study of young (age 16–24) MSMs ( $n=270$ ), 13 percent reported past-year use of methamphetamine (Garofalo et al. 2007). Use was more likely among those who were older, non-African-American, or HIV positive. During the previous reporting period, the authors received the first report of what may be a reliable and perhaps organized source of methamphetamine outside the north side gay community.

In the SATH-CAP study, 13 percent of participants reported ever trying amphetamine or methamphetamine, and only 4 percent reported use in the 30 days prior to being interviewed. Among MSM, these figures increased to 16 and 8 percent, respectively.

NDIC reported no prices for methamphetamine in Chicago for mid-2009. NDIC reported that in 2007 a pound of “ice” methamphetamine ranged in price from \$8,000 to \$16,000, and in 2008 the price increased to \$10,000–\$14,000. Ounce prices in both years ranged from \$1,000 to \$1,500, about the same as in 2003 (\$1,000–\$1,300). Gram prices for ice were the same in all three time periods, \$80–\$100.

## Marijuana

Marijuana continued to be the most widely available and used illicit drug in Chicago and Illinois.

Marijuana users represented 18 percent (8,890) of all treatment episodes in Chicago in FY 2009 and 27 percent of episodes elsewhere in the State, close to the figures for FY 2007. Marijuana-related episodes increased as a percentage of total episodes in Chicago between FY 2002 and FY 2007, peaking in 2007 at 9,639 episodes. Alcohol remained the most commonly reported secondary drug among persons receiving treatment for marijuana (41 percent). In Chicago, treatment episodes for marijuana were highest

for males (80 percent) and for African-Americans (71 percent) (exhibit 3).

Preliminary unweighted data accessed from *DAWN Live!* showed that ED reports of marijuana in 2008 represented 13 percent of all substance abuse reports, including alcohol (exhibit 4). Of the 3,384 marijuana ED reports during this period, 48 percent involved African-American patients, followed by Whites (24 percent) (race was not documented for 13 percent of the reports). The majority of these patients were male (68 percent) and younger than 35 (64 percent).

Of arrestees in ADAM II, 49 percent tested positive for marijuana, second highest nationally, though slightly less than in 2007 (52 percent). Males age 30 and younger were more likely to test positive than older male arrestees.

According to the DEA, the bulk of marijuana shipments were transported by Mexico-based poly-drug trafficking organizations. The primary wholesalers of marijuana were the same Mexico-based organizations that supplied most of the cocaine, methamphetamine, and heroin in the Midwest. In addition, high-quality marijuana was brought from the west coast to Chicago by Whites involved in trafficking and from Canada by Chinese, Vietnamese, and Albanian traffickers. Marijuana produced locally (indoor and outdoor) by independent dealers was also increasingly available.

The abundance and popularity of marijuana across the city has led to an array of types, quality, and prices. Marijuana prices may have increased since 2003. According to the NDIC mid-2009 report, a pound of marijuana in Chicago cost about \$1,400 for commercial grade, though prices as low as \$750 were reported. High quality marijuana (“BC Bud”) sold for \$4,000 per pound, according to the NDIC, and there were reports of “kush” marijuana selling for \$5,000 per pound. An ounce of BC Bud cost \$400 (NDIC), while lesser grades sold for \$100–\$175 (ethnographic reports). On the street, marijuana was most often sold in bags for \$5–\$20 or as blunts. Both ISP and NFLIS laboratories analyzed more marijuana samples than samples for any other drug in 2009. Fifty-nine percent of drug samples analyzed by the NFLIS for

Chicago in CY 2009 were identified as marijuana/cannabis (exhibit 5).

According to the CDC’s YRBS, lifetime marijuana use among 9th through 12th grade public school students in Chicago has declined 17 percent since its 2001 peak of 49.3 percent. In 2009, 41.0 percent of students reported ever smoking marijuana, the lowest level since the 1995 survey (33.7 percent). Marijuana use in the past 30 days, reported by 22.2 percent of students (95 percent CI: 19.2–25.5), has leveled since the 2003 survey. In 2009, male students were only slightly more likely to report lifetime use than female students (41.5 and 40.3 percent, respectively), while 47.8 percent of Hispanic students reported having used marijuana at least once in their lifetime, compared with 47.9 percent of African-American and 38.9 percent of White students. These differences, however, were not statistically significant.

### Club Drugs

In the Chicago area, MDMA or “ecstasy” (3,4-methylenedioxymethamphetamine) continued to be the most prominently identified of the club drugs, and its use appeared to have increased among African-Americans. In FY 2007, treatment services for MDMA use in Illinois were few, with only 124 episodes reported. Direct comparisons to earlier years are not possible, because reports of treatment for MDMA use were subsumed in the category of “club drug” use. Nonetheless, the number of treatment episodes for MDMA in 2007 exceeded the number for club drug use by about 50 percent for both FY 2005 and FY 2006. Despite declines in treatment episodes overall in FY 2009 due to budget reductions, episodes for primary MDMA abuse increased to 159. For the remainder of the State, there were only 94 treatment episodes. Treatment episodes in Chicago usually more often involved males (92 percent) and African-Americans (65 percent).

The preliminary unweighted data extracted from *DAWN Live!* showed 179 MDMA reports in 2008 (exhibit 4). MDMA ED reports were more common among male patients (64 percent),

African-Americans (51 percent), and those younger than 35 (92 percent).

Weighted DAWN ED data showed that the rate of MDMA-related ED visits in 2008 was significantly greater than in 2004 and 2007 (7.2 versus 3.6 and 4.5 per 100,000 population,  $p < 0.01$ ). African-Americans were the largest racial/ethnic group among MDMA ED visits, and their weighted number more than doubled between 2005 (142) to 2008 (339).

From 2005 to 2007, lifetime use of MDMA among 9th through 12th grade students in Chicago increased from 3.3 to 6.4 percent and then leveled at 6.5 percent (95 percent CI=4.6-9.0) in 2009, according to the YRBS (exhibit 6). Non-Hispanic White students were more likely to report lifetime MDMA use (7.3 percent) than were Hispanics (5.9 percent) and African-American students (4.5 percent). The percentage of male students who reported lifetime use of MDMA was greater than that of female students (8.9 versus 5.1 percent). None of these differences, however, were statistically significant.

MDMA samples sent to the ISP laboratory from Cook County decreased from 4.6 kilograms in 2007 to 3.3 kilograms in 2008 and 3.0 kilograms in 2009. In contrast, NFLIS reported an increase in the proportion of all items analyzed for Chicago that were MDMA, from 0.78 percent in FY 2006 to 1.6 percent in CY 2009 (exhibit 5). NFLIS data also showed a large increase in the number of samples of BZP (1-benzylpiperazine), a drug often sold as or in combination with MDMA, from 15 in CY 2007, to 380 in CY 2008, to 1,188 in CY 2009.

Ecstasy was available in street drug markets, although availability varied across the city. In some areas, ecstasy was reported by street sources to be sold by the same persons who sold heroin and cocaine. In other markets, ecstasy was sold by persons who specialized in the drug. Ecstasy continued to be sold in pill or capsule form, and, according to the NDIC, prices have been decreasing slightly in recent years. In 2003, per-tablet wholesale prices ranged between \$10 and \$12, but they declined to \$5 per tablet in 2006. In 2008, per-tablet wholesale prices ranged from \$5 to \$10; no wholesale prices

were available for mid-2009. Mid-level prices according to NDIC ranged from \$10 to \$20 per pill, and there was a report of \$1,100 for a jar of 100 pills. The retail price in 2008 was \$20 per tablet, according to NDIC, which is at the low end of the 2007 range of \$20–\$40. Ethnographic reports indicated that mid-2010 retail prices ranged from \$5 to \$40 per pill.

There have been increasing reports over the past few years of ecstasy use from participants in local studies of drug users. These reports indicate increased use of ecstasy by African-Americans, principally those in their teens and twenties, but some older. This use of ecstasy occurs not only in the context of club going and house parties, but also among street populations, including sex workers. Marijuana and alcohol are the drugs most often purposely consumed in combination with ecstasy. Users commonly claim that ecstasy can be obtained in “upper” and “downer” forms, which suggests MDMA tablets include different combinations of drugs. For example, the DEA reports that seizures of MDMA tablets increasingly have found BZP to be present, and NFLIS reports for the Chicago MSA show an increase in BZP from 15 exhibits in 2007 to 1,188 in 2009.

GHB (gamma hydroxybutyrate), a central nervous system depressant with hallucinogenic effects, was used infrequently in Chicago, and its use was mainly by young White males.

No treatment services were provided specifically for GHB use in FY 2007, and according to preliminary unweighted data accessed from DAWN *Live!*, there were only 26 GHB ED reports in 2008.

GHB is sold as a liquid (“Liquid G”), in amounts ranging from drops to capfuls. Prices for a capful have been reported at \$10 and have remained level. Compared with other club drugs, overdoses are more frequent with GHB, especially when used in combination with alcohol. GHB is not tracked in most quantitative indicators, but its use is perceived to be low compared with ecstasy.

Ketamine, an animal tranquilizer, is another depressant with hallucinogenic properties and is often referred to as “Special K.” DASA did not

report anyone treated for ketamine use in FY 2009 in publicly funded treatment programs in Illinois. The number of exhibits of ketamine reported by NFLIS declined from 63 in CY 2007 to 41 in CY 2008 to 28 in CY 2009 (exhibit 5). Ketamine was usually sold in \$5–\$30 bags of powder or in liquid form, a price range that has been stable since at least 2004.

### PCP, LSD, and Other Hallucinogens

Treatment services rendered for hallucinogen use in Chicago increased from 30 in FY 2002 to 284 in FY 2003 and then decreased in recent years to 133 episodes in FY 2006. In FY 2007, treatment episodes for PCP (phencyclidine) totaled 60, and “other hallucinogens,” which includes LSD (lysergic acid diethylamide), totaled 25. In FY 2009, PCP episodes increased to 126, while those for other hallucinogens declined to 7. The majority of treatment episodes for PCP occurred among African-Americans (86 percent), but, in contrast to FY 2007, females (63 percent) outnumbered males.

In general, both PCP and LSD use in Chicago remained low, although street reports suggested PCP use was fairly common in some neighborhoods. According to preliminary unweighted data accessed from DAWN *Live!*, there were 192 PCP and 34 LSD ED reports in 2008 (exhibit 4). Chicago was the only ADAM II site nationally to report more than 1 percent of male arrestees testing positive for PCP. No deaths related to hallucinogens were reported to the DAWN ME system in 2008.

The amount of PCP samples from Cook County received by the ISP laboratory for analysis decreased dramatically between 2002 and 2006, from 4.2 kilograms to 0.16 kilograms, but PCP samples increased slightly to 0.46 kilograms in 2007, 0.26 kilograms in 2008, and 0.46 kilograms in 2009. NFLIS PCP and LSD seizures totaled 0.27 and 0.03 percent, respectively, of all items analyzed in CY 2009 (exhibit 5).

According to the Illinois Youth Survey, hallucinogen use (including LSD and PCP) has decreased markedly among 8th, 10th, and 12th grade students in Cook County since the turn of the century. Past-

year use was reported by 4 percent of students in 2000, but only 1.8 percent reported use in 2004 and 1.2 percent reported use in 2006. Hallucinogen use was reported more often by males (2.7 percent) than females (1.5 percent) and by White students (2.5 percent) more often than African-American (0.6 percent) and Hispanic (0.6 percent) students.

Ethnographic reports on PCP use suggested that PCP “sticks” about the size of toothpicks were reportedly available for \$10–\$30. LSD hits typically cost \$5–\$10. LSD was available in the city and suburbs.

According to some accounts by White young adults, hallucinogenic mushrooms remained available. Reported prices were \$10 per gram and \$130 per ounce.

### Benzodiazepines/Barbiturates

In Chicago, depressants, such as benzodiazepines and barbiturates, are commonly taken with narcotics to potentiate the effect of opiates, frequently heroin. Depressants may also be taken with stimulants to moderate the undesirable side effects of chronic stimulant abuse. Chronic cocaine and speed abusers often take depressants along with stimulants, or when concluding “runs,” to help induce sleep and to reduce the craving for more stimulants (especially in the case of cocaine).

Treatment data indicated depressants rarely were the primary drugs of choice among entrants. In FY 2009, DASA reported 18 treatment episodes for benzodiazepines and 7 episodes for barbiturates in Chicago.

Preliminary unweighted data accessed from DAWN *Live!* showed that 1,336 ED reports were related to the misuse of benzodiazepines in 2008. More than one-third (36 percent) of these visits were classified as overmedication. Weighted DAWN ED data showed that the rate of benzodiazepine-related ED visits per 100,000 population was significantly greater ( $p < 0.01$ ) in 2008 (47), compared with 2007 (40), 2006 (39), and 2004.

There were 13 drug-related deaths in Cook County attributed to benzodiazepines in 2008, of which 7 were ruled as suicide.

NFLIS data indicated alprazolam (Xanax®) was the eighth most often analyzed drug in the Chicago MSA, and ethnographic reports indicated it was the benzodiazepine most often used by persons who used heroin or cocaine.

As stated in past Chicago CEWG reports, alprazolam typically sold for \$2–\$3 for 0.5-milligram tablets and \$5–\$10 for 1-milligram tablets, though there were reports of 2-milligram “bars” that sold for \$3–\$5.

## INFECTIOUS DISEASES RELATED TO DRUG ABUSE

While Chicago accounts for 23 percent of Illinois’ population, 75 percent of the State’s diagnosed HIV infections in 2009 were from Chicago, and 84 percent were from metropolitan Chicago (Cook County and the collar counties of DuPage, Kane, Lake, McHenry, and Will).

There were 22,762 persons known to be living with HIV/AIDS in Chicago in 2008. Of the 982 new cases of HIV (not AIDS) diagnosed in 2008, only 12 percent were attributed to injection drug use, well below the 26 percent reported in 2000. Male-to-male sexual contact continued to be the leading single mode of transmission (63 percent) of new HIV infections. Non-Hispanic African-Americans comprised 59 percent of new HIV diagnoses despite constituting 35 percent of the city’s population, while non-Hispanic Whites and Hispanics comprised 22 and 15 percent of new infections, respectively. While there have been declines since 2001 in new HIV infections among females that were attributed to drug injection and those attributed to heterosexual contact, the latter began increasing after 2005, while injection-related cases continued to decline. SATH-CAP data suggest that noninjection use of heroin and cocaine is a predictor of heterosexual HIV infection.

A considerable proportion of Chicago students in grades 9 through 12 continue to report behavior that may place them at risk for sexually transmitted infections. Data from the YRBS suggested that 54 percent have had sex, 35 percent did not use a condom during their last intercourse, and 18 percent consumed alcohol or drugs before their

last sexual intercourse. Many students also live in neighborhoods with a high background prevalence of HIV, which increases their chances of having a sexual partner who is HIV positive.

The prevalence of HIV infection among the mostly low-income participants in the SATH-CAP study to date is about 7 percent. Prevalence was highest (47 percent) among males who reported only male sex partners in the past 6 months. Of note, HIV prevalence was only slightly higher among injection drug users compared with noninjection drug users, which reflects declines in infections among the former and increases among the latter.

## ACKNOWLEDGMENTS

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**Exhibit 1. DAWN Live! ED Sample and Reporting Information: January–December 2008**

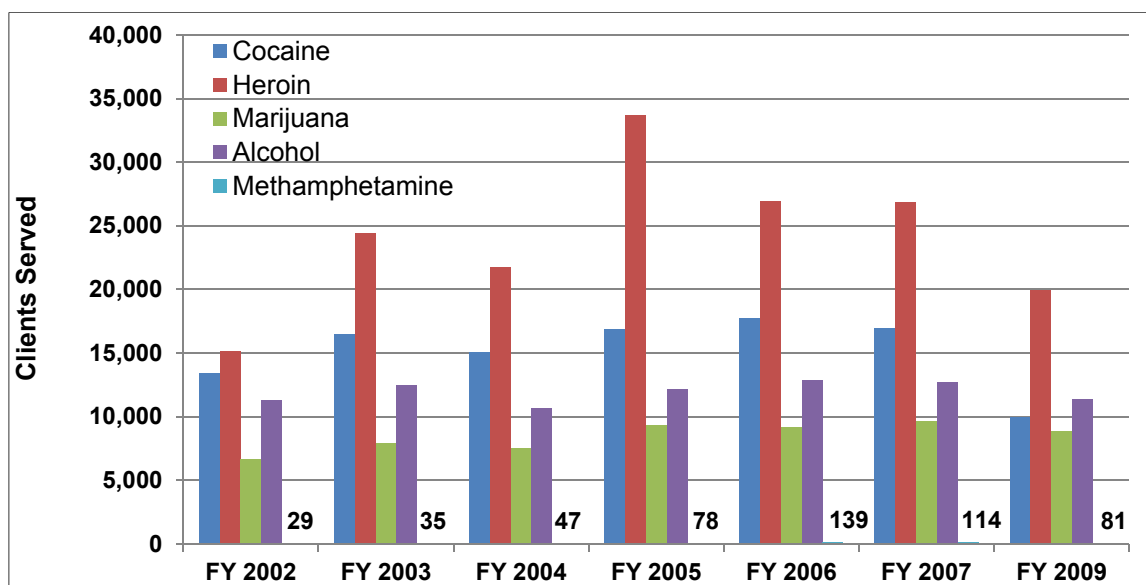
CEWG Area	Total Eligible Hospitals <sup>1</sup>	No. of Hospitals in DAWN Sample	Total EDs in DAWN Sample <sup>2</sup>	No. of EDs Reporting per Month: Completeness of Data (%)			No. of EDs Not Reporting
				90–100%	50–89%	<50%	
Chicago MSA <sup>3</sup>	88	76	79	21–29	3–9	2–6	44–49

<sup>1</sup>Short-term, general, non-Federal hospital with 24-hour emergency departments based on the American Hospital Association Annual Survey.

<sup>2</sup>Some hospitals have more than one emergency department.

<sup>3</sup>Chicago MSA includes Chicago “Core” and Chicago “Other.”

SOURCE: DAWN Live!, OAS, SAMHSA, updated 5/5/2009

**Exhibit 2. Clients Served in Publicly Funded Treatment Programs, by Primary Substance, in Chicago: FYs 2002–2009<sup>1</sup>**

Note: Since methamphetamine values were so much lower than those for other drugs, the treatment admissions are shown numerically in the graph.

<sup>1</sup>Declines in persons served for cocaine and heroin treatment reflect reductions in funding.

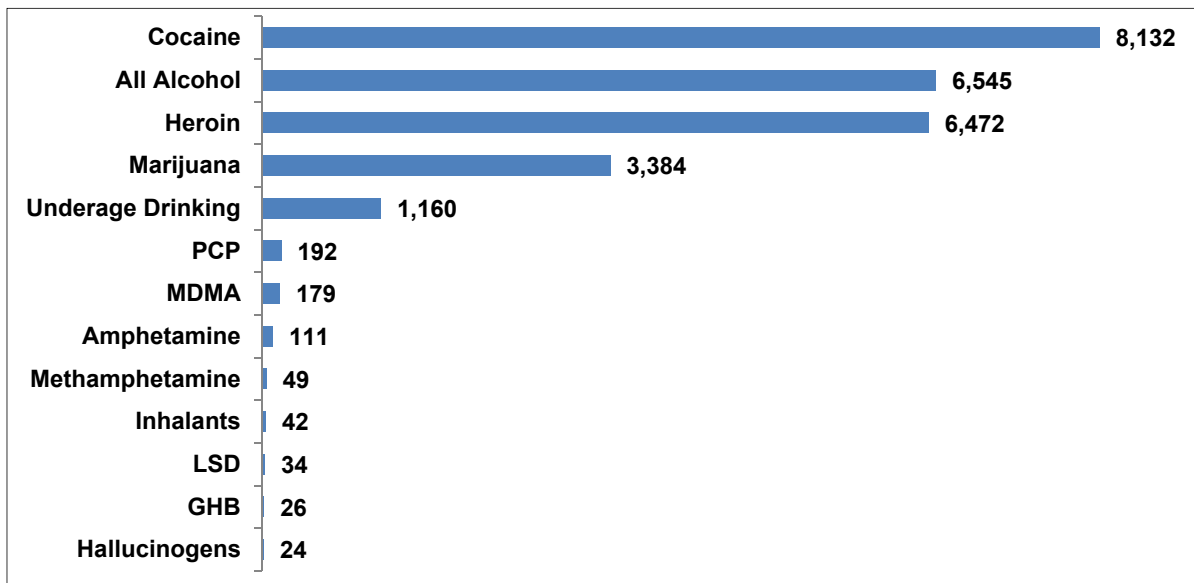
SOURCE: Illinois Department of Human Services, Division of Alcoholism and Substance Abuse

**Exhibit 3. Demographic Characteristics of Clients Served in Publicly Funded Treatment Programs, by Primary Substance and Percentage, in Chicago: FY 2009**

<b>Characteristics N=50,424</b>	<b>Heroin n=19,099</b>	<b>Cocaine n=9,992</b>	<b>Alcohol n=11,329</b>	<b>Marijuana n=8890</b>	<b>Other Opioids n=239</b>	<b>Metham- phetamine n=81</b>
Percent of Total	38	20	22	18	<1	<1
<b>Gender</b>						
Male	57	62	74	80	54	81
Female	43	38	26	20	46	19
<b>Race/Ethnicity</b>						
White	11	10	19	6	46	74
African-American	78	79	55	71	38	17
Hispanic	8	7	23	19	8	-4
Other	<1	1	1	1	1	-
Other Single Race	2	4	3	3	8	5
<b>Age</b>						
17 or Younger	<1	<1	4	42	3	-
18–25	5	5	11	32	18	25
26–34	12	14	21	17	29	43
35 and Older	83	81	64	10	50	32
<b>Route of Administration</b>						
Oral	1	2	100	2	72	1
Smoking	1	89	-	97	4	47
Inhalation	81	9	-	1	20	4
Injecting	17	<1	-	<1	4	48
<b>Secondary Drug</b>	<b>Cocaine 35</b>	<b>Alcohol 42</b>	<b>Cocaine 27</b>	<b>Alcohol 41</b>	<b>Cocaine 21</b>	<b>Alcohol 28</b>

SOURCE: Illinois Department of Human Services, Division of Alcoholism and Substance Abuse

**Exhibit 4. Number of Selected Illicit Drug Reports in Chicago EDs (Unweighted<sup>d</sup>): January–December 2008**



<sup>d</sup>Unweighted data are from 31 to 35 Chicago EDs reporting to DAWN in January–December 2008. All DAWN cases are reviewed for quality control. Based on this review, cases may be corrected or deleted and, therefore, are subject to change.

SOURCE: DAWN *Live!*, OAS SAMHSA, updated 5/5/2009

**Exhibit 5. Drug Seizure Items Analyzed by Forensic Laboratories in Chicago MSA: CY<sup>1</sup> 2007–2009<sup>2</sup>**

Selected Substance	CY 2007		CY 2008		CY 2009	
	Count	Percent	Count	Percent	Count	Percent
Marijuana/Cannabis	47,936	55.30	43,123	55.96	47,212	58.67
Cocaine	24,903	28.73	19,745	25.62	17,803	22.12
Heroin	10,510	12.12	10,121	13.13	10,671	13.26
Clonidine	47	0.05	NA <sup>3</sup>	NA	21	0.03
Methamphetamine	513	0.59	781	1.01	457	0.57
MDMA (3,4-Methylenedioxy-methamphetamine)	1062	1.23	1,163	1.50	1,314	1.63
BZP (1-Benzylpiperazine)	15	0.02	380	0.49	1,188	1.48
PCP (Phencyclidine)	135	0.16	195	0.25	215	0.27
Hydrocodone	513	0.59	380	0.49	508	0.63
Methadone	89	0.10	79	0.10	113	0.14
Alprazolam	161	0.19	206	0.25	321	0.40
Psilocin	89	0.10	72	0.09	114	0.14
Codeine	44	0.05	58	0.07	64	0.08
Diazepam	60	0.07	42	0.05	69	0.09
Clonazepam	42	0.05	38	0.05	61	0.08
Oxycodone	54	0.06	65	0.08	102	0.13
Amphetamine	44	0.05	61	0.08	65	0.08
Ketamine	63	0.07	41	0.05	28	0.03
Propoxyphene	10	0.01	NA	NA	NA	0.00
Morphine	24	0.03	NA	NA	57	0.07
Psilocybin	2	0.00	NA	NA	32	0.04
Lorazepam	20	0.02	NA	NA	24	0.03
Pseudoephedrine	7	0.01	NA	NA	11	0.01
Chlordiazepoxide	0	0.00	NA	NA	NA	0.00
LSD (Lysergic acid diethylamide)	21	0.02	33	0.04	26	0.03
<b>Total Items Reported</b>	<b>86,681</b>		<b>77,456</b>		<b>80,476</b>	

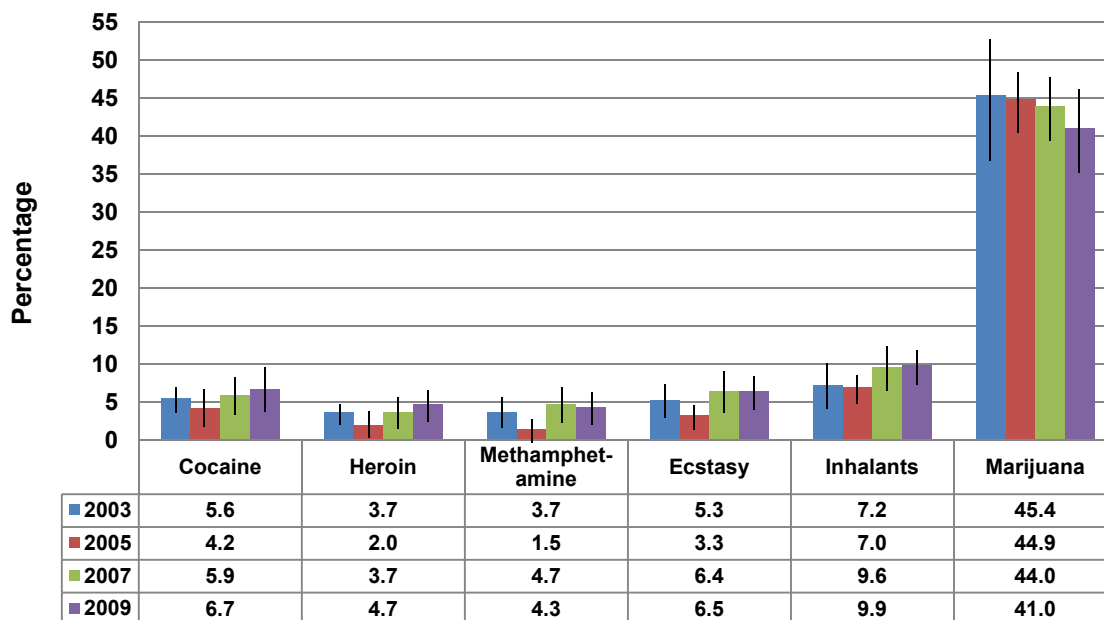
<sup>1</sup>Drug items analyzed between January 1 and December 31 of each year.

<sup>2</sup>NFLIS data for 2007 cannot be trended with data from earlier time periods, as the current methodology used to construct MSA data sets differs from years past.

<sup>3</sup>NA=data not available.

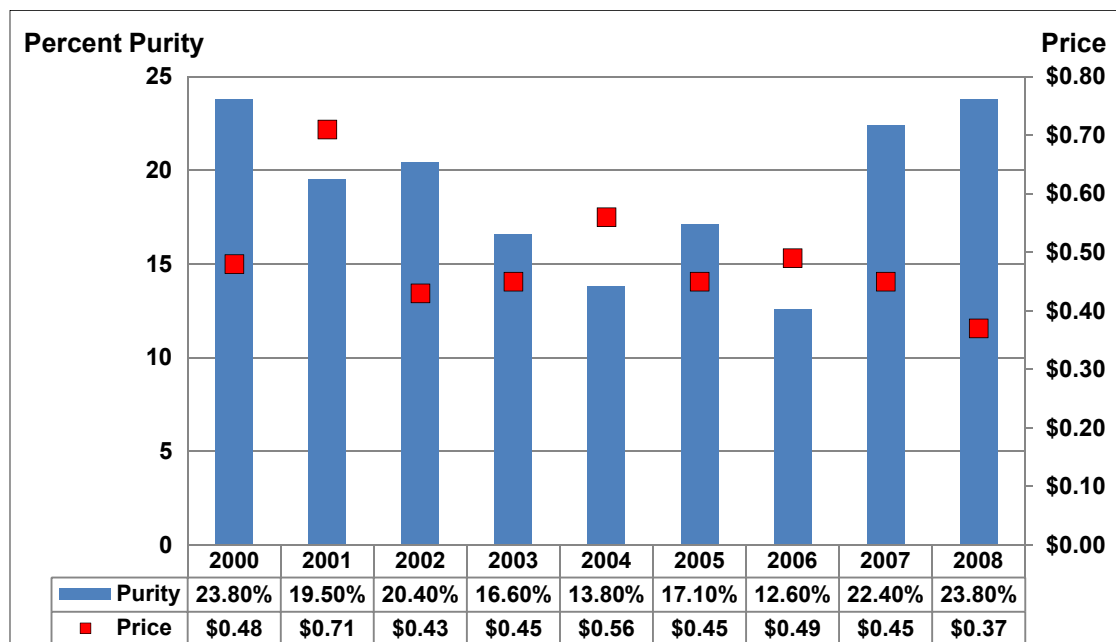
SOURCE: NFLIS, DEA

**Exhibit 6. Percentage (With 95 Percent Confidence Intervals) of Lifetime Illicit Drug Use Among Public High School Students in Chicago, by Survey Year: 2003, 2005, 2007, and 2009**



SOURCE: YRBS, CDC

**Exhibit 7. Heroin<sup>1</sup> Price and Purity Trends in Chicago: 2000–2008**



<sup>1</sup>South American heroin.

SOURCE: DMP, DEA

# Drug Abuse Patterns and Trends in Cincinnati, Ohio: 2009

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## ABSTRACT

*The predominant drug issues in Cincinnati continued to involve both cocaine/crack cocaine and marijuana as primary drugs of abuse. Crack cocaine indicators decreased during 2008, and continued that downward trend in 2009. The supply and quality of cocaine/crack cocaine on the street in Cincinnati dropped in 2008 as larger drug seizures were recorded by law enforcement, and the effect carried over into 2009. Subjective data sources indicated that cocaine dealers were switching to selling heroin as a result. Indicators for marijuana in the Cincinnati region remained stable at high levels. Marijuana dominated all other reported illicit drugs among treatment admissions, accounting for 28 percent of the admissions during fiscal year (FY) 2009. While marijuana availability and use remained high across the Cincinnati region, indicators pointed to a leveling off at a high level. Marijuana accounted for 42.2 percent of submitted items for forensic analysis for Hamilton County, and was second only to alcohol for primary treatment admissions. Indicators for heroin showed a slight increase during 2008, and the trend persisted into 2009. Treatment for primary heroin use was not delineated from other opiate/opioid admissions, accounting for 14 percent of all admissions. Poison control data showed a 47-percent increase in reported human heroin exposure cases reported in 2009, and the Medical Examiner recorded a*

*28-percent increase in deaths attributed to heroin from the previous year. Methamphetamine indicators were low in Cincinnati compared with other drugs of abuse. There was a 75-percent increase in the number of clandestine methamphetamine laboratory seizures discovered during 2009, compared with 2008, which will need to be monitored closely for signs that a shift in use may be occurring. An increase in house fires and explosions related to methamphetamine manufacture occurred in central and southeast Ohio in 2009, compared with the previous year. Indicators for MDMA (3,4-methylenedioxymethamphetamine) remained at a moderate level in Cincinnati during 2009, compared with 2008. Abuse of prescription drugs, specifically benzodiazepine-based tranquilizers and opioid narcotics, continued to be an increasing drug issue in Cincinnati. Qualitative indicators pointed to relative high availability, with some indication of stabilization occurring in 2009 from 2008. The most desirable benzodiazepine abused continued to be alprazolam, according to both users and law enforcement. A 326-percent increase in human exposure cases reported to Ohio poison control centers involving buprenorphine-containing pharmaceuticals occurred between 2007 and 2009, with a majority of these exposures involving children age 3 or younger. There continued to be a need to educate physicians who prescribe, and patients who take buprenorphine-containing pharmaceuticals on safe storage, to decrease the number of children accidentally encountering these medications in the home.*

## INTRODUCTION

### Area Description

The city of Cincinnati is 1 of 36 municipalities within Hamilton County located in the southwest region of the State of Ohio along the Ohio River. Hamilton County is also home to 12 separate townships. Since 1990, the U.S. Census Bureau recorded consistent decreases in the population in the city of Cincinnati, at the rate of approximately 1 percent per

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year. U.S. Census projections indicated there were 308,728 residents of Cincinnati in 2003, along with 823,472 residents in Hamilton County. The Census list that was released in June 2006 showed Cincinnati at the bottom of the list, as the city losing the highest number of U.S. residents of any city during the previous 5-year period. This finding prompted the mayor of Cincinnati to challenge the U.S. Census Bureau to reevaluate the population, based on several indicators that the population had actually increased in numbers for both the city and county. The mayor approached the U.S. Census Bureau with the following for consideration:

- Statistical analysis from city records, including the following:
  - Building permits
  - Demolition permits
  - Conversion of buildings to apartments or condominiums
- Increased home-building data
- Increased development projects data

The U.S. Census Bureau accepted the challenge and, after review of all data submitted, concluded that the city and county populations had indeed increased in size. The new projections for the population of Cincinnati were revised in October 2006 to record 331,310 residents, an increase of 6.8 percent over previous estimations. Similarly, the estimation of residents within Hamilton County rose 4.3 percent, to 860,652, with the revised Census projections. The Cincinnati population distribution remained consistent, with 53 percent White and nearly 43 percent African-American. By comparison, residents of Hamilton County were nearly 73 percent White and 23 percent African-American.

Various factors were identified by law enforcement as influences on drug trafficking and substance abuse in the Cincinnati region and State of Ohio. Ground travel is the predominant source of drugs to the city of Cincinnati and the State of Ohio, as many major thoroughfares pass through the State, making transport relatively

easy across the State line. Interstate-75 (I-75) is a direct route, running south to north, from the Florida border through four States, including Ohio, and terminating in Detroit, Michigan. Interstate-80/90 travels east to west across the top of Ohio and contributes to drug travel from Chicago and New York.

Cincinnati is within close proximity of the Northern Kentucky/Cincinnati International Airport to the south and the Dayton International Airport to the north, with a few smaller airports scattered throughout the region. There are 164 public use airports along with 661 privately owned/private use airports and heliports throughout the State. The region is also close to major package delivery centers where air transport of drugs in containers or packages contributes to the supply of imported drugs from Mexico. Canada has become a source for drug traffic into Ohio as well. Some drug travel through the ports of Lake Erie occurs as well, but this is a less common route of distribution than ground travel.

## Data Sources

The primary sources of data/information for this report are as follows:

- **Treatment data** were provided by the Hamilton County Mental Health and Recovery Services Board for fiscal years (FYs) 2005 through 2009 for publicly funded treatment programs within Hamilton County only. Primary drugs of use at admission were determined through billing data submitted by reporting agencies. Data are captured by group classification and not necessarily by specific drug type or route of administration. Data methodology capture, beginning in 2007, differed from previous reporting periods and does not provide for direct comparison to previous reports. Treatment data captured after 2007 may be compared with the current date.
- **Poison control center data** were provided by the Cincinnati Drug and Poison Information Center (DPIC) for calendar years (CYs) 2005 through 2009. Only human case data captured for purposes of illustration of drug



exposures were reported. DPIC provides a 24/7 telephone hotline for drug and poison information, as well as management and treatment information of hazardous or toxic exposures for the public, health care professionals, business, and government officials. The information obtained from DPIC includes exposures to illicit substances (e.g., heroin, cocaine, MDMA [3,4-methylenedioxymethamphetamine]), as well as prescription drugs used for purposes of intentional abuse or suicide. Data may also include intentional misuse or intentional use for unknown reason. All human exposure calls, regardless of exposure type, that referenced buprenorphine-containing pharmaceuticals were accessed for purposes of this report. Additional data regarding human exposures to buprenorphine-containing pharmaceuticals was obtained from the other Ohio poison control centers—the Central Ohio Poison Control Center and the Northern Ohio Poison Control Center—for CYs 2007–2009.

- **Ohio Automated Rx (Prescription) Reporting System (OARRS) data** provided by the Ohio State Board of Pharmacy prescription monitoring program for buprenorphine for CYs 2007–2009.
- **Crime laboratory drug analyses data** were derived from the National Forensic Laboratory Information System (NFLIS), Drug Enforcement Administration (DEA), and the Hamilton County Coroner’s Office for 2009.
- **Drug seizure data** were provided by the Cincinnati Regional Enforcement Narcotics Unit (RENU) for CYs 2006 through 2009.
- **Mortality data** were provided by the Hamilton County Coroner’s Office for CYs 2006 through 2009.
- **Drug purity and cost data** came from the DEA, Cincinnati Resident Office, National Drug Intelligence Center (NDIC), Greater Warren County Drug Task Force, and the Ohio Substance Abuse Monitoring Network (OSAM).

- **Human immunodeficiency virus (HIV) data** were provided for by the Ohio Department of Health for the years 1995–2008.
- **Methamphetamine laboratory seizure data** were provided by the Ohio Bureau of Criminal Investigation and Identification (BCI&I).
- **Qualitative data** came from focus group interviews conducted for the OSAM Project, funded by the Ohio Department of Alcohol and Drug Addiction Services, through a grant to Wright State University Center for Interventions Treatment and Addictions Research. Focus group interview data was provided through June 2009.

## DRUG ABUSE PATTERNS AND TRENDS

### Cocaine/Crack

Cocaine continued to be a serious problem in Cincinnati, but evidence of lower cocaine availability and use emerged during 2009. Primary cocaine admissions had been relatively stable for FYs 2005–2008, hovering between 17 to 19 percent of all treatment admissions. During FY 2009, however, the proportion of primary cocaine admissions dropped to 12.3 percent (673 admissions) of all treatment admissions (exhibit 1). Qualitative data indicated that new cocaine users were more likely to be young, some as young as 14. An increase in use of cocaine among females was also reported by focus group participants.

Poison control center data recorded a total of 76 cocaine (salt/crack) human exposure calls captured by the Cincinnati DPIC during 2009, a 25-percent drop from the previous year (exhibit 2). All of the cases involved intentional use of cocaine (salt/crack).

The Hamilton County Coroner’s Office recorded 36 deaths in which evidence of cocaine/crack use was documented by the Medical Examiner (ME) during 2009, a drop of nearly 30 percent from the previous year (exhibit 3). The number of deaths recorded where cocaine was detected in a

decedent steadily dropped by 20–30 percent each year since 2005. Deaths were recorded in one of three categories: accidental, suicide, or homicide. Evidence of cocaine was not necessarily related to manner of death.

The Cincinnati RENU removed more than 29,000 grams of cocaine from the streets of Cincinnati during 2009 (exhibit 4). RENU seized an average of 117,000 grams of cocaine from 2006 to 2008, so the amount of cocaine seized during 2009 dropped by 75 percent from those 3 years. Qualitative data also indicated decreased street availability of both powder and crack cocaine during 2009. The quality of available powder or crack cocaine was described as “poor,” having decreased during 2009 from the previous year. A high number of users reported that it was commonplace to “re-rock” crack cocaine after a purchase to remove as many impurities as possible.

Of the 12,497 drug items analyzed by NFLIS laboratories for Hamilton County in 2009, 32.8 percent were cocaine (exhibit 5). The number of items submitted for cocaine declined nearly 24 percent since 2007. Analysis of the purity of cocaine samples seized by the local DEA in 2009 showed that the purity of crack cocaine ranged between 39.4 and 77.5 percent, whereas the purity of cocaine hydrochloride (powder cocaine) ranged between 29.1 and 73.4 percent (exhibit 6). Impurities detected in the submitted items included benzocaine, tetramisole, diltiazem, sodium bicarbonate, and caffeine. Tetramisole (levamisole) was detected in 20 of 30 (67 percent) of items submitted during 2009.

The retail (street) price of powder cocaine increased from \$40 to \$70 per gram in 2008, to \$40–\$100 per gram in 2009 (exhibit 7). Mid-level prices for powder cocaine ranged from \$1,000 to \$1,200 per ounce, and wholesale prices ranged from \$22,000 to \$30,000 per kilogram. The retail prices of crack cocaine increased slightly to \$40–\$80 per gram in 2009, from \$30 to \$60 a gram in 2008. Mid-level prices for crack cocaine ranged from \$800 to \$1,000 per ounce.

## Heroin

Indicators for heroin abuse increased during 2009 from the previous year. Heroin and prescription opioid abuse accounted for 14.1 percent (775 admissions) of all primary treatment admissions during FY 2009 (exhibit 1). The frequency of heroin and opioid admissions to treatment has risen 3 percent since 2007, surpassing treatment admissions for cocaine. Qualitative data indicated a moderate availability of heroin during 2009. Mexican brown powder heroin was the most available form of heroin, but reports of availability of both Mexican black tar heroin and South American white powder heroin continued in the Cincinnati area.

Poison control center data showed that there were 106 heroin exposure calls related to intentional abuse reported during 2009, an increase of 52 percent over 2008, and a 231-percent increase since 2006 (exhibit 2). Overall, the ME data recorded 36 deaths during 2009 with evidence of heroin abuse as manner of death (exhibit 3). This number represented a 28-percent increase over the previous year and a 300-percent increase since 2007. All of the deaths were ruled accidental in nature by the ME.

The RENU seized more than 3,000 grams of heroin during 2009, a 37-percent decrease from the previous year (exhibit 8). Qualitative data indicated that a shift in the heroin market may have contributed to heroin availability, as young dealers shifted from dealing cocaine/crack to heroin.

Heroin accounted for 10.91 percent of the items analyzed by NFLIS in 2009, an increase of 4.17 percent from the previous year (exhibit 5). The purity of heroin varied greatly, ranging from 24.6 to 94.3 during 2009 (exhibit 6). Heroin could be purchased at the street level for \$80–\$170 per gram for Mexican brown powder (exhibit 7). Mid-level prices for heroin ranged from \$1,000 to \$4,000 per ounce for Mexican brown powder heroin. Wholesale prices for a kilogram of heroin were reported to range from \$35,000 to \$70,000.

## Other Opiates/Opioids

Primary admissions in FY 2009 for prescription opioid abuse were not separated from heroin users

and accounted for 14.1 percent (775 admissions) of total admissions in which a drug was defined (exhibit 1). Qualitative data indicated availability of pharmaceutical opioids at a moderately high but stable level. While most opioids are ingested, according to users, OxyContin® and immediate-release oxycodone products were the most likely opioid pharmaceuticals to be crushed and insufflated or injected.

Poison control center data showed that hydrocodone and oxycodone pharmaceutical products were more likely to be abused than other opiates/opioids available (exhibit 9). There were a total of 275 exposure calls for intentional abuse, including suicide, of oxycodone products during CY 2009, representing a 28-percent decrease over exposure calls recorded in 2008. The number of hydrocodone combination narcotic exposures in 2009 for intentional abuse, including suicide, totaled 321, representing a nearly 24-percent decrease from 2008. The number of intentional methadone cases recorded during 2009 was 64, a decrease of 7 percent from the previous year.

Among the drugs analyzed by NFLIS in 2009, oxycodone accounted for 3.2 percent of the total items, hydrocodone represented nearly 1.7 percent of all items, and other opiates/opioids accounted for 1.2 percent of the top 25 items submitted for analysis (exhibit 5).

The Hamilton County Coroner's Office recorded 94 deaths during 2009 that had evidence of prescription opioid use on the part of the decedent, representing a drop of nearly 8 percent from the previous year (exhibit 3). Not included with these pharmaceutical opioid deaths were 11 deaths specifically attributed to methadone and 18 to fentanyl (exhibit 10).

Qualitative data demonstrated that the OxyContin® branded product (oxycodone) continued to lead other opioids in both desirability and availability with regard to diversion of pharmaceutical products to the street. In 2009, OxyContin® sold on the streets of Cincinnati for \$60–\$80 for 80 milligrams and \$30–\$40 for 40 milligrams (exhibit 7). Overall prices ranged from \$0.75 to \$1.00 per milligram of oxycodone.

## **Methamphetamine/Amphetamines**

Methamphetamine abuse indicators in the Cincinnati area and State of Ohio remained low but showed a slight increase in 2009 over the previous year. Of the primary illicit drug admissions in FY 2009, methamphetamine/amphetamines (including MDMA) accounted for only 0.2 percent (11 admissions) of all admissions (exhibit 11). Poison control data showed a total of 15 intentional abuse exposures, including suicide, to methamphetamine reported in 2009.

Methamphetamine items analyzed by NFLIS in 2009 totaled 85, accounting for only 0.68 percent of the total drug items recorded (exhibit 5). In 2009, the retail price for methamphetamine was \$80–\$100 per gram for locally-produced powder methamphetamine. Mid-level prices for methamphetamine were unavailable (exhibit 7).

The numbers of methamphetamine incidents involving laboratories, dumpsites, and chemical/glass findings throughout Ohio increased in 2009 to 348, a 75-percent increase over the previous year (exhibit 11). Methamphetamine items submitted for DEA analysis during 2009 revealed an average purity of 46.1 percent. MSM (dimethylsulfone) was found as an impurity in each of the analyzed samples during years 2007 through 2009 (exhibit 6).

## **Marijuana**

Marijuana continued to be a primary drug problem in the Cincinnati region in 2009, reported as both widely available and widely used. Marijuana accounted for 28 percent (1,532 admissions) of the treatment admissions in FY 2009 (exhibit 1). Poison control center data revealed 52 human exposure cases involving intentional abuse of marijuana, including suicide, reported in 2009 (exhibit 2).

Marijuana/cannabis was the most frequently reported drug by NFLIS, representing 42.3 percent of the total drug items analyzed in 2009 (exhibit 5). The Cincinnati RENU recorded seizures of more than 724 kilograms of marijuana during 2009 (exhibit 13).

Retail prices for high-grade marijuana were \$20–\$60 per gram (exhibit 7). The mid-level price for high quality “BC bud” mix marijuana from Mexican sources was \$275–\$400 per ounce. The wholesale price for marijuana from Mexican sources was \$1,200–\$1,500 per pound.

### **Benzodiazepines**

Primary treatment admissions for benzodiazepines accounted for 0.4 percent (22 admissions) of all admissions for FY 2009 (exhibit 12). Benzodiazepines analyzed by NFLIS totaled nearly 2.64 percent of the total items submitted for analysis (exhibit 5). The Hamilton County Coroner’s Office recorded 7 cases in which tranquilizers were found in decedents in 2009 (exhibit 10). Poison control center data showed 1,089 intentional human exposure cases reported with benzodiazepine use in 2009; nearly 33 percent involved alprazolam, and another 31.6 percent involved clonazepam.

### **MDMA**

Indicators for MDMA abuse decreased slightly in the Cincinnati region during 2009. Primary treatment admissions for stimulants, including MDMA, methamphetamine, and amphetamines, for FY 2009 accounted for nearly 0.2 percent (11 admissions) of the total admissions (exhibit 11).

Qualitative data indicated that MDMA availability remained at a moderate level during 2009. Poison control center data showed a total of 17 intentional abuse exposures to MDMA for 2009, a 55-percent decrease over 2008.

Of the NFLIS items analyzed in 2009, there were 167 MDMA items, accounting for 1.34 percent of the items submitted and analyzed. BZP (1-benzylpiperazine), a piperazine derivative sold as MDMA in the United States, accounted for 156 items submitted to NFLIS for analysis and 1.25 percent of the total number of items submitted (exhibit 5). MDMA sold at mid-level prices of \$600 per 100 tablets and at the retail level for \$10–\$30 for a single tablet (exhibit 7)

### **Emerging Patterns**

Patterns of use of buprenorphine-containing pharmaceuticals began to become more evident in 2009. NFLIS recorded 24 items submitted to the DEA for analysis (exhibit 5).

Human exposure data collected from all three Ohio poison control centers revealed a total number of 215 cases reported in 2009, a 76-percent increase over the previous year (exhibit 14), and an increase of 325 percent over 2007. Drug identification calls to a PCC act as a qualitative measure of diversion of a pharmaceutical drug to the street. In 2009, 321 identification calls were received by the DPIC for buprenorphine-containing pharmaceuticals, an 11-percent increase from the previous year. The Ohio prescription monitoring program recorded 1,683 prescriptions per 100,000 Ohio residents dispensed during 2009, an increase of nearly 300 percent since 2007. Buprenorphine remains an area for increased education about storage practices as a majority of the human exposures reported to PCC’s in Ohio involved children younger than 3.

### **HIV**

HIV infection reported in the State of Ohio occurred more often from men who have sex with men (MSM) than from other modes of transmission (exhibit 15). Only 4.4 percent of the transmission of HIV in the State of Ohio in 2008 was reported through intravenous drug use. By contrast, data from Hamilton County in 2008 showed that approximately 7 percent of the cases reported involved intravenous drug use transmission (exhibit 16).

### **ACKNOWLEDGMENTS**

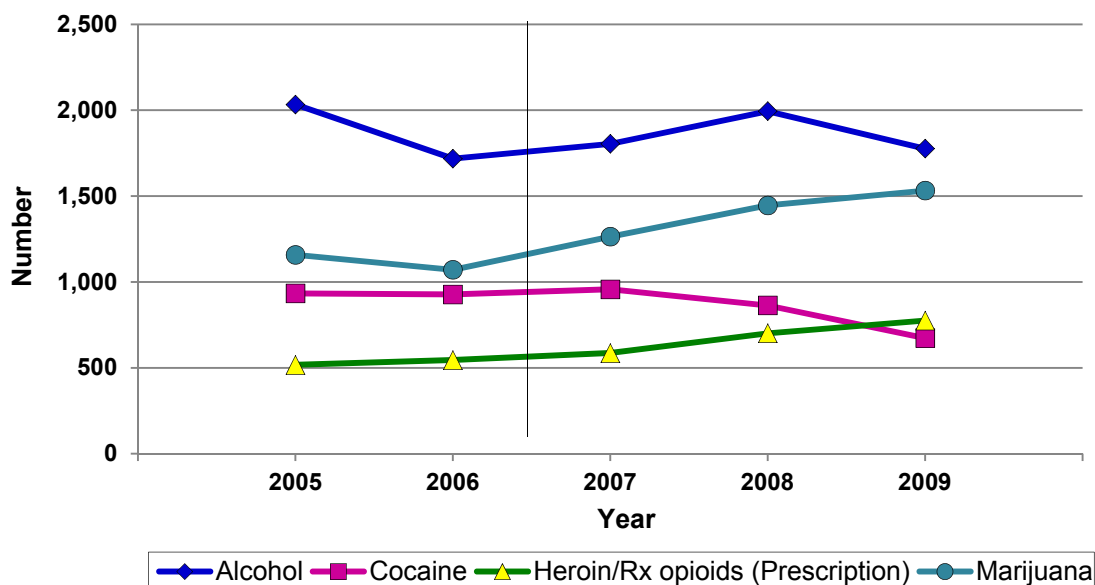
The author would like to thank those individuals and agencies that contribute alcohol- and drug-related data, statistics, and information that are used to form these reports. Cincinnati’s contribution to the Community Epidemiology Work Group would be vastly limited without the cooperation of local, State, and Federal agencies. In

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**Exhibit 1. Number of Primary Treatment Admissions, by Primary Drug of Abuse, for Four Drugs, in Hamilton County: FYs 2005–2009**

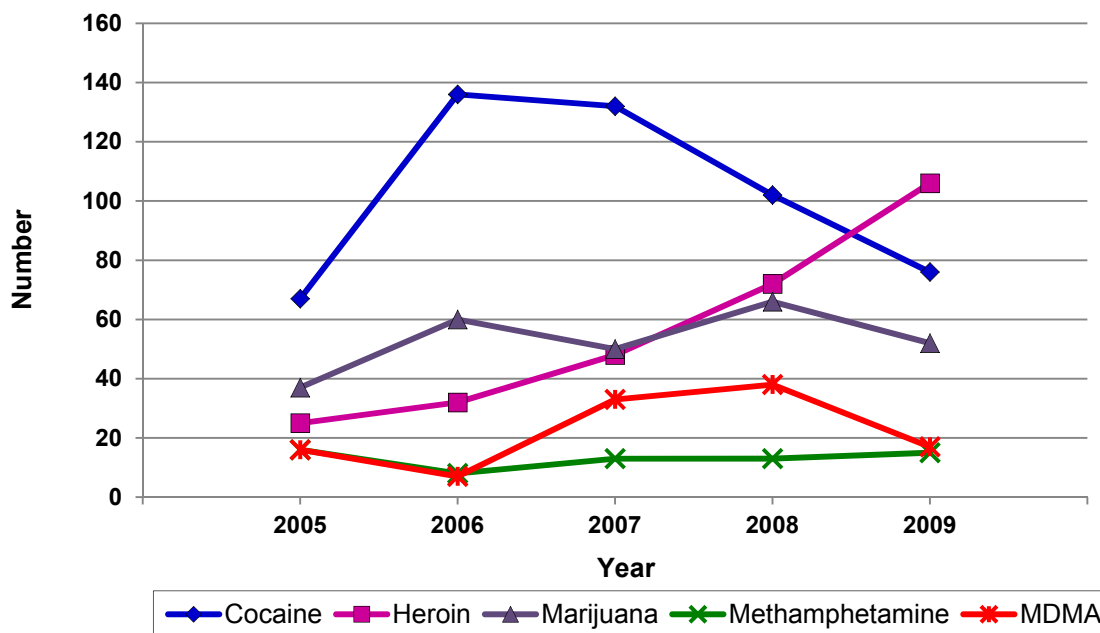


FY=July to June.

Treatment data methodology from 2007 to 2009 differed from the previous reporting periods shown; therefore, direct comparison to years prior to 2007 cannot be made.

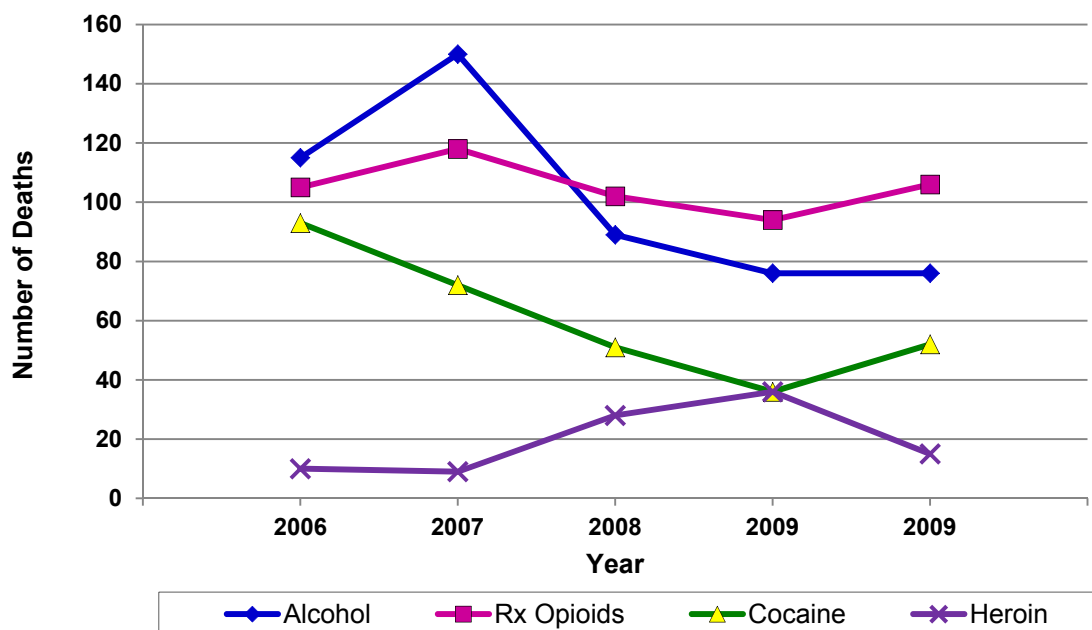
SOURCE: Hamilton County Mental Health and Recovery Services Board

**Exhibit 2. Number of Human Exposure Cases for Select Drugs, Cincinnati: 2005–2009**



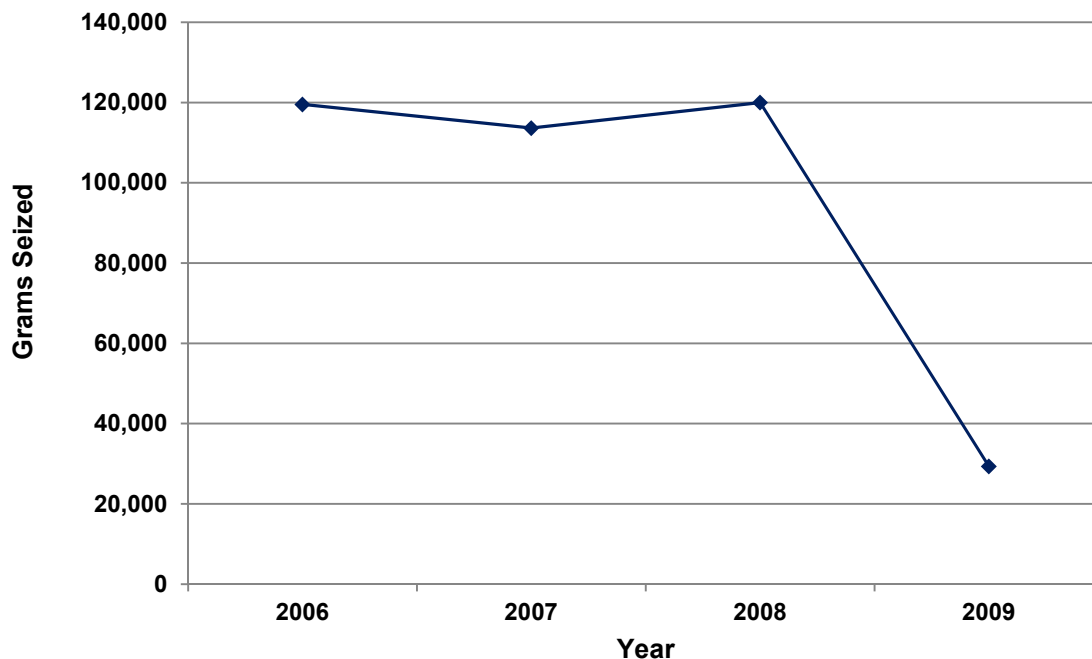
SOURCE: Cincinnati Drug and Poison Information Center

**Exhibit 3. Number of Deaths, by Drugs Detected at Death, in Hamilton County: 2006–2009**



SOURCE: Hamilton County Coroner's Office

**Exhibit 4. Seizures of Cocaine, in Grams, Cincinnati: 2006–2009**



SOURCE: Cincinnati Regional Enforcement Narcotics Unit

**Exhibit 5. Number and Percentage of Total Items Identified for Selected Drugs Analyzed by Forensic Laboratories, Hamilton County: 2007–2009**

Drug	2007 <sup>1</sup> Number	2007 Percent of Total Items	2008 <sup>2</sup> Number	2008 Percent of Total Items	2009 <sup>3</sup> Number	2009 Percent of Total Items
Cocaine	6,573	43.10	5,084	38.66	4,100	32.81
Cannabis	6,393	41.92	5,814	44.21	5,281	42.26
Heroin	748	4.90	886	6.74	1,364	10.91
Oxycodone	320	2.10	272	2.07	404	3.23
Methamphetamine	73	0.48	57	0.43	85	0.68
Hydrocodone	240	1.57	197	1.50	211	1.69
Other Opiates/Opioids	121 <sup>4</sup>	0.79	87 <sup>5</sup>	0.66	150 <sup>6</sup>	1.20
Benzodiazepines	294 <sup>7</sup>	1.93	236 <sup>8</sup>	1.79	330 <sup>9</sup>	2.64
MDMA	192	1.26	194	1.48	167	1.34
Amphetamines	39	0.26	30	0.23	46	0.37
BZP (1-Benzylpiperazine)	---	---	---	---	156	1.25

<sup>1</sup>Total Items analyzed in 2007=15,252.

<sup>2</sup>Total Items analyzed in 2008=13,151.

<sup>3</sup>Total Items analyzed in 2009=12,497.

<sup>4</sup>Includes methadone (63), morphine (33), propoxyphene (10), and codeine (8).

<sup>5</sup>Includes methadone (47), morphine (19), dextropropoxyphene (13), and codeine (13).

<sup>6</sup>Includes methadone (55), morphine (41), buprenorphine (24), codeine (14), hydromorphone (10), dextropropoxyphene (3), and oxymorphone (3).

<sup>7</sup>Includes alprazolam (129), diazepam (88), clonazepam (64), and lorazepam (13).

<sup>8</sup>Includes alprazolam (100), diazepam (61), clonazepam (59), and lorazepam (16).

<sup>9</sup>Includes alprazolam (168), clonazepam (83), diazepam (69), lorazepam (9), and chlordiazepoxide (1).

SOURCE: NFLIS, DEA

**Exhibit 6. Purity Analysis of Drug Seizures, Cincinnati: 2006–2009**

Drug	2006 <sup>1</sup>	2007 <sup>1</sup>	2008 <sup>1</sup>	2009
Powder Cocaine	80.5% <sup>2</sup>	57.5%	45.8% <sup>3</sup>	29.1–73.4% <sup>4</sup>
Crack Cocaine	80.5% <sup>2</sup>	77.0%	39.2% <sup>3</sup>	39.4–77.5% <sup>4</sup>
Heroin	68.0%	68.0%	---	24.6–94.3% <sup>4</sup>
Methamphetamine	---	56.3% <sup>5</sup>	49.3% <sup>5</sup>	46.1% <sup>5</sup>

<sup>1</sup>Purity analysis represented by an average percent of all submitted items.

<sup>2</sup>Purity analysis for powder and crack cocaine not delineated in reported data.

<sup>3</sup>Impurities detected; benzocaine, tetramisole, diltiazem, sodium bicarbonate, caffeine.

<sup>4</sup>Purity analysis represented by range of purities analyzed for all items submitted.

<sup>5</sup>Impurities detected; dimethylsulfone (MSM).

SOURCE: Cincinnati Resident Office, DEA



**Exhibit 7. Prices for Selected Drugs<sup>1</sup>, by Distribution Level and Quantity<sup>2</sup>, Cincinnati Area: 2009**

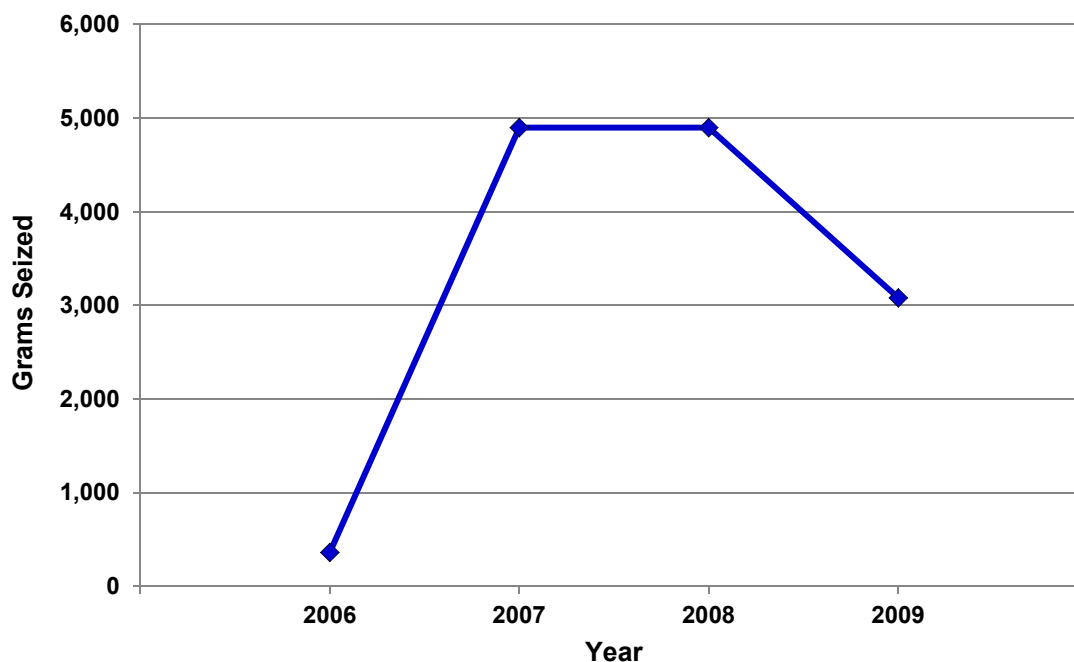
Drug	Wholesale	Mid-level	Retail
Powder Cocaine	\$22,000–\$30,000/kg.	\$1,000–\$1,200/oz.	\$100/g. \$40–\$100/g. <sup>3</sup>
Crack Cocaine	-----	\$800–\$1,000/oz.	\$20–\$50/rock \$40–\$80/g.
Heroin	\$35,000–\$70,000/kg.	\$1,000–\$4,000/oz.	\$20/0.1g MBP \$100–\$170/g MBP \$80–\$130/g.MBP <sup>3</sup>
Marijuana	\$1,200–\$1,500/lb. MX \$5,000 (high quality indoor grown)	\$275–\$400/oz. (high quality BC Bud MX)	High Grade: \$20–\$60/g.
Methamphetamine	-----	-----	\$80–\$100/g.LP <sup>3</sup>
MDMA	-----	\$600/100 tablets	\$10–\$30/tablet <sup>3</sup>
Oxycodone	-----	-----	\$60–\$80/80mg. <sup>3</sup> \$30–\$40/40mg. <sup>3</sup>

<sup>1</sup>Key: MX=Mexican; LP=Locally Produced; MBP=Mexican Brown Powder, BC=British Columbian.

<sup>2</sup>kg=kilogram; lb=pound; oz=ounce; g=gram; mg=milligram.

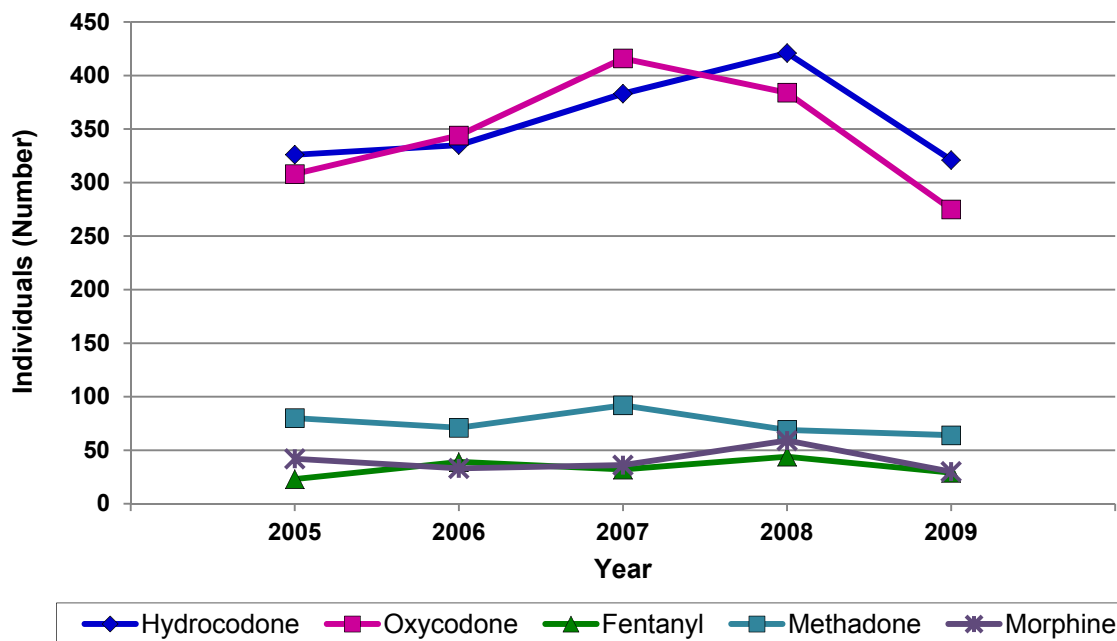
<sup>3</sup>Ohio Substance Abuse Monitoring Network (OSAM)

SOURCES: NDIC, DEA, Warren-Clinton County Drug Task Force

**Exhibit 8. Seizures of Heroin, in Grams, Cincinnati: 2006–2009**

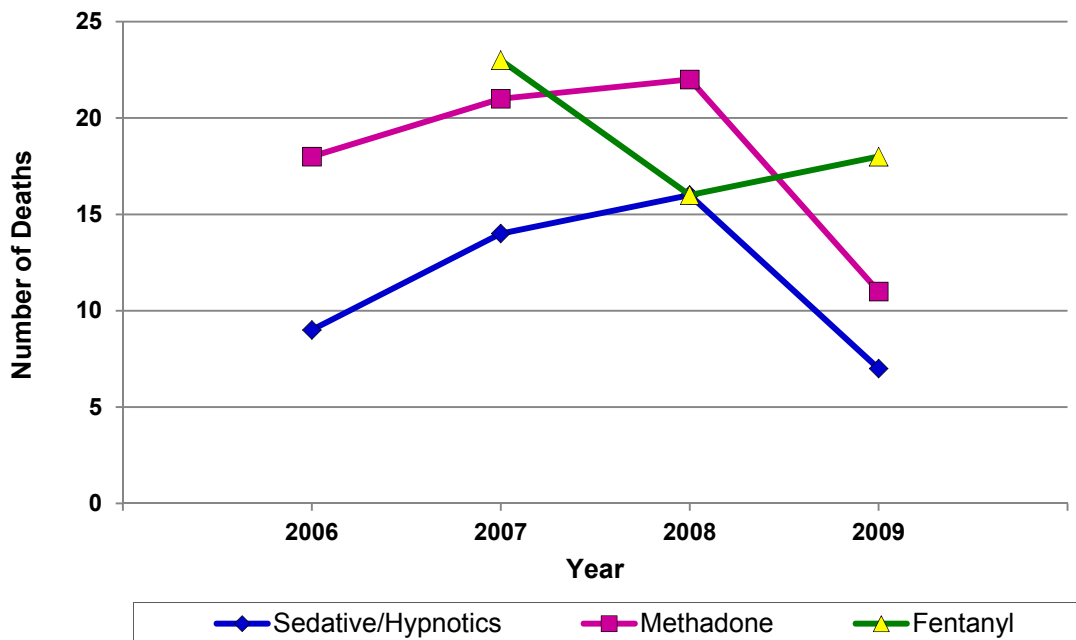
SOURCE: Regional Enforcement Narcotics Unit

**Exhibit 9. Number of Human Exposure Cases, for Select Drugs, Cincinnati: 2005–2009**

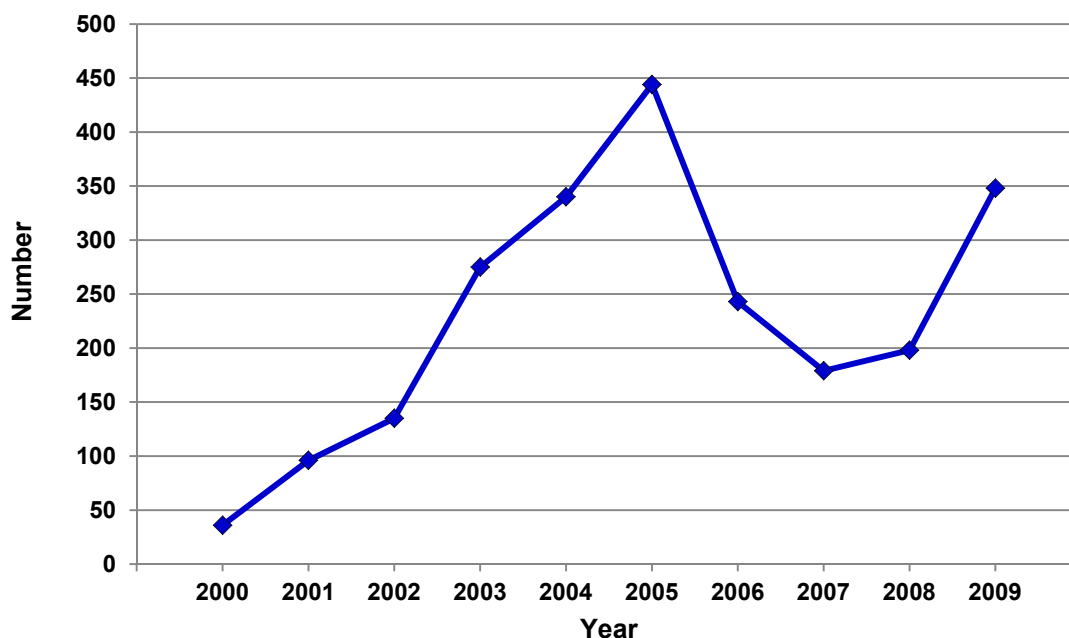


SOURCE: Cincinnati Drug and Poison Information Center

**Exhibit 10. Number of Deaths, by Drugs Detected at Death, in Hamilton County: 2006–2009**



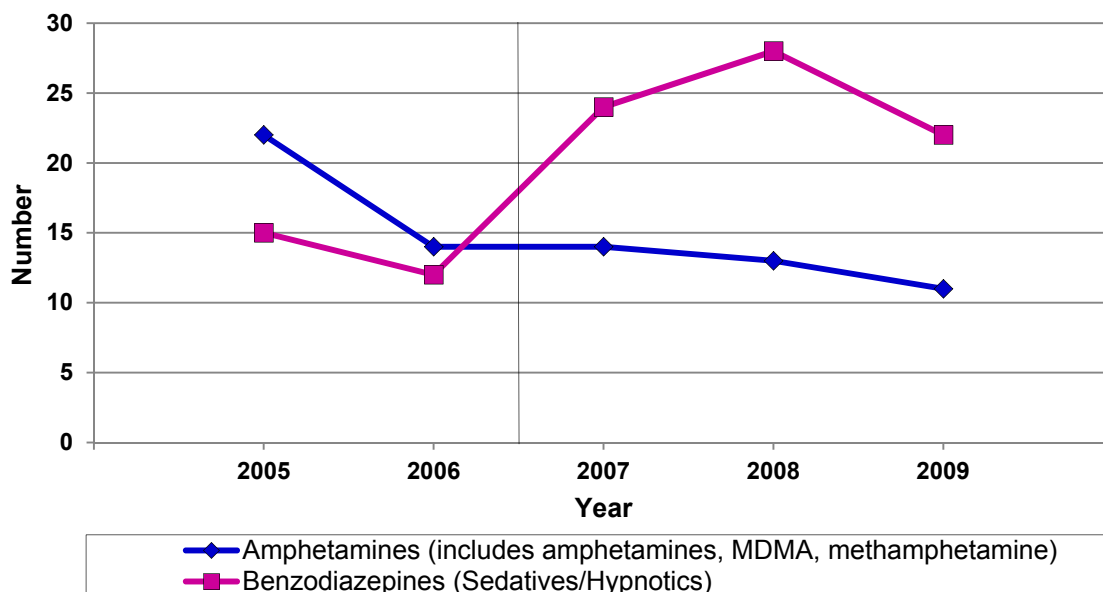
SOURCE: Hamilton County Coroner's Office

**Exhibit 11. Number of Methamphetamine Sites , Ohio: FYs 2000–2009**

Includes laboratories, dumpsites, and chemical/glass/equipment findings.

FY=July to June.

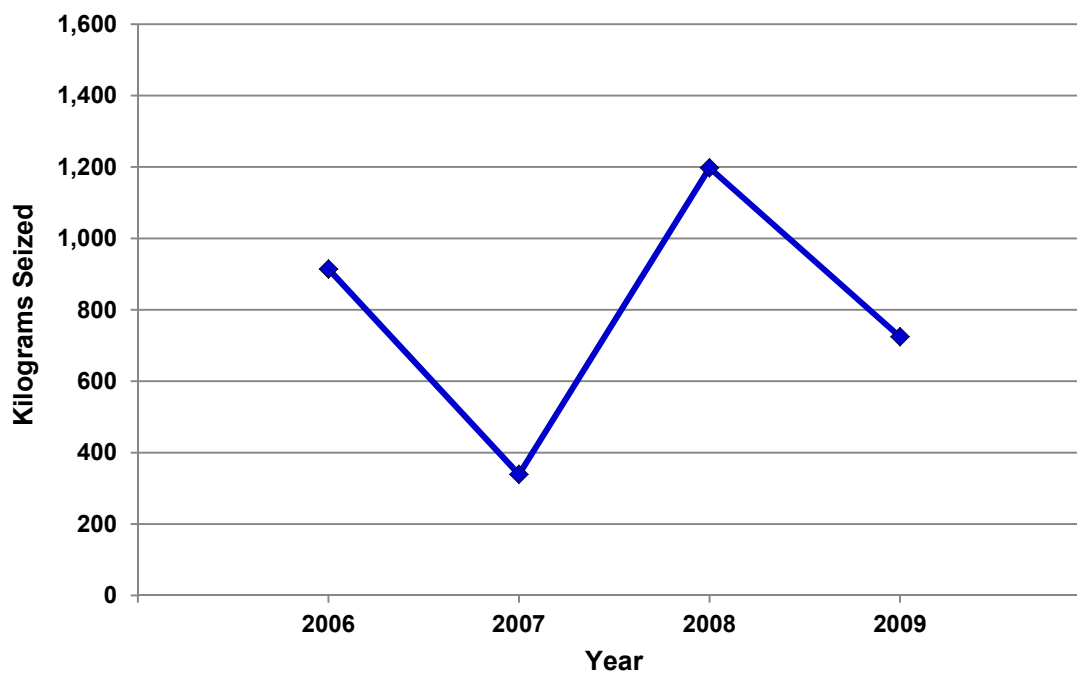
SOURCE: Ohio Bureau of Criminal Identification and Investigation

**Exhibit 12. Number of Primary Treatment Admissions for Amphetamines and Benzodiazepines, by Primary Drug of Abuse, in Hamilton County: FYs 2005–2009**

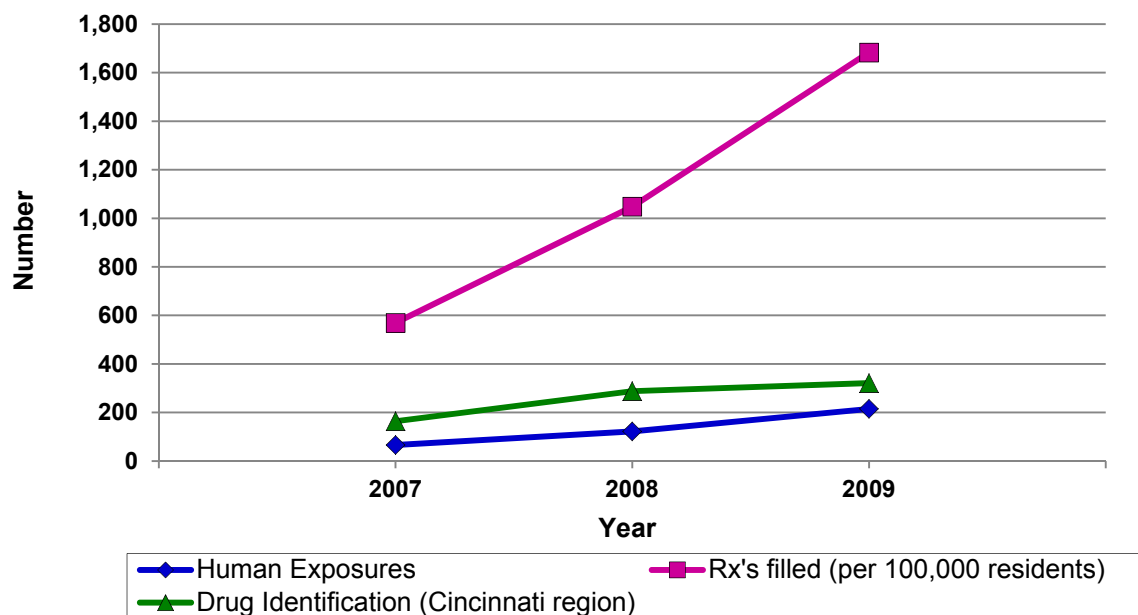
FY=July to June.

Treatment data methodology from 2007 to 2009 differed from the previous reporting periods shown; therefore, direct comparison to years prior to 2007 cannot be made.

SOURCE: Hamilton County Mental Health and Recovery Services Board

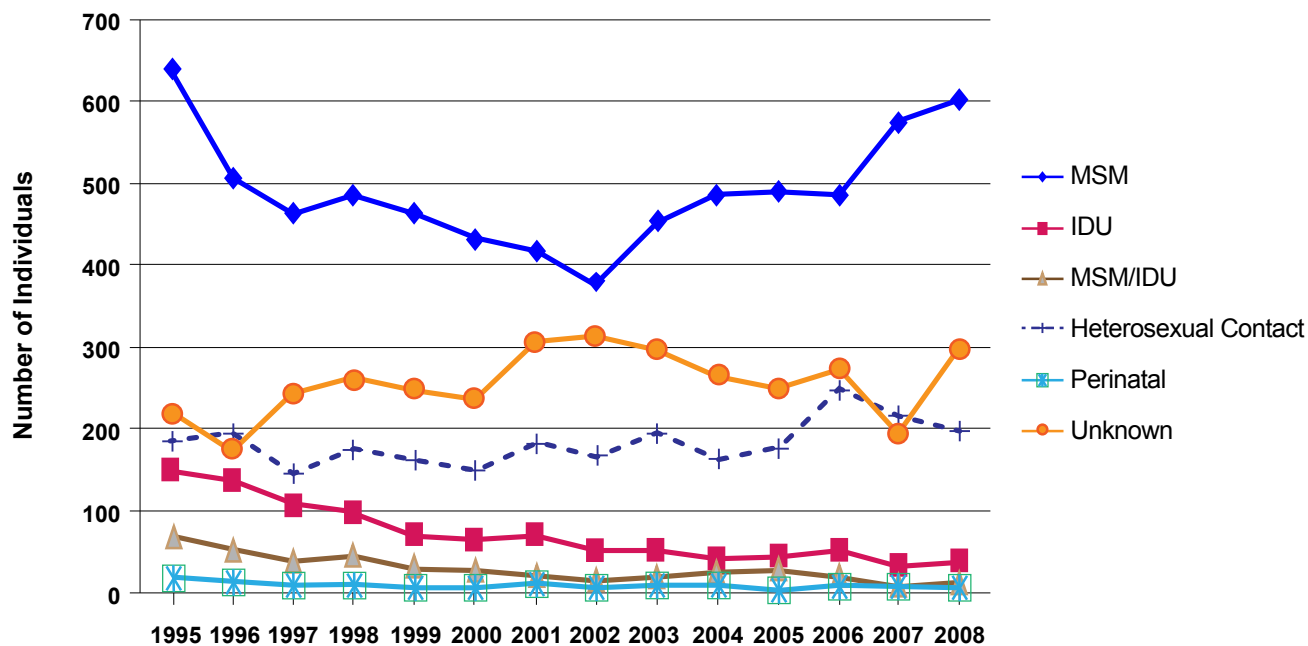
**Exhibit 13. Seizures of Marijuana, in Kilograms, Cincinnati: 2006–2009**

SOURCE: Cincinnati Regional Enforcement Narcotics Unit

**Exhibit 14. Number of Human Exposures, Prescriptions (Rx's) Filled, and Drugs Identified as Buprenorphine by Poison Control Centers, Cincinnati and Ohio: 2007–2009**

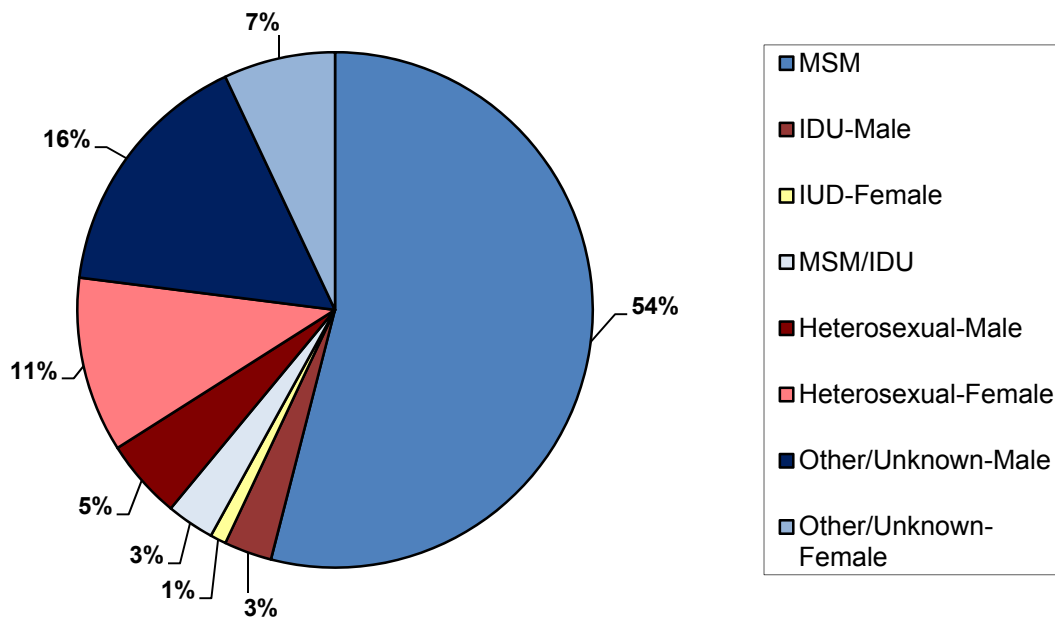
SOURCES: Ohio State Board of Pharmacy, Central Ohio Poison Control Center, Northern Ohio Poison Control Center, and Cincinnati Drug and Poison Information Center

Exhibit 15. Number of Individuals, by HIV Mode of Transmission, Ohio: 1995–2008



Note: MSM=men who have sex with men; IDU= injection drug user.  
SOURCE: Ohio Department of Health

Exhibit 16. Percentage of HIV Mode of Transmission, by Gender, Hamilton County: 2008



Note: MSM=men who have sex with men; IDU= injection drug user.  
SOURCE: Ohio Department of Health

# Patterns and Trends in Drug Abuse in Denver and Colorado: 2009

Kristen A. Dixon, M.A., L.P.C.<sup>†</sup>

## ABSTRACT

*Excluding alcohol, marijuana abuse has continued to result in the highest number of treatment admissions in Denver and statewide in Colorado annually since 2000. After decreasing from 40 to 35 percent from 2002 to 2007, statewide marijuana treatment admissions increased to 37 percent in 2009. Likewise, after declining from 39 percent in 2004 to 37 percent in 2007, Denver/Boulder metropolitan area (greater Denver) marijuana treatment admissions increased to 38 percent in 2009. Notable increases were also realized in the rate of marijuana hospital discharges in Denver from 2000 (140 per 100,000 population) to 2009 (223 per 100,000) and in the rate of Denver area emergency department (ED) visits from 2004 (50 per 100,000) to 2008 (151 per 100,000). In the Denver area samples, marijuana/cannabis ranked second, at 26 percent, of the drugs analyzed in 2009 in the National Forensic Laboratory Information System (NFLIS). All marijuana indicators were either stable or increasing, with the exception of slightly fewer Rocky Mountain Poison and Drug Center (RMPDC) calls in 2009. In 2009, cocaine ranked third in statewide and Denver metropolitan treatment admissions, but admissions for both areas decreased from 2008. Cocaine has accounted for the highest number and rate of illicit drug hospital discharges in Denver since 2000 and for the highest number and proportion of Denver area illicit drug ED reports since 2005. Although both indicators are ranked first, they both realized decreases in 2009. Also, despite a declining trend, cocaine accounted for*

*the highest drug-related mortality percentage (of total drug-related mortality cases) in Denver from 2003 through 2009. Cocaine had the highest number of statewide illicit drug-related calls to the RMPDC each year from 2004 through 2009, except for 2005. In the Denver area samples, cocaine ranked first at 35 percent of the drugs analyzed in 2009 in the NFLIS laboratory system. However, despite the high ranking in virtually all the indicators, cocaine trends were mostly downward. Methamphetamine exceeded cocaine in statewide treatment admissions since 2003, and it was more common than all but marijuana among drug admissions in the Denver/Boulder area during 2005 and again in 2009. The proportion of statewide methamphetamine admissions has been on a steady decline since 2005, and Denver area admissions have realized slight decreases since 2007. Most other methamphetamine indicators have shown a downward trend from 2005 through 2009. The Denver area rate of methamphetamine ED visits reached its peak in 2005 (76 per 100,000) and steadily declined to 35.5 per 100,000 in 2008. Similarly, the Denver rate of stimulant hospital discharges (which are predominantly methamphetamine) increased from 2000 (44 per 100,000) to 2005 (129 per 100,000) but then steadily decreased through 2008 (60 per 100,000). However, the Denver rate of stimulant hospital discharges increased slightly in 2009 (66 per 100,000). Methamphetamine items seized and identified have declined overall from 2006 (50 kilograms) to 2008 (26 kilograms), while clandestine methamphetamine laboratory closures have decreased steadily since 2003. Moreover, law enforcement crackdowns have also limited methamphetamine coming into Colorado from outside the State, predominantly Mexico. While the statewide and Denver area proportions of heroin treatment admissions declined steadily from 2001 through 2008, both statewide and Denver area proportions increased in 2009. The rate of Denver area heroin ED visits increased from 2004 (33 per 100,000) to 2007 (53 per 100,000) and remained stable in 2009. Denver heroin mortality was a significant percentage*

<sup>†</sup>The author is affiliated with the State of Colorado, Division of Behavioral Health.

*of total Denver drug mortality from 2003 through 2009. Overall, heroin trends were mostly upward or stable. Both statewide and Denver area other opioid treatment admissions increased from 2001 through 2009. Likewise, the rate of Denver other opioid hospital discharges has steadily increased, along with the proportion of other opioids among Denver drug mortality cases. Other opioid trends were mostly upward. While not significant among statewide or Denver area treatment admissions, benzodiazepine ED visits and mortality cases in Denver have increased from 2003 through 2008 and 2009, respectively. Beyond abuse of illicit drugs, alcohol remained Colorado's most frequently abused substance and accounted for the most treatment admissions, ED data, poison center calls, drug-related hospital discharges, and drug-related deaths.*

## INTRODUCTION

### Area Description

Denver, the capital of Colorado, is located slightly northeast of the State's geographic center. Covering only 154.6 square miles, Denver is bordered by several suburban counties: Arapahoe on the southeast; Adams on the northeast; Jefferson on the west; Broomfield on the northwest; and Douglas on the south. These areas made up the Denver Metropolitan Statistical Area (MSA) through 2004, which accounted for 50 percent of the State's total population.

For this report, both statewide data and data for the Denver/Boulder metropolitan area were analyzed; the latter includes the counties of Denver, Boulder, Adams, Arapahoe, Broomfield, Clear Creek, Douglas, Gilpin, and Jefferson and accounts for 56 percent of the total State population (2,850,631 out of 5,109,700; 2009 estimates).

Excluding Gilpin and Clear Creek Counties (which are usually left out of Denver metropolitan area statistics), the median age of residents in the Denver area is 35.5. Males constitute 50.7 percent and females 49.3 percent of the population. Ethnic and racial characteristics of the area are as follows: Whites, 71 percent; African-Americans,

11 percent; Native American Indians, 1 percent; Asians, 3 percent; and Native Hawaiian and Other Pacific Islanders, less than 1 percent. Hispanics or Latinos of any race represent 35 percent of the area's population.

Two major interstate highways, I-25 and I-70, intersect in Denver. I-25 runs north-south from Wyoming through New Mexico, and I-70 runs east-west from Maryland through Utah. The easy transit across multiple States facilitated by these highways, along with the following other factors, may influence drug use in Denver and Colorado:

The area's major international airport is nearly at the Nation's midpoint.

- The area has a growing population and expanding economic opportunities.
- A large tourism industry draws millions of people to Colorado each year.
- Remote, rural areas are ideal for the undetected manufacture, cultivation, and transport of illicit drugs.
- Several major universities and small colleges are located in the area.
- A young citizenry is drawn to the recreational lifestyle available in Colorado.

### Data Sources

The data sources used in this report are listed below:

- **Treatment data** were provided by the Drug/Alcohol Coordinated Data System (DACODS), which is maintained by the Division of Behavioral Health (DBH) at the Colorado Department of Human Services. Data for this system are collected on clients at admission and discharge from all Colorado alcohol and drug treatment agencies licensed by DBH. Treatment admissions are reported by the primary drug of use (as reported by the client at admission), unless otherwise specified. Annual figures are given for calendar years (CYs) 2001 through 2009.

- **Drug-related emergency department (ED) data** for the Denver metropolitan area were provided by the Office of Applied Studies (OAS), Substance Abuse and Mental Health Services Administration (SAMHSA), through its Drug Abuse Warning Network (DAWN). DAWN *Live!* data includes unweighted data (i.e., proportions only) for January through June 2009. Eligible hospitals in the Denver metropolitan area totaled 15; there were 15 EDs in the DAWN sample. During this time period between 11 and 12 EDs reported data each month. The unweighted data were accessed on and reflect cases received by DAWN as of December 10, 2009, and are subject to change in future OAS quality reviews. Because these data were unweighted, they cannot be used as estimates of the reporting area. Only weighted DAWN data released by SAMHSA can be used for trend analysis. To that end, weighted ED trends (i.e., rates per 100,000) for selected drugs from 2004 through 2008 were prepared by OAS and are included in this report. Because a patient may report more than one drug, the number of drug reports may exceed the number of cases. A full description of the DAWN system can be found at <http://dawninfo.samhsa.gov>. This is the most recent data available at the time of the report.
- **Drug-related mortality data** for the city and county of Denver for CYs 2005 through 2009 came from the Denver Office of the Medical Examiner, courtesy of the Office of Drug Strategy.
- **Hospital discharge data** for the Denver metropolitan area for 2001–2009 were provided by the Colorado Hospital Association, courtesy of the Office of Drug Strategy. Data included diagnoses (ICD-9-CM codes) for inpatient clients at discharge from all acute care hospitals and some rehabilitation and psychiatric hospitals. These data exclude ED care.
- **Rocky Mountain Poison and Drug Center (RMPDC) data** are presented for Colorado. The data represent the number of calls (human exposure only) to the center regarding “street drugs” from 2005 through 2009.
- **National Forensic Laboratory Information System (NFLIS) data** are presented for Denver, Jefferson, and Arapahoe Counties for CY 2009. NFLIS is a Drug Enforcement Administration (DEA) program through the Office of Diversion Control that systematically collects drug identification results and associated information from drug cases analyzed by Federal, State, and local forensic laboratories.
- **Statistics on seized drug items** were obtained from *Colorado Fact Sheet Reports* published by the DEA. The March 2008 fact sheet provided the most recent data available at the time of this report.
- **Statistics on prescriptions filled for Denver residents** by drug type, from the third quarter 2007 through the fourth quarter 2009, were obtained from the Colorado Prescription Drug Monitoring Program (PDMP), Colorado Department of Regulatory Agencies, Division of Registrations, Board of Pharmacy.
- **Availability and price data** were obtained from the February 2010 National Drug Intelligence Center’s report, *National Illicit Drug Prices, Mid-Year Report 2009*.
- **Intelligence data and qualitative data** were obtained from the Denver Epidemiology Work Group (DEWG), whose membership includes clinicians, outreach workers, researchers, medical examiner’s office staff, public health, and regional and local law enforcement officials (exhibit 1).
- **Acquired immunodeficiency syndrome (AIDS) data and human immunodeficiency virus (HIV) data** were obtained from the Colorado Department of Public Health and Environment (CDPHE) and are presented from 2001 through December 2009.
- **Population statistics** were obtained from the Metropolitan Denver Economic Development Corporation, Colorado Demography Office, Census 2000, including estimates and projections, and [factfinder.census.gov](http://factfinder.census.gov).



## DRUG ABUSE PATTERNS AND TRENDS

### Cocaine

Of the five major drugs—cocaine, heroin, marijuana, methamphetamine, and other opioids—cocaine ranked third in both statewide and Denver metropolitan area treatment admissions, first in statewide calls to the RMPDC, first in the proportion of Denver metropolitan area ED reports, first in Denver County mortality cases and hospital discharges, and first in drug samples analyzed in Denver metropolitan area crime laboratories. However, despite the high ranking in virtually all of the indicators, cocaine trends were mostly downward.

During 2009, cocaine was reported as a primary drug in 16.2 percent of treatment admissions (excluding alcohol) statewide; this reflects a 10-year low (exhibit 2). Cocaine admissions statewide dropped 20 percent from 2008 to 2009. Since 2000, cocaine constituted 16.2–21.1 percent of statewide admissions each year, and through 2002, the drug was second to marijuana in volume of treatment admissions. Since 2003, methamphetamine admissions have exceeded cocaine admissions.

In the Denver metropolitan area, cocaine was reported in 18.1 percent of treatment admissions (excluding alcohol) during 2009 (exhibit 3). While cocaine surpassed methamphetamine in treatment admissions in 2002, methamphetamine admissions slightly exceeded cocaine admissions in 2005; cocaine surpassed methamphetamine again in 2006, 2007, and 2008. In 2009, cocaine admissions fell slightly below methamphetamine admissions in the Denver area.

Statewide, the proportion of male cocaine admissions rose from 55.4 percent in 2000 to 61.5 percent in 2004, and they declined to 58.5 percent in 2009 (exhibit 4). Likewise, in the Denver metropolitan area, the proportion of male cocaine admissions increased from 50.8 percent in 2000 to 62.9 percent in 2004, and they then declined to 59.0 percent in 2009 (exhibit 5).

Historically, Whites have accounted for the largest proportion of cocaine admissions statewide (43.5 percent overall in 2000–2009). However,

the proportion of Hispanics/Latinos, which constituted 32.3 percent of admissions overall, has been mostly on an upward trend, from 27.4 percent in 2001 to 35.0 percent in 2009. Likewise, in Denver, the proportion of Hispanics/Latinos among cocaine admissions increased almost steadily from 23.0 percent in 2000 to 32.2 percent in 2007. In 2009, Hispanic/Latinos represented 30.3 percent of Denver area cocaine admissions. From 2008 to 2009, the proportion of African-American treatment admissions increased from 18.4 to 22.1 percent statewide and from 22.9 to 27.8 percent in the Denver metropolitan area.

Statewide, 1.2 percent of all primary cocaine admissions in 2009 were for clients younger than 18, and 11.8 percent were for clients age 18–24 (exhibit 4). Roughly 70 percent of cocaine admissions from 2000 through 2005 were for clients age 25–44. However, that age group's proportion declined steadily from 76.0 percent in 2000 to 59.5 percent in 2009, while the proportion of those older than 44 increased from 8.1 to 27.5 percent during that time, which may be indicative of a cohort that is aging.

The Denver metropolitan area showed similar trends, with a decline in total cocaine admissions of clients age 25–44 (80.0 to 58.0 percent from 2000 to 2009) and a rise in clients older than 44 (7.5 to 29.0 percent from 2000 to 2009). The Denver area also reported a small increase from 9.2 to 11.8 percent in admissions for clients age 18–24 from 2000 through 2009.

Statewide, in 2009, the proportions of all admitted clients who smoked, inhaled, or injected cocaine were 61.9, 30.3, and 6.3 percent, respectively (exhibit 4). The proportion who smoked has been on the rise from 2000 (57.9 percent), to 2007 (58.3 percent), to 2009 (61.9 percent). From 2002 through 2007, the proportion inhaling cocaine increased from 25.7 to 33.0 percent. In 2009, the proportion inhaling cocaine decreased slightly to 30.3 percent. The proportion injecting fell from 12.0 percent in 2002 to 6.3 percent in 2009.

The Denver area proportions in 2009 were 58.7, 35.6, and 4.5 percent, respectively, of cocaine users who smoked, inhaled, or injected the drug (exhibit 5). However, while smoking has been fairly stable

statewide, in the Denver area, the proportion of cocaine smokers declined steadily from 68.8 percent in 2000 to 55.9 percent in 2007. In 2009, there was a slight increase to 58.7 percent for cocaine smokers in the Denver area. Compared with Colorado overall, the Denver area had a larger increase in inhaling cocaine (from 21.8 percent in 2002 to 35.6 percent in 2009) and a larger decline in injecting (11.9 to 4.5 percent from 2002 to 2009).

Treatment data showed that cocaine users most often used alcohol as a secondary drug (exhibits 4 and 5). In addition to traditional demographics, the proportion of users entering treatment for the first time (clients with no prior treatment episodes), as well as those first-time users who had been using less than 3 years (new users), were examined. Statewide, the proportion of first-time treatment admissions (those having no prior treatment episodes, or first-timers) among cocaine-related admissions declined from 36.0 percent in 2000 to 32.6 percent in 2009. In the Denver area, first-timers increased from 29.4 percent of 2000 cocaine-related admissions to 33.3 percent in 2009 (exhibit 6).

Statewide, approximately 18.9–20.9 percent of first-time cocaine admissions had been using less than 3 years from 2000 through 2004. This proportion increased to 24.2 percent in 2005 and again to 25.8 percent in 2006, but it declined to 17.1 percent in 2008. In 2009, the decline continued to 14.6 percent, a 10-year low (exhibit 6). In the Denver area, the proportion of new users in treatment increased from 16.0 percent in 2003 to 23.7 percent in 2006. The proportion of new users in treatment declined from 2007 (17.7 percent) to 2008 (14.9 percent) to 2009 (11.9 percent).

In 2009, first-time cocaine admissions statewide and for Denver only reported average onset ages of 23.3 and 22.9, respectively (both had a median age of 21.0) (exhibit 6). From 2000 onward, the mean age of onset for first-time admissions was between 21.7 and 23.8 statewide and between 22.2 and 23.8 in the Denver metropolitan area.

In 2009, the mean number of years from reported onset of cocaine use to the first treatment episode was 12.6 years for statewide admissions and 13.5 years for Denver area admissions (exhibit

6), an increase from 10.6 years (for both State and Denver area admissions) in 2004. Since 2005, the average number of years to first treatment for both statewide and Denver cocaine users has been steadily increasing.

Excluding alcohol, cocaine (37 percent) accounted for the most illicit drug-related ED reports in the unweighted DAWN *Live!* data for the Denver area from January through June 2009 (exhibit 7). Also, the Denver metropolitan area rate for cocaine ED visits is compared with that of the entire United States. The Denver ED visit rate more than doubled from 93.1 to 204.9 visits per 100,000 population from 2004 to 2007. The United States rate increased by only 13 percent during the same time period (from 162.3 to 183.7 per 100,000), and it was substantially behind the Denver rate in 2006 and 2007 (exhibit 8). The weighted cocaine ED visit rate per 100,000 population for the Denver metropolitan area decreased from 204.9 in 2007 to 168.1 in 2008. This represents a statistically significant decrease of 16 percent. These were the most recent data available.

Excluding alcohol, cocaine was the most common drug found in Denver drug-related decedents from 2005 to 2009 (exhibit 9). However, as a proportion of total decedents, cocaine increased from 48.2 percent in 2005 to 50.3 percent in 2006, but it declined to only 25.6 percent in 2009.

Cocaine has been second only to alcohol in Denver drug-related hospital discharges since 2000, and cocaine-related hospital discharges rose relatively steadily from 2001 (232 per 100,000) through 2006 (324 per 100,000), but they declined to 282 per 100,000 in 2007 and to 238 per 100,000 in 2009 (exhibit 10).

During the 2005–2009 time period, cocaine was second only to alcohol in 4 of the 5 reporting years in the number of “street drug” calls to the RMPDC. Only in 2005 did cocaine drop to number three (after methamphetamine). In 2009, there were only 63 calls related to cocaine, the lowest in the last 5 years, which reflects a 39-percent drop from 2008 (exhibit 11).

Federal drug seizures for cocaine across Colorado (exhibit 12), after decreasing from 65.5

kilograms to 36 kilograms from 2003 to 2004, increased substantially in 2005 (131.5 kilograms) and 2006 (135.1 kilograms). They declined sharply in 2007 (44.0 kilograms) but rebounded somewhat to 52.6 kilograms in 2008. Federal drug seizure data for 2009 were not available at the time of this report.

Drug samples analyzed in Federal, State, and local forensic laboratories and reported to the DEA's NFLIS system are shown for 2009 for the Denver area (in this case consisting of Denver, Arapahoe, and Jefferson Counties) compared with all of the United States (exhibit 13). As indicated, cocaine samples were the most common among the top 50 drugs analyzed in the Denver area, constituting more than 1 in 3 (35.0 percent) of total, as compared with 24.5 percent for the United States (ranking second).

Cocaine was supplied primarily by the Mexican drug trafficking organizations (DTOs). Large cocaine loads were transported to Colorado from the southwest border and Mexico. From Colorado, much of the cocaine was then distributed to markets throughout the United States. In late summer 2008, investigative activity began to reveal that the DTOs were experiencing difficulty in consistently obtaining cocaine. Prices began to rise. As cocaine became more difficult to obtain, local distributors began using cutting agents. This trend continued into early 2009, with some ounce quantities testing as low as 20 percent pure. Traffickers have been repackaging cocaine to make it appear like it was just "broken directly off" a kilogram; they then use a press to repackage it after it has been "stepped on." Intercepted conversations indicated that customers were complaining about poor quality.

For several years, the Denver Crime Laboratory (DCL) has received many cocaine submissions in which levamisole is used as a cutting agent. Currently, the DCL estimated that 66 percent of their cocaine exhibits were cut with levamisole. Levamisole is primarily a veterinary medication used to control parasites in livestock. It had been used in the United States for treatment of rheumatoid arthritis and colorectal cancer, but it is no longer available for human consumption

in North America. In February 2009, a healthy adult Denver man, who had been using cocaine cut with levamisole, developed mouth pain over 5 days, along with fever, chills, and night sweats. Upon further examination, his neutrophil (also called granulocytes, which are a type of white blood cell that fights infections) count was found to be zero. His diagnosis was agranulocytosis, an autoimmune disorder that has recently been linked to levamisole.

Based on the "Proceedings of the DEWG," authored by Bruce Mendelson, some Denver area clinicians reported that there is still plenty of demand for cocaine despite declining indicator numbers and percentages. However, they also report the treatment population of cocaine users is aging (as shown in exhibit 3). Street outreach workers reported that crack was still the primary drug abused on the Denver streets and was also used in prostitution (Mendelson, 2010).

## Heroin

Of the five major drugs—cocaine, heroin, marijuana, methamphetamine and other opioids—heroin ranked fourth in both statewide and Denver metropolitan area treatment admissions, fourth in statewide calls to the RMPDC, second in Denver County mortality, and fourth in drug samples analyzed in Denver metropolitan area crime laboratories. Overall, heroin trends were mostly upward or stable.

From 2002 to 2008, treatment admissions fell from 13.1 to 7.1 percent statewide and from 22.9 to 10.1 percent in the Denver area. Since 2001, the volume of heroin admissions has been behind marijuana, methamphetamine, and cocaine admissions statewide. In Denver, the volume of heroin admissions exceeded admissions for cocaine and methamphetamine until 2002; however, in 2003, it dropped below cocaine admissions. Since 2004, it dropped even further, below both cocaine and methamphetamine admissions. However, from 2008 to 2009, the proportion of heroin treatment admissions increased from 7.1 to 9.5 percent statewide and from 10.1 to 13.1 percent in the Denver metropolitan area (exhibits 2 and 3).

Heroin admissions have been predominately male, and from 2008 to 2009, the proportion of male admissions out of all heroin admissions increased from 63.8 percent in 2008 to 66.4 percent in 2009 statewide and remained stable at 63.8 percent in the Denver area (exhibits 4 and 5).

Historically, Whites have accounted for the largest proportion of heroin admissions, and in 2009 that proportion was the highest it had been since 1997. Statewide, the 2009 proportions for Whites, Hispanics, and African-Americans, respectively, were 74.5, 17.6, and 4.9 percent of total admissions. In Denver in 2009, the proportions of White, Hispanic, and African-American admissions were 70.6, 18.4, and 7.0 percent, respectively.

Statewide in 2009, the average age of heroin users admitted to treatment was 35.3 (median age=32), down from 37.0 (median age=35.0) in 2008. Since 2000, less than 1 percent of heroin users entering treatment were younger than 18, and in 2009 the proportion younger than 18 was 0.8 percent. In recent years, the proportion of younger heroin users statewide has been on the rise. Heroin users younger than 25 increased from 2007 (14.6 percent) to 2008 (18.2 percent) to 2009 (22.5 percent). In 2009, 26.4 percent of statewide heroin admissions were for clients older than 44 (exhibit 4).

In Denver in 2009, the average age of heroin users entering treatment was 35.9 (median age=33.0); this is down from 38.9 (median age=38.0) in 2008. The Denver metropolitan area experienced a decline in heroin admissions of clients age 35–44 (from 32.9 percent in 2000 to 17.2 percent in 2009) and increases in clients younger than 25 from 2007 (12.9 percent) to 2008 (14.6 percent) to 2009 (21.4 percent) (exhibit 5).

Heroin is a drug that is predominantly injected. Statewide, the proportion of heroin injectors remained between 85.9 and 88.2 percent between 2000 and 2004; the proportion declined to 83.7 percent in 2005 and continued to decline, reaching a new low of 79.0 percent in 2009 (exhibit 4). The proportion smoking heroin more than doubled from 5.8 percent in 2000 to 11.7 percent in 2008. The proportion smoking heroin increased again in

2009, reflecting a new high of 13.4 percent. The proportion inhaling heroin ranged from 4.1 to 7.6 percent from 2000 through 2009. In 2009, 5.7 percent inhaled heroin statewide.

Denver's proportions were similar to statewide figures. The proportion injecting declined from 88.2 percent in 2001 to 78.0 percent in 2009 (exhibit 5). The proportion that smoked heroin remained between 5.5 and 6.9 percent from 2000 to 2004. The proportion that smoked heroin has been gradually increasing from 9.5 percent in 2007 to 11.9 percent in 2008 to a new high of 14.9 percent in 2009. The proportion inhaling decreased to 5.2 percent in 2009 (exhibit 5). Overall, treatment data showed that heroin users most often used cocaine as a secondary drug, followed by marijuana (exhibits 4 and 5).

In 2009, the proportion of heroin treatment admissions in treatment for the first time reached a new high of 26.5 percent statewide and 25.1 percent in the Denver metropolitan area (exhibit 5). Statewide, from 2002 through 2007, the proportion of first-timers remained between 23.7 percent in 2002 and 17.9 percent in 2007. During that same time period in Denver, the proportion of first-timers stayed between and 22.6 percent in 2002 and 16.8 percent in 2007.

Statewide in 2009, 40.6 percent (a new 10-year high) of heroin users in treatment for the first time had been using less than 3 years (exhibit 6), an increase from 19.3 percent in 2004. In Denver, the proportion of new users in treatment decreased from 37.1 to 18.9 percent from 2000 to 2004, but it rose to 38.2 percent in 2009.

Heroin users tended to be the oldest drug-using group (second to other opioid drug users) and started using at the oldest age. This has changed, as the age of onset for heroin users decreased slightly in 2009 both statewide and in Denver. The mean and median onset ages statewide decreased slightly from 2000 to 2003 (mean, from 24.1 to 21.6 and median, from 23.0 to 18.5), but they increased through 2008. Among 2009 first-time heroin admissions, the mean and median ages of onset statewide decreased to 23.1 and 21.0, respectively (exhibit 6). Similar to the statewide trend,

there was a decrease in onset age from 2000 to 2003 (mean, from 25.2 to 21.9; median from 24.0 to 18.0), with a subsequent increase through 2008. In Denver, the mean and median ages of onset decreased in 2009 to 22.8 and 21.0, respectively.

Among 2009 first-time heroin admissions, the mean time to enter treatment was 8.2 years for the State and 8.8 for the Denver metropolitan area (exhibit 6). Statewide, the mean time to enter treatment rose from 8.9 to 14.0 years from 2000 to 2004, but it has since been on the decline. During that same period, Denver showed a similar trend with an increase, from 7.8 to 14.8 years, followed by a decrease over the years.

Excluding alcohol, heroin accounted for 15 percent of illicit drug-related ED reports in the unweighted DAWN *Live!* data for the Denver metropolitan area from January through June 2009 (exhibit 7). Also, the Denver metropolitan area rate for heroin ED visits is compared with that of the entire United States. The Denver rate increased from 33.0 to 52.7 per 100,000 population from 2004 to 2008 (or by 60 percent). The United States rate decreased by 10 percent during the same time period, even though it was higher than the Denver rate for each year shown (exhibit 8).

Based on Bruce Mendelson's analysis of the Denver mortality data, which was provided to the Denver Office of Drug Strategy by the Denver Medical Examiner's Office, heroin was found in 4.0 percent (2004) to 12.7 percent (2008) of Denver drug-related decedents from 2004 to 2008. However, it is likely that this percentage was much greater. Heroin is metabolized into 6-monoacetylmorphine (6-MAM), then into morphine. Also, heroin typically contains codeine, because codeine naturally occurs in the opium poppy plant (from which heroin is produced). The 6-MAM needs to be present to confirm that heroin was related to the cause of death. However, this metabolite has a very short half-life and may be undetectable by the time blood work is done as part of an autopsy, whereas morphine and codeine will very likely be present in the blood toxicology. This sometimes makes it difficult to determine whether heroin was the specific cause of a drug-related death. Often,

an autopsy report will describe the circumstances surrounding a drug-related death, including information such as drug use history (e.g., decedent had history of heroin abuse). While such information cannot be used to specify heroin as a cause of death in the absence of 6-MAM, it does indicate that heroin is the likely "culprit." This proved to be true as represented by the 2009 data. Beginning in 2008 and reflected in the 2009 data, a new urine toxicology test is able to identify the presence of 6-MAM, a definitive marker for heroin. Thus, the proportion of heroin Denver drug-related decedents increased from 12.7 percent in 2008 to 23.7 percent in 2009 (exhibit 9). Additionally, as predicted, the percentage of codeine and morphine deaths decreased.

Denver metropolitan hospital discharge data for 2001–2009 combined all narcotic analgesics and other opioids, including heroin. While trends in this indicator for heroin alone cannot be assessed, the hospital discharge rate per 100,000 population for all opioids increased overall from 133 in 2001 to 203 per 100,000 in 2009. This is a 53-percent increase (exhibit 10).

During the 2005 to 2009 time period, statewide heroin/morphine drug-related calls to the RMPDC were far behind those of alcohol, cocaine, marijuana, and methamphetamine. Heroin calls were relatively stable from 2005 through 2009, ranging from 21 to 29 calls (exhibit 11).

As shown in exhibit 12, only small quantities of heroin were seized in Colorado from 2003 to 2008, ranging from 2.5 to 4.6 kilograms. Federal drug seizure data for 2009 were not available at the time of this report. As shown in exhibit 13, heroin samples analyzed and reported to NFLIS were the fourth most common drug among the top 50 drugs analyzed in 2009 in the Denver area, constituting 6.3 percent of the total, as compared with 7.0 percent for the United States (also ranking fourth).

According to local law enforcement, the Colorado and Denver metropolitan area heroin was supplied by Mexican DTOs, with Mexican black tar and brown powder the predominant heroin types both statewide and in Denver. Much of the heroin was transported from source locations in Mexico, through Arizona and California into Colorado and

the Denver metropolitan area. From Denver, heroin was further distributed to markets in the Midwest and on the east coast. Heroin DTOs within the jurisdiction of the Denver DEA were generally tied directly to sources of supply in Mexico.

Based on the “Proceedings of the DEWG,” some Denver street outreach workers continued to see an increased number of heroin users. They reported many were suburban White males who were abusing prescription narcotics but found smoking heroin less expensive. These new young users refer to “smoking black tar opium” and sometimes are not even aware that “opium” and “heroin” are “one in the same.” These users feel that calling it opium is more socially acceptable, and only a small number of these users are “graduating” to injecting. Denver outreach workers reported some heroin users complaining of inconsistent quality and continued abscesses (Mendelson, 2010).

Denver clinicians are noticing an increase of heroin treatment intakes and recognize the trend of new heroin users admitted as a result of a progression from prescription opioids to heroin based on price and availability. Denver area treatment programs also reported an increase in female heroin admissions. Clients have stated the increased potency of black tar heroin has resulted in more people smoking it. Regarding the increase in heroin treatment admissions age 55 and older, such users reported that they were “getting sick of the lifestyle, which often ends up being a matter of using to stay well instead of getting high.” Some older heroin users had years of sobriety and then relapsed as a result of receiving opiates for medical problems (e.g., chronic pain issues) (Mendelson, 2010).

### Other Opioids

This category excludes heroin and includes all other opioids, such as methadone, morphine, hydrocodone, hydromorphone, codeine, and oxycodone. Of the five major drugs—cocaine, heroin, marijuana, methamphetamine, and other opioids—other opioids ranked fifth in both statewide and Denver metropolitan area treatment admissions

and second in Denver County mortality cases. Other opioid trends were mostly upward.

During 2009, opioids other than heroin were reported as primary drugs in 9.0 percent of statewide treatment admissions, excluding alcohol (exhibit 2); this proportion rose from a low of 3.8 percent in 2002 and reached a 10-year high. In Denver, other opioids had represented between 4.9 and 8.5 percent of treatment admissions (excluding alcohol) since 2002. Other opioids have since reached a high of 8.5 percent of admissions in 2009 (exhibit 3).

Treatment admissions related to nonheroin opioids have always had higher proportions of females than the other four major illicit drugs. Statewide, females constituted 55.4 percent of other opioid treatment admissions in 2001, but this proportion dropped to 47.1 percent in 2009 (exhibit 4). In Denver, females accounted for 55.5 percent of nonheroin opioid treatment admissions in 2001; however, this proportion declined to 47.2 percent in 2009 (exhibit 5).

Statewide and in Denver, Whites account for the largest proportion of treatment admissions related to other opioids. Since 2000, the proportion of Whites fluctuated between 78.0 and 87.8 percent statewide; they represented 79.6 percent in 2009 (exhibit 4). African-American treatment admissions for other opioids declined from 3.4 percent in 2002 to 1.0 percent in 2006. Since 2007, African-American other opioid admissions remained stable at 2 percent. The proportion of Hispanic other opioid admissions in Colorado rose from 6.5 percent in 2003 to 13.9 percent in 2006, but it declined slightly to 12.7 percent in 2007. The proportion of Hispanic other opioid admissions in Colorado reached a high of 17.0 percent in 2008 and has since declined slightly to 15.2 percent in 2009.

In the Denver metropolitan area, the proportion of White admissions for other opioids declined from 86.3 to 80.3 percent between 2000 and 2002, jumped to 89.0 percent in 2003, and decreased to 83.8 percent in 2004. In 2009, the proportion of White other opioid admissions was 81.8 percent, up from 78.4 percent in 2008 (exhibit 5). In 2009, African-Americans represented 2.9 percent of

admissions, down from a high of 7.0 percent in 2005. However, the moderate change in proportion is influenced by the small numbers of African-American other opioid admissions (between 8 and 32 from 2000 through 2009). Hispanics reached a high of 13.8 percent of Denver area opioid admissions in 2008. However, the Hispanic proportions vacillated between 4 and 13.8 percent during the entire 2000 to 2009 time period, which may also be based on the small numbers of admissions (between 15 and 67 over the 10-year period).

Like heroin users, users of other opioids tended to be older than other drug-using groups, although this may be changing. Statewide, the average age of other opioid users entering treatment in 2009 was 34.0 (median age=31); 1.8 percent were younger than 18, and 20.1 percent were older than 44. Two age ranges demonstrated a possible trend toward younger users. From 2000 to 2009, the proportion of clients age 18–34 increased from 33.6 to 57.6 percent, while clients 35 and older declined from 64.5 percent in 2000 to 40.6 percent in 2009 (exhibit 4). Likewise, in Denver there was an overall increase in admissions of users of other opioids in clients age 18–34 (from 31.5 to 60.5 percent from 2000 through 2009) (exhibit 5).

Nonheroin opioids were most often taken orally. Statewide in 2009, 79.7 percent of admissions for other opioids ingested the drugs orally, and 9.4 and 7.4 percent, respectively, inhaled and injected the drugs (exhibit 4). From 2000 to 2005, the proportions injecting declined from 12.3 to 8.3 percent, increased slightly in 2006 to 9.4 percent, but since declined to 7.4 percent in 2009. The proportion inhaling increased from 0.6 to 7.9 percent from 2000 through 2006 but declined slightly to 4.7 percent in 2007. The proportion inhaling increased to 9.4 percent in 2009. Perhaps the overall increase in other opioid inhalation reflects the practice of crushing and inhaling OxyContin®.

Denver's proportions for preferred route of administration were similar to statewide figures. The proportion of other opioid admissions ingesting orally ranged from 89.0 percent in 2000 to 76.9 percent in 2009 (exhibit 5). The 2009 proportions that inhaled and injected were 12.1 and

6.9 percent, respectively. The Denver area had not shown the same decline as seen statewide in the numbers injecting between 2000 (7.7 percent) and 2006 (10.2 percent), but it did experience a decline in 2007 (7.8 percent). There was a slight increase from 2007 to 2008 in injecting other opioids, from 7.7 to 8.3 percent. In 2009, injecting other opioids reached a low of 6.9 percent. Inhalation in the Denver area reached a new high of 12.1 percent in 2009. Treatment data, overall, showed that other opioid users most often used alcohol as secondary and tertiary drugs (exhibits 4 and 5).

In 2009, first-time other opioid admissions constituted 40.9 percent of treatment admissions statewide and 39.1 percent in the Denver metropolitan area (exhibit 6). Statewide, the proportion of first-timers increased from 33.8 to 38.3 percent from 2002 to 2005. In 2009, it increased to 40.9 percent. In Denver, from 2000 to 2009, the proportion of first-timers fluctuated widely between 29.1 and 39.1 percent, with no clear trend.

Among first-time opioid treatment admissions in 2009, the mean and median ages of onset statewide were 25.0 and 22.0, respectively (exhibit 6), a decrease since 2001 from a mean onset age of 28.8 (median 28). Denver showed a similar trend, with a decrease from 2001 to 2007 in the mean age of onset (from 29.4 to 26.2) and in the median age (from 30.0 to 24.0). In 2009, the mean and median onset ages of Denver area first-time opioid admissions continued the downward trend to 24.2 and 22.0, respectively (exhibit 6).

In 2009, the mean time to enter treatment for first-time other opioid admissions was 7.7 years statewide and 7.6 years for the Denver metropolitan area (exhibit 6). Statewide, the mean time to enter treatment declined from 12.1 years in 2003. Denver showed a similar decline from 13.4 years in 2003. In 2009, 22.9 percent of users of other opioids entering treatment for the first time in Colorado and 24.1 percent in Denver had been using less than 3 years (exhibit 6). Statewide, this proportion was at its lowest (19.5 percent) in 2002 and jumped to 26.3 percent in 2004. In Denver, the proportion of new users in treatment increased from 17.5 to 27.7 percent from 2002 through 2006.

In exhibit 14, narcotic analgesic ED reports are broken out by specific drug. As indicated, in the first half of 2009, hydrocodone (e.g., Vicodin®) and oxycodone (e.g., Percodan®) accounted for almost two-thirds of all narcotic analgesic ED reports. In exhibit 8, the Denver metropolitan area rate for narcotic analgesic ED visits is compared with that of the entire United States. The Denver rate more than tripled from 30.1 to 104.4 visits per 100,000 population from 2004 to 2008. The Denver narcotic analgesic rate was higher than the United States rate from 2007 to 2008. These were the most recent data available at the time of this report.

Other opioids were among the most common drugs found in Denver drug-related decedents from 2005 to 2008. Morphine was involved in 22.6–37.9 percent of Denver drug-related deaths during the 2005 to 2008 time period, and codeine was involved in 9.0–21.3 percent of Denver drug-related deaths during the same time period. However, based on the prior discussion of the short half-life of the marker for heroin deaths (i.e., 6-MAM) and that codeine and morphine are usually present in blood toxicology related to a heroin death, it is likely that a substantial proportion of morphine and codeine deaths are really heroin-related deaths. This is reflected in the 2009 data, with the urine toxicology test confirming the presence of 6-MAM. Both morphine and codeine proportions decreased in 2009 to 12.6 and 5.3 percent, respectively. Oxycodone accounted for only 4.1 percent of Denver drug-related deaths in 2006, but the proportion increased to 23.2 percent by 2009 (exhibit 9).

As noted earlier, Denver metropolitan hospital discharge data for 2001–2009 combined all opioids, including heroin. Opioids increased 53 percent, from 133 per 100,000 population in 2001 to 203 per 100,000 in 2009 (exhibit 10).

Data from the PDMP showed substantial increases in the number and rate of hydrocodone and oxycodone prescriptions filled for Denver residents. Exhibit 15 details hydrocodone prescriptions filled for Denver residents from the third quarter of 2007 through the fourth quarter of 2009. Although hydrocodone prescriptions peaked at

45,826, or 78.8 per 1,000 population, in the second quarter of 2008, there was an overall rate increase from 68.6 to 77.8 per 1,000, or 15 percent, from the third quarter of 2007 through the fourth quarter of 2009. Oxycodone increased steadily from 47.6 to 64.8 prescriptions per 1,000 population, or by 38 percent, from the third quarter of 2007 to the fourth quarter of 2009 (exhibit 16). There were no poison control center calls reported for opiates other than heroin and morphine.

Based on the “Proceedings of the DEWG,” local law enforcement and intelligence reported a dramatic increase in prescription opioid availability and use, with the main source still being doctor shopping. Fraudulent prescriptions were being reported, as photocopied “scripts” can look authentic. Often, those using fraudulent scripts take them in to a pharmacy at 5 or 6 p.m., when the pharmacists are busiest (much of the reporting of fraud is from pharmacists). Law enforcement also reported an increase in Internet orders for opioid prescriptions in addition to increased pharmacy thefts and robberies (Mendelson, 2010).

Denver area clinicians reported their clients using “lots of oxycodone and hydrocodone, but most clients would take anything they could get.” Many older clients became addicted to pain medication prescriptions. However, younger clients began using prescription opioids as a recreational drug and did not realize how potent and dangerous they were. Adolescents and young adults often obtain prescription medication from their parents’ medicine cabinets. Some adolescents and young adults are also crushing and snorting the drugs, rather than just swallowing them. There is also a method of ingestion called “parachuting,” which involves swallowing crushed or powdered drugs rolled or folded in toilet paper. This allows the user to avoid the taste, while attempting to manufacture a time-release system as the paper unrolls in the GI tract. Clinicians reported that clients got the prescription opioids through the same methods described by law enforcement (i.e., doctor shopping, emergency departments, and the Internet). Clinicians were also reporting that clients had easier access to prescription methadone as a



pain medication and that these clients were coming into treatment after becoming addicted (Mendelson, 2010).

Some Denver street outreach workers said that prescription opioids were not sold as often on the street, except between users. This “business” is not typically run by street gangs, but rather by “doctor shoppers” who are able to obtain large quantities of prescription opioids. This “filters down” to the street addicts who trade pills with items stolen from stores in order to maintain their habits (Mendelson, 2010).

### **Methamphetamine**

Of the five major drugs—cocaine, heroin, marijuana, methamphetamine, and other opioids—methamphetamine ranked second in both statewide and Denver metropolitan area treatment admissions. Historically, Denver area methamphetamine treatment admissions ranked third behind marijuana and cocaine admissions; this change in rank broke a 10-year trend. Methamphetamine ranked second in statewide calls to the RMPDC, fifth in proportion of Denver metropolitan area ED visits, fourth in Denver County mortality cases, and third in drug samples analyzed in Denver metropolitan area crime laboratories. Most methamphetamine indicators showed downward trends.

In 2009, methamphetamine was the primary drug reported for 25.0 percent of all treatment admissions (excluding alcohol) statewide (exhibit 2), down from 30.4 percent in 2006. Prior to 2006, methamphetamine admissions rose steadily from 19.1 percent in 2002 to a high of 31.7 percent in 2005. Methamphetamine admissions have been second to marijuana admissions since 2003.

In the Denver metropolitan area, methamphetamine represented proportionately fewer treatment admissions (18.7 percent in 2009) than it did among statewide admissions (exhibit 3). While the proportion of methamphetamine admissions (excluding alcohol) in Denver rose each year from 2002 through 2007 (from 12.1 to 21.7 percent), there was a decline from 2008 (20.4 percent) to 2009 (18.7 percent). Moreover, while Denver area

methamphetamine admissions exceeded heroin admissions in 2004 and surpassed heroin and cocaine admissions in 2005, the volume of Denver area methamphetamine admissions dropped below cocaine admissions in 2006, 2007, and 2008 (exhibit 3). In 2009, Denver area methamphetamine admissions slightly exceeded cocaine admissions, but this most likely can be attributed to the sizable decrease in Denver cocaine admissions rather than an increase in methamphetamine admissions.

After admissions for nonheroin opioids and sedatives, methamphetamine admissions had the highest proportion of female admissions statewide (44.9 percent) in 2009 (exhibit 4). Statewide, the proportion of female admissions stayed between 45.1 and 50.4 percent from 2000 through 2003, decreased to 44.0 percent in 2004, and rose to 46.0 and 46.7 percent in 2005 and 2006, respectively. However, the proportion of females declined slightly to 46.2 in 2007 and then to 44.9 percent in 2009. In the Denver area, the proportions of female methamphetamine admissions were 50.0 and 50.4 percent in 2000 and 2001; they then decreased to 45.9 percent in 2002, jumped to a high of 52.7 percent in 2003, and have since declined to 44.4 percent in 2009 (exhibit 5).

In 2009, methamphetamine admissions in Colorado and Denver were predominately White (exhibits 4 and 5). From 2000 to 2009, the proportion of White treatment admissions declined from 87.8 to 75.5 percent statewide and from 90.1 to 78.5 percent in the Denver area. At the same time, the proportion of Hispanic methamphetamine admissions rose from 8.5 to 18.9 percent statewide and from 7.0 to 15.4 percent in Denver.

Compared with cocaine, methamphetamine admissions tended to be younger. In 2009, the average age of clients entering treatment was 32.7 (median age=31.0) statewide and 32.6 (median age=32.0) for Denver admissions. Also, 19.2 percent of statewide admissions and 18.8 percent of Denver admissions were younger than 25. Statewide, 68.5 percent of admissions were clients age 25–44, compared with 70.9 percent for the Denver area.

In 2009, the proportions of clients statewide who smoked, injected, or inhaled methamphetamine were 64.4, 21.3, and 12.2 percent, respectively (exhibit 4). The proportion who smoked increased from 2000 (38.7 percent) to 2009 (64.4 percent), while the proportions who inhaled decreased substantially during that time, from 21.5 percent in 2000 to 12.2 percent in 2009. Injectors decreased from 33.9 percent in 2000 to 20.2 percent in 2007 and then increased to 22.7 in 2008. There was a slight decline in injectors to 21.3 percent in 2009.

During 2009 in the Denver area, the proportions that smoked, injected, or inhaled methamphetamine were 58.7, 23.5, and 14.8 percent, respectively (exhibit 5). As with the State overall, the proportion who smoked increased substantially from 35.6 to 65.7 percent from 2000 to 2006. However, this proportion dropped to 61.4 percent in 2007 and to 58.7 percent in 2009. Similarly, those who injected declined from 38.5 to 18.2 percent from 2000 to 2006. This percentage rose to 20.1 percent in 2007 and then to 25.4 percent in 2008. In 2009, the percentage of methamphetamine injectors declined to 23.5. The proportion of inhalers declined from 19.8 to 9.4 percent from 2000 to 2003, but during 2004 through 2009, the proportions fluctuated between 12.2 to 15.1 percent. Treatment data, overall, showed that methamphetamine users most often used marijuana as a secondary drug, followed by alcohol (exhibits 4 and 5).

Statewide and in Denver, 31.2 and 30.2 percent, respectively, of 2009 methamphetamine admissions were first-timers (exhibit 6). Statewide, the proportion of first-time admissions declined from 44.9 percent in 2000 to 31.2 percent in 2009. In Denver, the proportion of first-time methamphetamine admissions remained between 33.8 and 36.6 percent between 2000 and 2008, but they hit a new low of 30.2 percent in 2009.

Statewide, the proportion of new users in first-time admissions rose from 19.5 to 27.8 percent from 2000 to 2003. In 2004, the proportion of new users declined to 24.9 percent, and in 2005 it increased to 26.0 percent. Since 2006, the proportion of new users in first-time admissions has been

on a steady decline: from 21.5 percent in 2006 to 17.8 percent in 2007, 13.4 percent in 2008, and a new low of 11.7 percent in 2009 (exhibit 6). In Denver, the proportions of new users in treatment increased from 14.3 percent in 2000 to 28.2 percent in 2003, declined to 23.4 percent in 2004, and were 26.1 and 20.8 percent, respectively, in 2005 and 2006. However, like the State, the Denver metropolitan methamphetamine new user proportion also reached a new low in 2009 (10.1 percent).

Statewide, the average age of onset for methamphetamine use reported in 2009 first-time admissions was 21.6 (median age=19.0), and for Denver it was 20.7 (median age=19.0) (exhibit 6). Since 2000, the mean age of onset for methamphetamine admissions statewide and in Denver stayed between 20 and 23. The median age remained at 19 both statewide and in the Denver area (exhibit 6).

From 2000 to 2005, the average time for methamphetamine abusers to enter treatment decreased from 8.7 to 7.5 years statewide and from 9.1 to 7.6 years in Denver. In 2006, the average time to enter treatment was at 8.5 and 8.4 years, respectively, for statewide and Denver area admissions, and it remained at approximately these durations in 2007. The average years to first treatment for methamphetamine abusers increased slightly in 2008 and 2009, from 10.1 to 10.4 years statewide and from 10.3 to 11.1 years in the Denver area (exhibit 6).

Excluding alcohol, methamphetamine accounted for 8 percent of illicit drug-related ED reports in the unweighted DAWN *Live!* data for the Denver metropolitan area from January through June 2009 (exhibit 7). Also, the Denver metropolitan area rate for methamphetamine ED visits from 2004 to 2008 are compared with that of the entire United States. The Denver rate more than doubled, from 32.5 to 76.1 visits per 100,000 population from 2004 to 2005, but then it steadily declined to 35.5 per 100,000 population in 2008. From 2005 through 2008, the Denver methamphetamine rate per 100,000 population was substantially higher than the United States rate (exhibit 8). These were the most recent data available.

While methamphetamine was not among the most common drugs found in Denver drug-related

decedents, it still accounted for 4.8 percent in 2009 (exhibit 9). Methamphetamine could not be identified separately, but rather it was included in the stimulants category in hospital discharge data. Overall, Denver metropolitan stimulant-related hospital discharges nearly tripled from 2001 to 2005, from 47 to 129 per 100,000 population, but they then dropped to only 66 per 100,000 population by 2009 (exhibit 10).

Methamphetamine was second after cocaine (excluding alcohol calls) in the number of statewide drug-related calls to the RMPDC in 2009 (exhibit 11). Methamphetamine had ranked first in RMPDC calls in 2005, but it ranked third behind cocaine and marijuana 2006 through 2008.

Federal drug seizures for methamphetamine across Colorado (exhibit 12) increased each year from 2003 (14.8 kilograms) to 2006 (50.3 kilograms), but they then declined to only 8 kilograms in 2007. However, in 2008 methamphetamine seizures increased to 26.4 kilograms. Despite the increase in methamphetamine seizures from 2007 to 2008, methamphetamine laboratory seizures continued to decline in Colorado from 345 in 2003 to only 33 in 2008. Federal drug seizure data for 2009 were not available at the time of this report.

The proportion of methamphetamine samples analyzed in NFLIS reporting laboratories accounted for 12.6 percent. Methamphetamine ranked third among the top 50 drugs analyzed in 2009 in the Denver area, compared with 9.7 percent (also ranking third) across the United States (exhibit 13).

Despite the precursor crackdown in Mexico, local law enforcement officials reported that most methamphetamine was produced and supplied by Mexican DTOs. DEA Denver reported large loads of methamphetamine were transported from Mexico, Texas, Arizona, and California to Colorado.

Based on the “Proceedings of the DEWG,” Denver area clinicians reported that the decrease in methamphetamine use was probably due to both the decreased supply resulting from precursor crackdowns and decreased demand resulting from publicity about the negative effects of methamphetamine use. One clinician reported that

methamphetamine use was “rare” among clients in the adolescent treatment program. Some adolescent clients said that they “would never use that drug,” due to the stigma and awareness about the dangers and addictiveness of methamphetamine use. Also, many of the clients had friends or family who had used methamphetamine and experienced neglect or abuse (Mendelson, 2010).

Street outreach workers in Denver reported a significant decrease in methamphetamine on the street. However, there were still reports of substantial methamphetamine use in the gay community (especially gay men), with many injecting as opposed to smoking the drug. The drug is reported to increase sexual desire and stamina, and it is often associated with risky sexual behavior. There were also reports that methamphetamine had made significant inroads into the Latino community (Mendelson, 2010). Denver methamphetamine price information for 2009 is shown in exhibit 17.

## Marijuana

Of the five major drugs—cocaine, heroin, marijuana, methamphetamine, and other opioids—marijuana ranked first in both statewide and Denver metropolitan area treatment admissions, third in statewide calls to RMPDC, second in Denver County hospital discharges, and second in drug samples analyzed by Denver metropolitan area crime laboratories. All marijuana indicators were either stable or increasing, with the exception of slightly fewer RMPDC calls in 2009.

Statewide, the percentage of marijuana treatment admissions decreased from 40.2 percent in 2002 to 36.6 percent in 2008 but increased to 37.4 percent in 2009 (exhibit 2). In Denver, the proportion of marijuana admissions also declined from 34.2 percent in 2002 to 32.3 percent in 2003, but they jumped to 38.5 percent in 2004, represented 37.0 percent in 2006, and declined to 36.6 percent in 2007. In 2009, marijuana admissions in Denver increased to 37.9 percent (exhibit 3).

Historically, marijuana admissions have represented the highest proportion of males among drug groups. In 2009, 77.3 percent of marijuana

admissions statewide and 77.5 percent in Denver were male (exhibits 4 and 5). The proportion of males ranged from 72.3 to 77.3 percent of admissions statewide; however, in Denver, the proportion of males increased substantially from 69.3 percent in 2003 to 78.5 percent in 2007.

In 2009, Whites, Hispanics, and African-Americans represented 49.5, 32.8, and 13.8 percent of marijuana admissions, respectively, statewide (exhibit 4). From 2000 to 2009, the proportion of White admissions decreased from 58.3 to 49.5 percent. However, the proportion of African-American marijuana admissions increased from 2000 (7.4 percent) to 2009 (13.8 percent). The proportion of Hispanics decreased from 30.7 to 26.2 percent from 2000 to 2003, increased to 30.0 percent in 2005, decreased to 28.4 percent in 2006, and has since gradually increased to 32.8 percent in 2009.

In Denver, there was a clear downward trend in the proportion of White marijuana admissions from 2000 to 2005 (58.2 to 41.6 percent), with an increase in 2006 to 44.4 percent, followed by declines to 43.2 percent in 2007 and 42.9 percent in 2008. In 2009, the proportion of White marijuana users increased to 44.1 percent (exhibit 5). There was a consistent rise in African-American admissions from 11.5 percent in 2000 to 21.4 percent in 2005, but this proportion declined to 21.1 and 20.1 percent in 2006 and 2007, respectively. In 2009, African-American admissions in the Denver area represented 20.3 percent. As with the statewide trend, the proportion of Hispanics declined from 2001 to 2003 (27.1 to 24.6 percent) but increased to 32.1 percent in 2005. In 2009, the proportion of Hispanic marijuana users represented 31.4 percent.

In both Colorado and the Denver metropolitan area, marijuana users were typically the youngest of the treatment admissions groups. In 2009, the average age of marijuana users entering treatment was 24.6 (median age=22) statewide and 23.9 (median age=21) in Denver. For both the State and Denver, there appeared to be slight upward trends in the age of treatment admissions until 2009. From 2000 to 2008, the median age increased from 18 to 23 statewide and from 17 to 22 in Denver. In 2009, both Colorado and Denver experienced decreases

in the median age of marijuana treatment admissions, to ages 22 and 21, respectively.

Treatment data, overall, showed that marijuana users most often used alcohol as a secondary or tertiary drug (exhibits 4 and 5). Statewide in 2009, 52.0 percent of admissions were in treatment for the first time, a decline from 59.7 percent in 2001. Of 2009 Denver area admissions, 53.2 percent entered their first treatment episode, a decline from 60.2 percent in 2001 (exhibit 6).

Marijuana users not only tended to be the youngest of drug using groups, but they also started to use at the youngest age. In 2009, the mean and median ages of onset for first-time admissions statewide were 14.3 and 14.0. For the Denver area, the mean and median ages of onset for those in treatment the first time were 14.3 and 14.0, respectively. Since 2000, age of onset has remained stable statewide and for Denver area admissions.

Statewide in 2009, 23.2 percent of marijuana users had been using less than 3 years before entering treatment for the first time, a decrease from 33.4 percent in 2003. In Denver, the proportion of new users entering their first treatment decreased from 37.8 to 23.0 percent from 2003 to 2009 (exhibit 6).

In 2009, the mean time to enter treatment for the first time was 9.4 years statewide and 9.2 years for Denver area admissions (exhibit 6). For the State as a whole and the Denver area, both the mean and median times to enter treatment increased since 2000 (by more than 2 years statewide and by more than 3 years in Denver).

Excluding alcohol, marijuana accounted for 30 percent of illicit drug-related ED reports in the unweighted DAWN *Live!* data for the Denver metropolitan area from January through June 2009 (exhibit 7). In Exhibit 8, the Denver metropolitan area rate for marijuana ED visits is compared with that of the entire United States. The Denver rate tripled from 50.4 to 151.3 visits per 100,000 population from 2004 to 2008. The United States rate increased by 28 percent during the same time period, and it was substantially behind the Denver rate in 2006 through 2008.

Denver metropolitan marijuana-related hospital discharges increased steadily from 2001

(151 per 100,000 population) to 2006 (207 per 100,000), decreased to 181 per 100,000 in 2007, but then increased to 223 per 100,000 in 2009, the highest level in the 9-year time period (exhibit 10).

Marijuana was second behind cocaine in the number of State drug-related calls to the RMPDC from 2006 to 2008 and third behind cocaine and methamphetamine in 2009 (excluding alcohol calls) (exhibit 11).

Federal drug seizures for marijuana across Colorado (exhibit 12), after being relatively stable from 2003 (444.1 kilograms) to 2006 (656.8 kilograms), nearly doubled to 1,149.5 kilograms in 2007. They increased nearly 24-fold to 24,089.2 kilograms in 2008. Federal drug seizure data for 2009 were not available at the time of this report.

In the Denver area samples, marijuana/cannabis ranked second at 26.4 percent of the top 50 drugs analyzed in 2009 in the NFLIS laboratory system, compared with 36.6 percent for the United States, where it ranked first (exhibit 13).

Based on the “Proceedings of the DEWG,” Denver street outreach workers reported “marijuana has exploded on the Denver streets.” Many street users were now “card carrying users.” The large influx of medical marijuana dispensaries appeared to be contributing to the quality, availability, and use of marijuana among the “street” clientele they serve. Outreach workers further reported that marijuana dealers “seem to be standing on every downtown corner” and that people were smoking publicly in their cars and in parks all over Denver (Mendelson, 2010). Denver area clinicians reported an overall climate where marijuana was much more accessible and less stigmatized. It also appeared that medical marijuana cards were very easy to obtain for seemingly mild conditions (Mendelson, 2010). Marijuana price information for 2009 is shown in exhibit 17.

## **Benzodiazepines**

Benzodiazepines are a class of psychoactive drugs with varying sedative, hypnotic, and anti-anxiety (i.e., anxiolytic) properties. Most common are the benzodiazepine tranquilizers (diazepam,

alprazolam, lorazepam, and clonazepam). Benzodiazepines presented a “mixed picture” in the Denver metropolitan area drug scene. This drug category is not shown as a separate breakout on exhibits 2 or 3. From 2001 to 2009, benzodiazepines were somewhat infrequent among Colorado treatment admissions, accounting for a high of 106 admissions in 2002 (1 percent of total drug admissions, excluding alcohol) to a low of 39 in 2001 (or 0.4 percent of nonalcohol admissions). There were 100 statewide benzodiazepine admissions in 2009, constituting 0.6 percent of all drug admissions, excluding alcohol.

Denver metropolitan benzodiazepine admissions from 2001 to 2009 were also somewhat infrequent, accounting for a high of 56 admissions in 2002 (1.3 percent of total drug admissions excluding alcohol) to a low of 18 in 2001 (or 0.4 percent of nonalcohol admissions). There were 33 Denver metropolitan benzodiazepine admissions in 2009, constituting 0.4 percent of all drug admissions, excluding alcohol.

In exhibit 8, the Denver metropolitan area rate for benzodiazepine ED visits is compared with that of the entire United States. The Denver rate nearly tripled from 23.7 to 71.8 visits per 100,000 population from 2004 to 2008. These were the most recent data available.

While benzodiazepines were not among the most common drugs found in Denver drug-related decedents, diazepam accounted for 5.9 to 11.1 percent of Denver drug-related mortality from 2005 to 2009. Alprazolam constituted 5.9 to 9.7 percent of Denver drug-related mortality during the same time period (exhibit 9).

Taken together, alprazolam, clonazepam, and diazepam accounted for 1.7 percent of the top 50 drugs submitted for testing to the NFLIS in 2009 in the Denver area, compared with 3.5 percent in the entire United States.

As reported by Denver area clinicians, benzodiazepines used with prescription opioids or heroin create a synergistic effect, increasing their desirability. Most individuals who use benzodiazepines often obtain them through others who have prescriptions (Mendelson, 2010).

## MDMA

MDMA (3,4-methylenedioxyamphetamine), or ecstasy, morbidity and mortality remained relatively low in Denver. Of the 68 statewide “club drug” treatment admissions shown in 2009 (exhibit 2), which represented 0.4 percent of total nonalcohol admissions, 60 were for MDMA. In the Denver metropolitan area, club drugs accounted for 35 treatment admissions in 2009 (0.5 percent of total nonalcohol admissions) (exhibit 3). Of these, 29 were for MDMA.

Excluding alcohol, MDMA accounted for 2 percent of illicit drug-related ED reports in the unweighted DAWN *Live!* data for the Denver metropolitan area from January through June 2009 (exhibit 7). In exhibit 8, the Denver metropolitan area rate for MDMA ED visits is compared with that of the entire United States. The Denver rate more than doubled from 4.5 to 14.1 visits per 100,000 population from 2004 to 2008, while the United States rate increased slightly from 3.5 to 5.9 visits per 100,000 population from 2004 to 2008. The Denver MDMA rate was higher than the United States rate for the entire 2004 to 2008 time period. MDMA accounted for 2.7 percent of the top 50 drugs submitted for testing to the NFLIS in 2009 in the Denver area, compared with 1.4 percent across the United States (exhibit 13).

According to law enforcement/intelligence, over the last 6 years or so, the source of MDMA has shifted from Europe to Canada. The MDMA found in Colorado in 2008 was almost exclusively produced in Canada, and it was often transported and distributed by Asian DTOs. In general, law enforcement/intelligence reported an overall increase in the MDMA supply in Colorado over the past 2 years. In Colorado, MDMA sold for \$3–\$6 per tablet wholesale, \$5–\$17 retail, and \$10–\$25 per tablet on the street (exhibit 14).

### BZP (1-Benzylpiperazine)

In 2009, there were 128 BZP exhibits (representing 2 percent) seized and identified by forensic laboratories in Arapahoe, Denver, and Jefferson Counties

based on NFLIS data. Unfortunately, BZP was not reported in treatment admissions, ED data, mortality cases, or hospital discharge data. It appears that only the crime laboratories were isolating this drug, making it difficult to determine actual BZP usage levels. BZP was recently made a schedule 1 controlled substance and, therefore, may be less available as it once was.

According to the DEA, BZP was first synthesized in 1944 as a potential antiparasitic agent, and it was subsequently shown to have amphetamine-like effects. Though much less potent than amphetamine, BZP acts like a stimulant in humans, producing euphoria and increased heart rate and blood pressure. It appears that 1996 was the first year BZP use was initiated by drug abusers in the United States, as measured mostly by encounters with law enforcement. BZP is usually taken orally as a powder, tablet, or capsule. BZP street names include A2, Legal E, or Legal X. BZP is often taken in combination with TMFPP (1-(3-trifluoromethylphenyl)piperazine), which is touted as a substitute for MDMA.

Though probably not a significant problem in Denver in terms of user numbers, research indicates that BZP and TFMPP, when taken together, have a synergistic effect on certain neurotransmitters (dopamine and serotonin), which may lead to seizures (Bauman, et al., 2005).

## INFECTIOUS DISEASES RELATED TO DRUG ABUSE

### AIDS Among Injection Drug Users

Of the 9,611 cumulative AIDS cases reported in Colorado through December 30, 2009, 9.1 percent were classified as injection drug users (IDUs), and another 10.6 percent were classified as homosexual or bisexual males and IDUs (exhibit 18). The proportion of newly diagnosed HIV cases attributed to injection drug use has stayed fairly stable since 2001 (exhibit 19). However, the proportion of newly diagnosed AIDS cases attributed to injection drug use increased from 6 percent in 2008 to 14 percent in 2009 (exhibit 20).

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**Exhibit 1. Denver Epidemiology Work Group Membership: 2009**

<b>Name</b>	<b>Agency</b>	<b>Field</b>
Jim Adams-Berger	Omni Institute	Research and evaluation
Kendra Bernard	Westat	Drug Abuse Warning Network
Kerry Broderick	Denver Health and Hospitals	Emergency medicine
Kristen Dixon	State Division of Behavioral Health	Data analysis and evaluation
Eric Ennis	Addiction Research and Treatment Services	Substance abuse treatment
Vanessa Fenley	Denver Office of Drug Strategy	Substance abuse prevention
Mark Fleecs	Denver Police and HIDTA	Drug control and intelligence
Jonathan Gray	Arapahoe House	Substance abuse treatment
Ron Hollingshead	National Drug Intelligence Center and HIDTA	Drug control and intelligence
Eric Lavonas	Rocky Mountain Poison and Drug Center	Drug toxicology
John Lundin-Martinez	Denver Behavioral Health Services	Substance abuse treatment
Karla Maraccini	Denver Office of Drug Strategy	Substance abuse planning and administration
Amy Martin	Denver Office of the Medical Examiner	Chief Medical Examiner
Andrew McClure	Urban Peak	Outreach counselor
Bruce Mendelson	Denver Office of Drug Strategy	Substance abuse epidemiology
Wendi Roewer	Drug Enforcement Administration	Drug control and intelligence
Mark Royer	Project Safe	Injection drug use outreach and research
Allison Sabel-Soteres	Denver Health and Hospitals	Medical biostatistics
Sarah Schmiege	Omni Institute	Research
Donald Shriver	Denver Police Department Crime Laboratory	Forensic chemistry
Dale Wallis	Denver Police Department	Narcotics
Jamie Van Leeuwen	Denver Drug Strategy Commission	Substance abuse planning and administration

SOURCE: Denver Epidemiology Work Group



**Exhibit 2. Number and Percentage of Treatment Admissions by Primary Drug Type, State of Colorado: 2002–2009**

<b>Drug</b>		<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>
Alcohol	<i>n</i>	6,890	7,263	9,873	10,189	11,481	10,977	11,755	12,040
	%	38.8	37.8	40.7	38.8	40.9	39.7	41.1	42.2
Marijuana	<i>n</i>	4,367	4,236	5,305	5,568	5,653	5,783	6,156	6,160
	%	24.6	22.0	21.9	21.2	20.1	20.9	21.5	21.6
	(excluding alcohol) %	40.2	35.4	36.8	34.7	34.0	34.7	36.6	37.4
Methamphetamine	<i>n</i>	2,078	2,794	3,846	5,084	5,053	4,914	4,543	4,123
	%	11.7	14.5	15.8	19.4	18.0	17.8	15.9	14.5
	(excluding alcohol) %	19.1	23.3	26.7	31.7	30.4	29.5	27.0	25.0
Cocaine	<i>n</i>	2,215	2,368	3,034	2,929	3,476	3,374	3,319	2,660
	%	12.5	12.3	12.5	11.2	12.4	12.2	11.6	9.3
	(excluding alcohol) %	20.4	19.8	21.1	18.3	20.9	20.3	19.7	16.2
Heroin	<i>n</i>	1,425	1,676	1,273	1,421	1,271	1,223	1,201	1,570
	%	8.0	8.7	5.2	5.4	4.5	4.4	4.2	5.5
	(excluding alcohol) %	13.1	14.0	8.8	8.9	7.6	7.3	7.1	9.5
Other Opioids <sup>1</sup>	<i>n</i>	412	541	614	713	824	961	1,113	1,475
	%	2.3	2.8	2.5	2.7	2.9	3.5	3.9	5.2
	(excluding alcohol) %	3.8	4.5	4.3	4.4	5.0	5.8	6.6	9.0
Depressants <sup>2</sup>	<i>n</i>	159	131	101	97	121	127	141	143
	%	0.9	0.7	0.4	0.4	0.4	0.5	0.5	0.5
	(excluding alcohol) %	1.5	1.1	0.7	0.6	0.7	0.8	0.8	0.9
Other Amphetamines/ Stimulants	<i>n</i>	105	78	56	57	52	36	55	45
	%	0.6	0.4	0.2	0.2	0.2	0.1	0.2	0.2
	(excluding alcohol) %	1.0	0.7	0.4	0.4	0.3	0.2	0.3	0.3
Hallucinogens <sup>3</sup>	<i>n</i>	43	31	27	33	35	31	38	31
	%	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1
	(excluding alcohol) %	0.4	0.3	0.2	0.2	0.2	0.2	0.2	0.2
Club Drugs <sup>4</sup>	<i>n</i>	12	37	56	50	47	59	67	68
	%	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2
	(excluding alcohol) %	0.1	0.3	0.4	0.3	0.3	0.4	0.4	0.4
Other <sup>5</sup>	<i>n</i>	59	77	90	92	88	142	181	195
	%	0.3	0.4	0.4	0.4	0.3	0.5	0.4	0.7
	(excluding alcohol) %	0.5	0.6	0.6	0.6	0.5	0.9	1.1	1.2
<b>Total</b>	<b>N</b>	<b>17,765</b>	<b>19,232</b>	<b>24,275</b>	<b>26,233</b>	<b>28,101</b>	<b>27,627</b>	<b>28,569</b>	<b>28,510</b>
	<b>(excluding alcohol) N</b>	<b>10,875</b>	<b>11,969</b>	<b>14,402</b>	<b>16,044</b>	<b>16,620</b>	<b>16,650</b>	<b>16,814</b>	<b>16,470</b>

<sup>1</sup>Includes nonprescription methadone and other opiates and synthetic opiates.

<sup>2</sup>Includes barbiturates, benzodiazepine tranquilizers, clonazepam, and other sedatives.

<sup>3</sup>Includes lysergic acid diethylamide (LSD), phencyclidine (PCP), and other hallucinogens.

<sup>4</sup>Includes Rohypnol®, ketamine (Special K), gamma hydroxybutyrate (GHB), and MDMA (ecstasy).

<sup>5</sup>Includes inhalants, over-the-counter, and other drugs not specified.

SOURCE: Drug/Alcohol Coordinated Data System, Alcohol and Drug Abuse Division, Colorado Department of Human Services

**Exhibit 3. Number and Percentage of Treatment Admissions by Primary Drug Type, Denver/ Boulder Metropolitan Area: 2002–2009**

<b>Drug</b>		<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>
Alcohol	<i>n</i>	2,009	2,360	3,551	3,575	4,408	4,321	4,586	4,597
	%	31.9	29.1	33.6	33.1	36.0	35.9	37.8	38.5
Marijuana	<i>n</i>	1,466	1,859	2,703	2,695	2,901	2,824	2,882	2,787
	%	23.3	22.9	25.6	24.9	23.7	23.5	23.7	23.3
	<i>(excluding alcohol)</i> %	34.2	32.3	38.5	37.2	37.0	36.6	38.2	37.9
Methamphetamine	<i>n</i>	516	946	1,271	1,494	1,696	1,672	1,540	1,373
	%	8.2	11.7	12.0	13.8	13.8	13.9	12.7	11.5
	<i>(excluding alcohol)</i> %	12.1	16.4	18.1	20.6	21.6	21.7	20.4	18.7
Cocaine	<i>n</i>	960	1,264	1,619	1,460	1,849	1,807	1,662	1,333
	%	15.3	15.6	15.3	13.5	15.1	15.0	13.7	11.2
	<i>(excluding alcohol)</i> %	22.4	21.9	23.1	20.2	23.6	23.4	22.0	18.1
Heroin	<i>n</i>	979	1,226	922	1,007	810	807	761	960
	%	15.6	15.1	8.7	9.3	6.6	6.7	6.3	8.0
	<i>(excluding alcohol)</i> %	22.9	21.3	13.1	13.9	10.3	10.5	10.1	13.1
Other Opioids <sup>1</sup>	<i>n</i>	208	300	340	434	412	400	472	627
	%	3.3	3.7	3.2	4.0	3.4	3.3	3.9	5.2
	<i>(excluding alcohol)</i> %	4.9	5.2	4.8	6.0	5.3	5.2	6.3	8.5
Depressants <sup>2</sup>	<i>n</i>	79	55	47	45	57	48	62	57
	%	1.3	0.7	0.4	0.4	0.5	0.4	0.5	0.5
	<i>(excluding alcohol)</i> %	1.8	1.0	0.7	0.6	0.7	0.6	0.8	0.8
Other Amphetamines/ Stimulants	<i>n</i>	34	31	24	21	34	17	28	21
	%	0.5	0.4	0.2	0.2	0.3	0.1	0.2	0.2
	<i>(excluding alcohol)</i> %	0.8	0.5	0.3	0.3	0.4	0.2	0.4	0.3
Hallucinogens <sup>3</sup>	<i>n</i>	15	18	16	17	25	17	16	15
	%	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1
	<i>(excluding alcohol)</i> %	0.4	0.3	0.2	0.2	0.3	0.2	0.2	0.2
Club Drugs <sup>4</sup>	<i>n</i>	5	22	29	24	24	39	42	35
	%	0.1	0.3	0.3	0.2	0.2	0.3	0.3	0.3
	<i>(excluding alcohol)</i> %	0.1	0.4	0.4	0.3	0.3	0.5	0.6	0.5
Other <sup>5</sup>	<i>n</i>	19	39	41	40	37	75	87	142
	%	0.3	0.5	0.4	0.4	0.3	0.6	0.7	1.2
	<i>(excluding alcohol)</i> %	0.4	0.7	0.6	0.6	0.5	1.0	1.2	1.9
<b>Total</b>	<b><i>N</i></b>	<b>6,290</b>	<b>8,120</b>	<b>10,563</b>	<b>10,812</b>	<b>12,253</b>	<b>12,027</b>	<b>12,138</b>	<b>11,947</b>
<b><i>(excluding alcohol)</i></b>	<b><i>N</i></b>	<b>4,281</b>	<b>5,760</b>	<b>7,012</b>	<b>7,237</b>	<b>7,845</b>	<b>7,706</b>	<b>7,552</b>	<b>7,350</b>

<sup>1</sup>Includes nonprescription methadone and other opiates and synthetic opiates.

<sup>2</sup>Includes barbiturates, benzodiazepine tranquilizers, clonazepam, and other sedatives.

<sup>3</sup>Includes lysergic acid diethylamide (LSD), phencyclidine (PCP), and other hallucinogens.

<sup>4</sup>Includes Rohypnol®, ketamine (Special K), gamma hydroxybutyrate (GHB), and MDMA (ecstasy).

<sup>5</sup>Includes inhalants, over-the-counter, and other drugs not specified.

SOURCE: Drug/Alcohol Coordinated Data System, Alcohol and Drug Abuse Division, Colorado Department of Human Services

Exhibit 4. Demographic Characteristics of Clients Admitted to Treatment, by Percentage, State of Colorado: 2009

Characteristics	Alcohol <sup>1</sup> Only or in Combo	Mari- juana	Cocaine	Meth- amphet- amine	Heroin	Other Opioids	Seda- tives	Other Stimu- lants <sup>2</sup>	Hallu- cino- gins	Club Drugs	All Other <sup>3</sup>
<b>Total (N=28,510)</b>	(12,040)	(6,160)	(2,660)	(4,123)	(1,570)	(1,475)	(143)	(45)	(31)	(68)	(195)
<b>Gender</b>											
Male	69.0	77.3	58.5	55.1	66.4	52.9	44.8	60.0	71.0	63.2	72.3
Female	31.0	22.7	41.5	44.9	33.6	47.1	55.2	40.0	29.0	36.8	27.7
<b>Race/Ethnicity</b>											
White	64.9	49.5	39.5	75.5	74.5	79.6	76.9	71.1	74.2	60.3	46.2
African- American	5.7	13.8	22.1	2.0	4.9	2.2	4.2	2.2	6.5	10.3	16.9
Hispanic	24.3	32.8	35.0	18.9	17.6	15.2	15.4	20.0	9.7	22.1	31.8
Other	5.1	3.9	3.5	3.5	3.1	3.1	3.5	6.7	9.7	7.4	5.1
<b>Age at Admission</b>											
Younger than 18	3.8	29.6	1.2	1.3	0.8	1.8	2.8	11.1	16.1	27.9	13.8
18–24	16.9	29.3	11.8	17.9	21.7	20.2	14.0	22.2	32.3	26.5	17.4
25–34	28.3	25.9	26.5	42.8	34.3	37.4	24.5	28.9	35.5	32.4	31.8
35–44	24.8	9.9	33.0	25.7	16.9	20.5	23.1	24.4	3.2	7.4	19.0
45–54	20.0	4.4	23.7	11.5	16.8	14.0	25.2	6.7	6.5	2.9	12.8
55 and older	6.2	0.9	3.8	0.7	9.6	6.1	10.5	6.7	6.5	2.9	5.1
<b>Route of Ingestion</b>											
Smoking	0.2	92.6	61.9	64.4	13.4	3.5	9.1	20.0	12.9	10.3	2.1
Inhaling	3.1	5.5	30.3	12.2	5.7	9.4	6.3	15.6	0.0	13.2	13.8
Injecting	0.0	0.1	6.3	21.3	79.0	7.4	2.1	6.7	0.0	7.4	1.0
Oral/Other	96.6	1.8	1.5	2.1	1.9	79.7	82.5	57.7	87.1	69.1	83.1
<b>Secondary Drug</b>											
Marijuana		Alcohol	Alcohol	Marijuana	Cocaine	Alcohol	Alcohol	Alcohol	Marijuana	Marijuana	Marijuana
	24.8	44.6	34.1	32.9	24.0	15.5	25.2	22.2	25.8	33.8	9.2
<b>Tertiary Drug</b>											
Cocaine		Alcohol	Alcohol	Alcohol	Mari- Juana	Alcohol	Alcohol	Alcohol	Alcohol	Alco- hol	Alcohol
	4.9	7.3	12.5	13.5	9.3	8.5	9.8	8.9	19.4	23.5	3.6

<sup>1</sup>Includes alcohol only or in combination with other drugs.

<sup>2</sup>Includes other stimulants (e.g., Ritalin®) and amphetamines (e.g., Benzedrine®, Dexadrine®, Desoxyn®).

<sup>3</sup>Includes over-the-counter drugs, inhalants, anabolic steroids, and other nonclassified substances.

SOURCE: Drug/Alcohol Coordinated Data System, Alcohol and Drug Abuse Division, Colorado Department of Human Services

Exhibit 5. Demographic Characteristics of Clients Admitted to Treatment, by Percentage, Denver/Boulder Metropolitan Area: 2009

Characteristics	Alcohol <sup>1</sup> Only or in Combo	Mari- juana	Cocaine	Meth- amphet- amine	Heroin	Other Opioids	Seda- tives	Other Stimu- lants <sup>2</sup>	Hallu- cino gins	Club Drugs	All Other <sup>3</sup>
Total (N=11,947)	(4,597)	(2,787)	(1,333)	(1,373)	(960)	(627)	(57)	(21)	(15)	(35)	(142)
<b>Gender</b>											
Male	66.5	77.5	59.0	55.6	63.8	52.8	43.9	57.1	66.7	57.1	75.4
Female	33.5	22.5	41.0	44.4	36.2	47.2	56.1	42.9	33.3	42.9	24.6
<b>Race/Ethnicity</b>											
White	63.4	44.1	38.0	78.5	70.6	81.8	73.7	71.4	66.7	51.4	38.7
African- American	9.3	20.3	27.8	2.5	7.0	2.9	0.0	4.8	13.3	14.3	20.4
Hispanic	21.6	31.4	30.3	15.4	18.4	10.7	24.6	14.3	6.7	25.7	35.2
Other	5.7	4.2	3.9	3.6	4.0	4.6	1.7	9.5	13.3	8.6	5.7
<b>Age at Admission</b>											
Younger than 18	3.2	34.2	1.1	1.5	0.6	1.6	1.8	9.5	13.3	28.6	13.4
18-24	15.3	27.5	11.8	17.3	20.8	21.1	17.5	19.0	20.0	22.9	18.3
25-34	29.8	24.7	24.8	43.3	32.9	39.4	24.6	19.0	46.7	34.3	31.0
35-44	25.2	8.9	33.2	27.6	17.2	20.9	24.6	38.1	6.7	8.6	19.7
45-54	20.6	3.9	25.1	9.9	18.4	11.3	24.6	9.5	0.0	2.9	12.7
55 and older	5.9	0.8	3.9	0.5	10.0	5.7	7.0	4.8	13.3	2.9	4.9
<b>Route of Ingestion</b>											
Smoking	0.3	89.8	58.7	58.7	14.9	4.1	8.8	14.3	6.7	8.6	1.4
Inhaling	5.8	8.3	35.6	14.8	5.2	12.1	12.3	28.6	0.0	20.0	14.1
Injecting	0.1	0.1	4.5	23.5	78.0	6.9	1.8	9.5	0.0	5.7	0.7
Oral/Other	93.8	1.8	1.2	3.0	1.9	76.9	77.1	47.6	93.3	65.7	83.8
<b>Secondary Drug</b>											
Marijuana	Marijuana	Alcohol	Alcohol	Marijuana	Cocaine	Alcohol	Alcohol	Alcohol	Marijuana	Marijuana	Alcohol
23.7	45.4	33.5	28.8	26.7	15.0	26.3	26.3	28.6	33.3	28.6	7.0
<b>Tertiary Drug</b>											
Cocaine	Alcohol & Cocaine	Marijuana	Alcohol	Marijuana	Alcohol	Alcohol	Benzo, Other Opioid & Marj	Cocaine	Alcohol	Alcohol	Alcohol & Marijuana
5.0	6.6, 6.5	11.2	12.7	8.4	7.2	5.3	5.3	14.3	26.7	22.9	2.1

<sup>1</sup>Includes alcohol only or in combination with other drugs.

<sup>2</sup>Includes other stimulants (e.g., Ritalin®) and amphetamines (e.g., Benzedrine®, Dexadrine®, Desoxyn®).

<sup>3</sup>Includes over-the-counter drugs, inhalants, anabolic steroids, and other nonclassified substances.

SOURCE: Drug/Alcohol Coordinated Data System, Alcohol and Drug Abuse Division, Colorado Department of Human Services

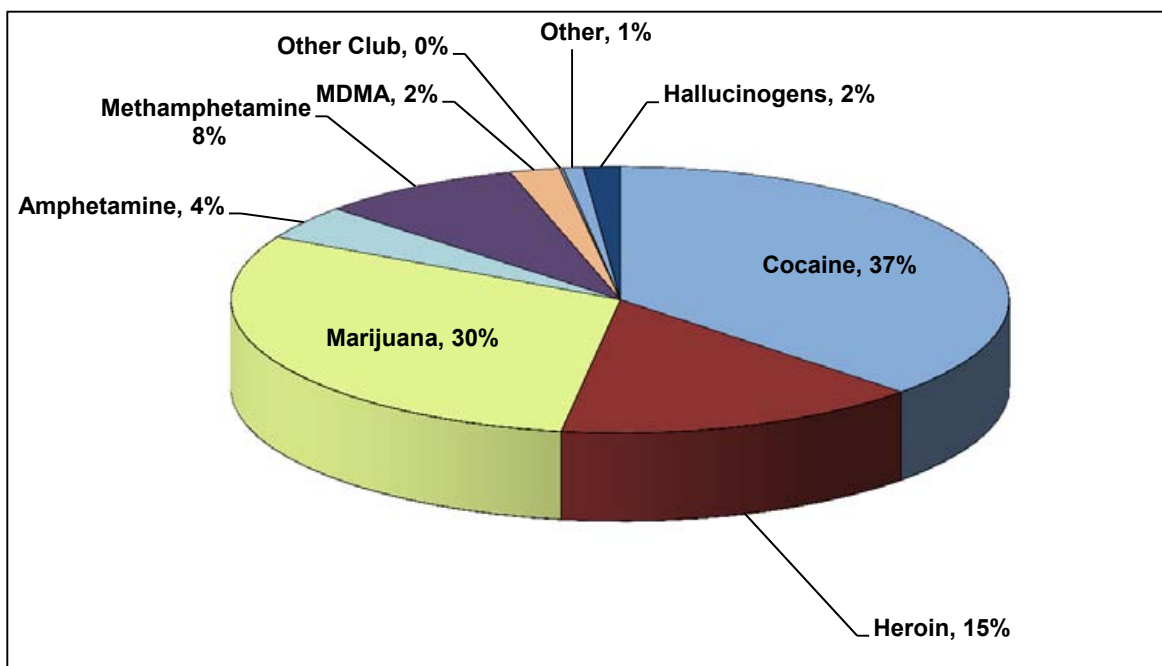
**Exhibit 6. Age of Onset, Years to Treatment, and Proportion of New Users (Less Than 3 Years) and New to Treatment (Tx) Admissions for Colorado and the Denver Area: 2009**

Area		Cocaine	Heroin	Other Opioids	Methamphetamine	Marijuana
<b>Statewide</b>		<b>(n=2,660)</b>	<b>(n=1,570)</b>	<b>(n=1,475)</b>	<b>(n=4,123)</b>	<b>(n=6,160)</b>
Age at Onset <sup>1</sup>	Mean	23.3	23.1	25.0	21.6	14.3
	Median	21.0	21.0	22.0	19.0	14.0
Years to 1st Tx <sup>1</sup>	Mean	12.6	8.2	7.7	10.4	9.4
	Median	10.0	4.0	6.0	9.0	6.0
% New Users <sup>1</sup>		14.6	40.6	22.9	11.7	23.2
% New to Tx <sup>2</sup>		32.6	26.5	40.9	31.2	52.0
<b>Denver Area</b>		<b>(n=1,333)</b>	<b>(n=960)</b>	<b>(n=627)</b>	<b>(n=1,373)</b>	<b>(n=2,787)</b>
Age at Onset <sup>1</sup>	Mean	22.9	22.8	24.2	20.7	14.3
	Median	21.0	21.0	22.0	19.0	14.0
Years to 1st Tx <sup>1</sup>	Mean	13.5	8.8	7.6	11.1	9.2
	Median	12.0	4.0	5.0	9.0	6.0
% New Users <sup>1</sup>		11.9	38.2	24.1	10.1	23.0
% New to Tx <sup>2</sup>		33.3	25.1	39.1	30.2	53.2

<sup>1</sup>Computed for first-time treatment admissions/no prior treatment admissions only.

<sup>2</sup>Proportion of clients with no prior treatment admissions, out of all treatment admissions.

SOURCE: Drug/Alcohol Coordinated Data System, Alcohol and Drug Abuse Division, Colorado Department of Human Services

**Exhibit 7. DAWN Live! ED Reports<sup>1</sup> of Illicit Drugs by Major Substances of Abuse: January–June 2009**

<sup>1</sup>Unweighted data.

SOURCE: DAWN Live!, OAS, SAMHSA, updated 12/10/2009

**Exhibit 8. DAWN Rates per 100,000 Population for Selected Drug-Related Visits, in the Denver Metropolitan Area and the United States: 2004–2008**

<b>ED Visit Rates per 100,000</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>
<b>Cocaine:</b>					
Denver Metropolitan Rate	93.1	173.0	205.6	204.9	168.1
U.S. Rate	162.3	163.7	183.9	183.7	158.6
<b>Heroin:</b>					
Denver Metropolitan Rate	33.0	44.7	52.9	53.3	52.7
U.S. Rate	73.2	63.4	63.6	62.5	66.0
<b>Marijuana:</b>					
Denver Metropolitan Rate	50.4	90.1	136.8	146.9	151.3
U.S. Rate	96.2	94.6	97.4	102.4	123.1
<b>Methamphetamine:</b>					
Denver Metropolitan Rate	32.5	76.1	57.5	49.6	35.5
U.S. Rate	45.3	37.1	26.8	22.6	21.8
<b>Narcotic Analgesics:</b>					
Denver Metropolitan Rate	30.1	53.1	67.5	87.5	104.4
U.S. Rate	49.4	57.0	67.5	78.7	100.6
<b>MDMA</b>					
Denver Metropolitan Rate	4.5	6.9	10	11.1	14.1
U.S. Rate	3.5	3.8	5.6	4.2	5.9
<b>Benzodiazepines</b>					
Denver Metropolitan Rate	23.7	44.5	57.4	68.8	71.8
U.S. Rate	49.0	64.2	65.6	72.6	89.4

SOURCE: DAWN, OAS, SAMHSA, weighted data, updated 9/9/2009

**Exhibit 9. Most Common Drugs in Denver Drug-Related Decedents, by Percentage of All Cases: 2005–2009**

Drug Contributing to Cause of Death	2005		2006		2007		2008		2009	
	N	%	N	%	N	%	N	%	N	%
Cocaine	82	48.2	85	50.3	75	39.7	60	28.3	53	25.6
Morphine	60	35.3	64	37.9	43	22.8	48	22.6	26	12.6
Alcohol	44	25.9	65	38.5	66	34.9	75	35.4	72	34.8
Codeine	36	21.2	36	21.3	18	9.5	19	9.0	11	5.3
Heroin	18	10.6	17	10.1	18	9.5	27	12.7	49	23.7
Methadone	17	10.0	16	9.5	14	7.4	15	7.1	15	7.2
Oxycodone	12	7.1	7	4.1	38	20.1	33	15.6	48	23.2
Methamphetamine	12	7.1	9	5.3	12	6.3	15	7.1	10	4.8
Acetaminophen	11	6.5	2	1.2	14	7.4	13	6.1	4	1.9
Diazepam	10	5.9	11	6.5	19	10.1	16	7.5	23	11.1
Alprazolam	10	5.9	5	3.0	13	6.9	15	7.1	20	9.7
Hydrocodone	7	4.1	10	5.9	8	4.2	22	10.4	18	8.7
Diphenhydramine	7	4.1	1	0.6	11	5.8	11	5.2	3	1.4
Clonazepam	2	1.2	0	0	1	0.5	4	1.9	8	3.9
Fentanyl	3	1.8	3	1.8	5	2.6	5	2.4	13	6.3
<b>Decedents</b>	<b>170</b>		<b>169</b>		<b>189</b>		<b>212</b>		<b>207</b>	

SOURCE: Denver Medical Examiner's Office Autopsy Reports, courtesy of Bruce Mendelson, Denver Office of Drug Strategy

**Exhibit 10. Number and Rate per 100,000 Population of Drug-Related Hospital Discharge Reports, for Selected Drugs, in Denver: 2001–2009**

Drug	2001	2002	2003	2004	2005	2006	2007	2008	2009
Alcohol (n)	10,606	10,429	9,812	10,560	10,060	10,288	10,116	11,361	11,750
Rate	1,893	1,859	1,733	1,856	1,759	1,788	1,747	1,948	2,002
Stimulants (n)	261	323	407	549	738	489	438	350	389
Rate	47	58	72	97	129	85	76	60	66
Cocaine (n)	1,298	1,369	1,423	1,753	1,843	1,862	1,634	1,502	1,399
Rate	232	244	251	308	322	324	282	258	238
Marijuana (n)	846	837	842	1,100	1,163	1,188	1,050	1,218	1,309
Rate	151	149	149	193	203	207	181	209	223
Opioid <sup>d</sup> (n)	744	720	818	804	987	916	1,038	1,040	1,193
Rate	133	128	145	141	173	159	179	178	203
Population	560,366	560,884	566,174	568,913	571,847	575,294	579,177	583,238	587,045

<sup>d</sup>Opioid category includes all narcotic analgesics and other opioids, including heroin.

SOURCE: Colorado Department of Public Health and Environment, Colorado Hospital Association

**Exhibit 11. Number of Statewide Drug-Related Calls to the Rocky Mountain Poison and Drug Center (Human Exposure Calls Only), in Denver: 2005–2009**

Drug	2005	2006	2007	2008	2009
Alcohol	884	868	858	916	837
Cocaine/Crack	107	129	91	104	63
Heroin/Morphine	24	25	21	23	29
Marijuana	78	45	70	61	54
Methamphetamine	127	29	31	51	60
Other Stimulants/ Amphetamines <sup>1</sup>	308	318	257	373	371
Club Drugs	49	47	49	55	35

<sup>1</sup>Other stimulants/amphetamines includes amphetamines, methylphenidate, caffeine, and other unknown stimulants.

SOURCE: Rocky Mountain Poison and Drug Center

**Exhibit 12. Federal Drug Seizures in Colorado: 2003–2008**

Drug	Quantity Seized					
	2003	2004	2005	2006	2007	2008
Cocaine	65.5 kgs <sup>1</sup>	36.0 kgs	131.5 kgs	135.1 kgs	44.0 kgs	52.6 kgs
Heroin	3.9 kgs	4.6 kgs	3.0 kgs	4.0 kgs	2.5 kgs	3.2 kgs
Methamphetamine	14.8 kgs	28.8 kgs	34.4 kgs	50.3 kgs	8 kgs	26.4 kgs
Methamphetamine laboratories	345	228	145	85	44	33
Marijuana	444.1 kgs	774.6 kgs	765.6 kgs	656.8 kgs	1,149.5 kgs	24,089.2 kgs
Ecstasy	1,128 tablets	0 tablets	0.6 kgs/ 2,104 du <sup>2</sup>	0.0kgs/ 1,103 du	0.0 kgs	0.0 kgs

<sup>1</sup>kgs=kilograms.

<sup>2</sup>du=dosage units.

SOURCE: State Factsheets for Colorado 2003–2008, DEA



**Exhibit 13. Denver<sup>1</sup> and United States NFLIS Samples Analyzed by Drug Type, Based on Top 50 Drugs, by Number and Percent: 2009**

Drug	Denver Area		United States	
	N	%	N	%
Cocaine	2,685	35.0	345,293	24.5
Marijuana/Cannabis	2,027	26.4	516,427	36.6
Methamphetamine	966	12.6	136,564	9.7
Heroin	483	6.3	99,045	7.0
MDMA	204	2.7	19,640	1.4
Oxycodone	152	2.0	42,900	3.0
BZP	128	1.7	12,712	0.9
Hydrocodone	113	1.5	40,481	2.9
Psilocin	79	1.0	3,403	0.2
Alprazolam	61	0.8	33,836	2.4

<sup>1</sup>Denver area in this comparison includes Denver, Jefferson, and Arapahoe Counties.

SOURCE: NFLIS, DEA, April 24, 2010

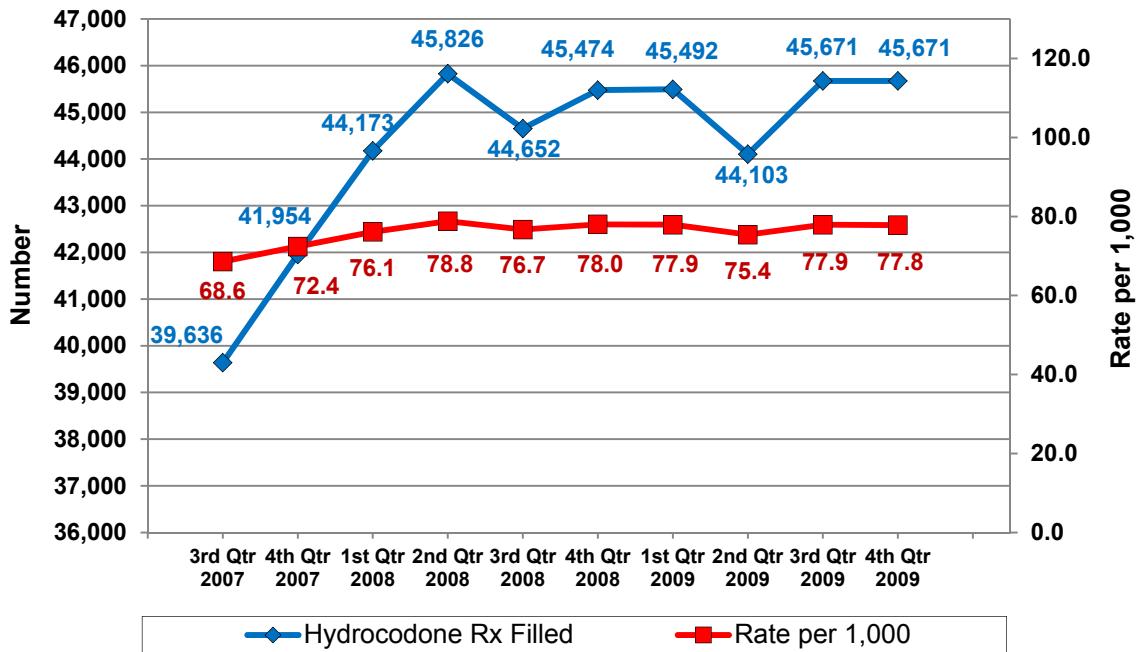
**Exhibit 14. Number and Percentage of Narcotic Analgesic Reports<sup>1</sup> in Drug-Related DAWN Live! ED Visits in Denver, by Specific Drug: January–June 2009**

Drug	N	%
Buprenorphine	23	1.0
Codeine	56	2.3
Fentanyl	111	4.6
Hydrocodone	582	24.3
Hydromorphone	147	6.1
Methadone	231	9.2
Morphine	228	9.5
Oxycodone	949	39.7
Propoxyphene	41	1.7
Other	23	1.0
<b>Total</b>	<b>2,391</b>	<b>100.0</b>

<sup>1</sup>Data are unweighted.

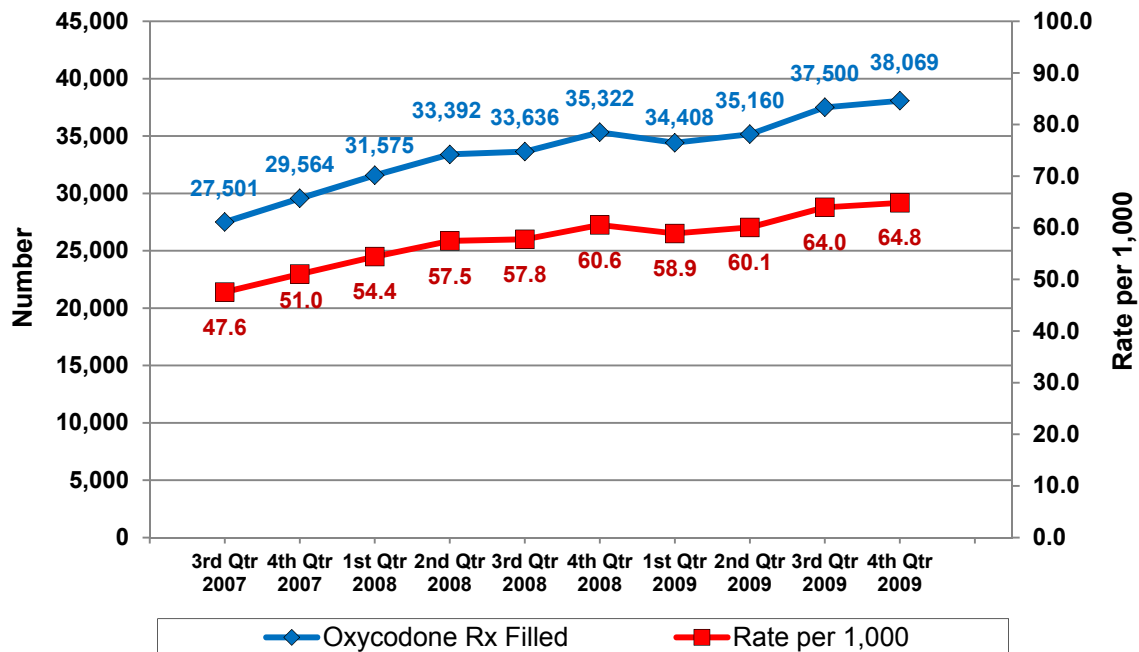
SOURCE: DAWN Live!, OAS, SAMHSA, updated 12/11/2009

**Exhibit 15. Number of Hydrocodone Prescriptions (Rx) Filled and Rate per 1,000 Population, in Denver: Third Quarter 2007 Through Fourth Quarter 2009**



SOURCE: Prescription Drug Monitoring Program, Colorado Department of Regulatory Agencies, Division of Registrations, Board of Pharmacy

**Exhibit 16. Number of Oxycodone Prescriptions Filled and Rate per 1,000 Population, in Denver: Third Quarter 2007 Through Fourth Quarter 2009**



SOURCE: Prescription Drug Monitoring Program, Colorado Department of Regulatory Agencies, Division of Registrations, Board of Pharmacy

**Exhibit 17. Average Prices of Selected Drugs in Denver: June 2009**

Drug	Wholesale Price	Mid-level Price	Retail Price
Powder Cocaine	\$18,000–\$22,000 kg	\$600–\$1,000 oz	\$100–\$150 gm
Crack Cocaine	\$15,000–\$20,000 kg	\$600–\$900 oz	\$20 rock \$70–\$120 gm
Heroin	\$24,000–\$35,000 kg (MBT)	\$800–\$1,600 oz (MBT)	\$130–\$250 gm (MBT)
Methamphetamine	\$12,000–\$20,000 lb (PM, MX) \$24,000–\$28,000 lb (Ice, MX)	\$1,300–\$2,200 oz (Ice, MX) \$1,000–\$1,500 oz (PM, MX) \$500–\$800 oz (PM, LP)	\$100–\$125 gm (Ice and Powder)
Marijuana	\$2,600–\$5,000 lb BC \$2,000–\$4,200 lb (DO) \$350–\$500 lb (MX)	\$80–\$100 oz (MX) \$300–\$400 oz (BC) \$350–\$400 oz (LP)	\$40 oz (low) (MX) \$100 oz (low) (BC)
Ecstasy/MDMA	\$3–\$6 tablet	\$5–\$17 tablet	\$10–\$25 tablet

Notes: kg=kilogram; gm=gram; lb=pound; oz=ounce; MBT=Mexican black tar; PM=powder methamphetamine; MX=Mexican produced, LP=locally produced; STL=small toxic laboratory; DO=domestic; HY=hydroponic; IG=indoor grown; CG=commercial grade; BC=BC bud from Canada.

SOURCES: National Drug Intelligence Center, DEA, Denver Division; Denver Police Department; Front Range High Intensity Drug Trafficking Area Task Force

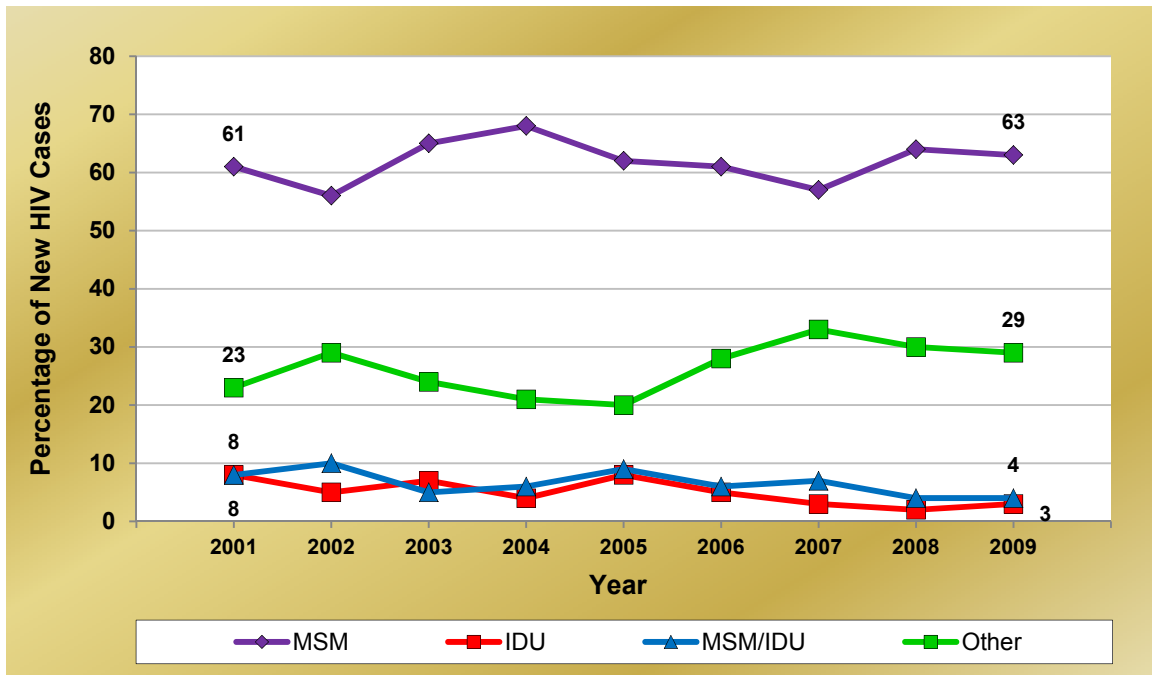
**Exhibit 18. Number and Percentage of AIDS Cases, by Exposure Category, in Colorado: Cumulative Through December 30, 2009**

Cumulative AIDS Cases by Exposure Category Through 12/30/09		
Exposure Category	AIDS Cases	
	Number	Percentage
MSM	6,347	66.0
IDU	870	9.1
MSM/IDU	1,021	10.6
Heterosexual	700	7.3
Other risk factor not identified	673	7.0
Total	9,611	100.0

Note: MSM=men who have sex with men; IDU=injection drug user.

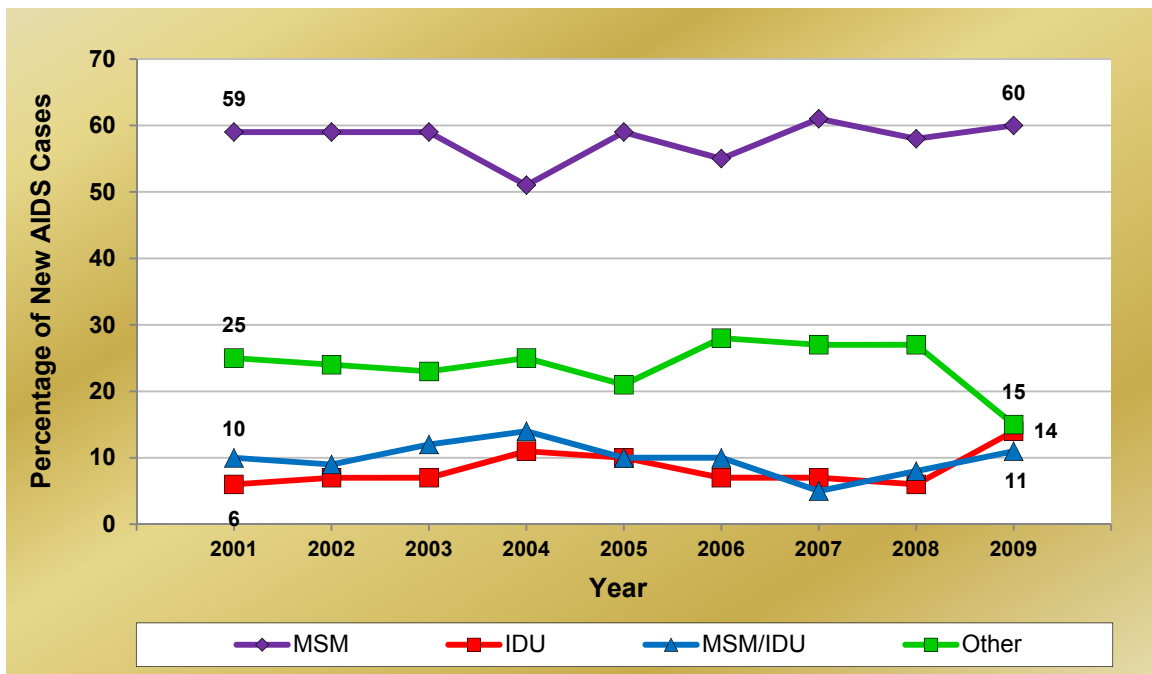
SOURCE: Colorado Department of Public Health and Environment

**Exhibit 19. Percentage of New HIV Cases, by Exposure Category and Year, in Colorado: 2001–2009**



Note: MSM=men who have sex with men; IDU= injection drug user.  
SOURCE: Colorado Department of Public Health and Environment

**Exhibit 20. Percentage of New AIDS Cases, by Exposure Category and Year, in Colorado: 2001–2009**



Note: MSM=men who have sex with men; IDU= injection drug user.  
SOURCE: Colorado Department of Public Health and Environment

# Drug Abuse in Detroit, Wayne County, and Michigan: 2009

Cynthia L. Arfken, Ph.D., and Yvonne E. Anthony, Ph.D., M.B.A., M.H.A.<sup>†</sup>

## ABSTRACT

*Cocaine primary treatment admissions accounted for 20.1 percent of Detroit publicly funded admissions in the first half of fiscal year (FY) 2010. Ninety-two percent of these admissions were for crack cocaine. Of the total cocaine admissions, 61 percent were male, 90.5 percent were African-American, and 87.2 percent were older than 34. Cocaine was the second most common Wayne County drug reported by the National Forensic Laboratory Information System (NFLIS) in 2009. In 2009, the Wayne County Medical Examiner (ME) reported 280 deaths involving cocaine, the highest number for all drugs. In the first half of FY 2010, heroin primary treatment admissions represented 32.3 percent of the publicly funded admissions; 62.8 percent were male, 79.7 percent were African-American, and 85 percent were older than 34. White clients had a younger mean age and were more likely to inject heroin than African-American clients: 36.2 versus 50.4 years, and 74.2 versus 34.7 percent. Heroin ranked third in number of items analyzed by forensic laboratories. The Wayne County ME reported an increase in the number of deaths with heroin detected—240 in 2009, compared with 210 in 2008. A focus group of law enforcement officials reported recent increased availability of heroin. Calls to the Poison Control Center about intentional use of heroin by humans numbered 70 in 2009, compared with 76 in 2008. Treatment admissions for marijuana*

*accounted for 17 percent of the publicly funded admissions during the first half of FY 2009. Of these admissions, 70.3 percent were male, 90.7 percent were African-American, and 28.6 percent were younger than 18. There was criminal justice involvement in 63.4 percent of the marijuana admissions. Marijuana represented the most common drug item reported by NFLIS in 2009. Michigan voters approved a Medical Marijuana referendum in the 2008 election but no major changes have been seen yet. The indicators for methamphetamine remained low. Ecstasy use was still troublesome, as evidenced by NFLIS, law enforcement, treatment admissions, and ME reports.*

## INTRODUCTION

### Area Description

Detroit and surrounding Wayne County are located in the southeast corner of Michigan's Lower Peninsula. In 2006, the Wayne County population totaled slightly less than 2 million residents (of whom 46 percent live in Detroit), and represented 19.2 percent of Michigan's 10.1 million population.

Michigan is the eighth most populous State in the Nation. In 2000, Detroit ranked 10th in population among cities (with 951,000 people), but the population has since dropped. Detroit has the highest percentage of African-Americans (82 percent) of any major city in the country. The following factors contribute to the probability of substance abuse in the State:

- Michigan has a major international airport in Detroit, 10 other large airports that also have international flights, and 235 public and private small airports.
- The State shares a 700-mile international border with Ontario, Canada. There are land crossings at Detroit (a bridge and a tunnel), Port Huron, and Sault Ste. Marie, and water crossings through three Great Lakes and the St. Lawrence Seaway, which connects to the Atlantic Ocean. Many places along the 85 miles of heavily devel-

<sup>†</sup>The authors are affiliated with Wayne State University and the Detroit Department of Health and Wellness Promotion.

oped waterway between Port Huron and Monroe County are less than one-half mile from Canada.

- Michigan has more than 1 million registered boats. In 2004, three major bridge crossings from Canada (Windsor Tunnel, Ambassador Bridge, and Port Huron) had 21.2 million vehicles cross into Michigan. Southeast Michigan is the busiest port on the northern United States border with Canada. Detroit and Port Huron have nearly 10,000 trains entering from Canada each year.

Additional factors influencing substance use in Detroit are:

- The percentage of individuals living below the Federal poverty level in 2000 (26.1 percent) was more than twice the national level (12.4 percent). The percentage has increased dramatically with the economic downturn.
- The percentage of working age individuals (age 21–64) with a disability is substantially higher than the national level (32.1 versus 19.2 percent, respectively).
- There are chronic structural unemployment problems. At the State level, the unemployment rate has been among the highest in the country since 2002, with no housing appreciation boom, high foreclosure rates, and dropping prices.
- Within the State, Detroit has one of the lowest rates of employed adults. Detroit’s labor force has dropped by 42 percent since 1975, while the number of people unemployed has more than doubled since 2000. Detroit’s unemployment rate is more than double that of surrounding suburban areas.

### Data Sources

Data for this report were drawn from the sources listed below:

- **Treatment admissions data** for the first half of fiscal year (FY) 2010 were provided by the Bureau of Substance Abuse and Addiction

Services, Division of Substance Abuse and Gambling Services, Michigan Department of Community Health (MDCH), for the city of Detroit for those clients whose treatment was covered by Medicaid or Block Grant funds. The data do not include admissions funded by the Department of Corrections. The city of Detroit uses a “Treatment on Demand” approach without a wait list (unless the client is seeking a specific provider).

- **Mortality data** were provided by the Wayne County Medical Examiner (ME) for calendar year (CY) 2009. The Wayne County ME provided data on deaths with positive drug toxicology for 2009. These drug tests were routine when the decedent had a known drug use history, was younger than 50, died of natural causes or homicide, was a motor vehicle accident victim, or there was no other clear cause of death.
- **Heroin purity data** were provided by the Drug Enforcement Administration (DEA) for 2008.
- **Drug intelligence data** were provided by the DEA and National Drug Intelligence Center.
- **Data on drug seizures** were provided by the National Forensic Laboratory Information System (NFLIS) for 2009. The report covers all of Wayne County.
- **Poison control case data** from contact data on cases of intentional abuse of substances for 2009 were provided by the Children’s Hospital of Michigan Poison Control Center in Detroit. This center is now the only poison control center in Michigan. To provide trend data, the report covers the eastern portion of the State.
- **Prescriptions filled** in the State of Michigan for 2009 were provided by the Board of Pharmacy, Department of Community Health.
- **Drug-related infectious disease data** were provided by the MDCH on newly diagnosed cases of acquired immunodeficiency syndrome (AIDS) and human immunodeficiency virus (HIV) as of April 1, 2010.

## DRUG ABUSE PATTERNS AND TRENDS

### Cocaine

For the first half of FY 2010, 20.1 percent of all Detroit publicly funded treatment admissions listed either powder cocaine or crack cocaine as the primary drug of abuse (exhibit 1), similar to 19 percent in FY 2009. Of the current admissions, 92 percent were for crack cocaine. Clients seeking treatment for cocaine were predominately male (61 percent), African-American (90.5 percent), and older (87.2 percent were 35 or older). There was criminal justice involvement in 28.2 percent of the cocaine admissions, and 39.5 percent were homeless at the time of admission. Cocaine ranked second in the percent of drug items seized in Wayne County and analyzed by forensic laboratories in 2009 (exhibit 2).

Cocaine was detected in 280 deaths during CY 2009 in Wayne County. This was an increase from 254 deaths with cocaine detected in CY 2008. Levamisole, a known contaminant of cocaine, was detected in 176 decedents. The number of calls for intentional human use of cocaine to the poison control center dropped from 159 in 2008 to 108 in 2009.

### Heroin

In the first half of FY 2010, 32.3 percent of Detroit publicly funded treatment admissions listed heroin as the primary drug of abuse (exhibit 1), making it the most common primary drug of abuse. Clients seeking treatment for heroin were likely to be male (62.8 percent), African-American (79.7 percent), and older (85 percent were 35 or older). There was criminal justice involvement in 14.8 percent of the heroin admissions, and 15.1 percent reported being homeless at time of admission. White clients had a younger mean age and were more likely to inject heroin than African-American clients: 36.2 versus 50.4 years, and 74.2 versus 34.7 percent.

Heroin ranked third in the number of drug items seized in Wayne County and analyzed by forensic laboratories (exhibit 2). Heroin was detected in 245 deaths during CY 2009 in Wayne

County, compared with 210 deaths during CY 2008. Deaths from heroin occurred elsewhere in Michigan, outside Wayne County. Calls to the poison control center for intentional human use of heroin had increased from 54 in CY 2007 to 76 in CY 2008 but were stable at 70 in CY 2009.

Heroin street prices remained stable and relatively low in Detroit. Nearly all heroin continued to be white in color, but Mexican black and brown heroin could be found. A wide range of purity could also be found, but it averaged 45.3 percent in 2008 for South American and 41.5 percent for Southwest Asian heroin. South America remained the dominant source, although heroin originating in Southwest Asia was identified. Law enforcement reports recent increased availability of heroin.

### Other Opiates/Narcotic Analgesics

Other opiates represented 1.3 percent of primary treatment admissions in Detroit during the first half of FY 2010 (exhibit 1). Of the 67 admissions, only 7 (10.4 percent) were for illicit methadone, with the remainder categorized as other opioids. Three opioids (hydrocodone, oxycodone, and codeine) were in the top 10 items detected in drug items seized in Wayne County and analyzed by forensic laboratories in 2009 (exhibit 2).

Toxicology findings from the Wayne County ME laboratory showed 106 decedents with methadone positivity. This number is similar to the 107 decedents in 2006 and 94 in 2007. Other opioids detected in decedents included hydrocodone (261 in 2009, compared with 183 in 2007) and oxycodone (64 in 2009, compared with 43 in 2007).

Poison control center calls showed increases from 2008 in intentional human usage of hydrocodone (512 in 2008 versus 541 in 2009), oxycodone (68 in 2008 versus 98 in 2009), and methadone (60 in 2008 versus 98 in 2009).

The number of prescriptions filled in Michigan across different schedules, including for opioids, continued to climb in 2009. For schedule II medications, the number of prescriptions filled increased from 2,977,576 in 2008 to 3,178,092 in 2009. For schedule III medications, the number of

prescriptions filled increased from 6,556,999 in 2008 to 6,791,130 in 2009.

According to intelligence reports, other opiates were common and viewed as better quality, especially oxycodone. Due to the volume of cases, some police no longer take reports of stolen or lost prescriptions. Because of difficulty in prosecuting diversion cases, the DEA is the sole agency investigating these cases.

## Marijuana

Marijuana indicators remained mostly stable but at highly elevated levels. Domestic, Canadian, and Mexican marijuana remained widely available.

In Detroit, marijuana accounted for 17 percent of all publicly funded substance abuse treatment admissions in the first half of FY 2010 (exhibit 1). Clients seeking treatment for marijuana were likely to be male (70.3 percent), African-American (90.7 percent), and have criminal justice involvement (63.4 percent). Approximately one-fourth of the admissions (28.6 percent) were younger than 18, but this is a decline from FY 2007 when it was 38.7 percent.

Marijuana was the most common drug item seized in Wayne County and analyzed by forensic laboratories in 2009 (exhibit 2). The Wayne County ME does not test for marijuana in decedents. The number of poison control center calls for human intentional use of marijuana increased from 84 in 2007 to 99 in 2008 but declined in 2009 to 68.

Michigan voters approved a Medical Marijuana referendum in the 2008 election with implementation in April 2009. Law enforcement did not report any change in seizures or arrests following the implementation.

## Stimulants

In Detroit during the first half of FY 2010, treatment data showed that admissions for stimulants other than cocaine as primary drugs of abuse included two admissions for methamphetamines. The ME found 12 deaths with positive toxicology for methamphetamine during CY 2007 but only 5

in CY 2008 and 3 in CY 2009. The poison control center recorded two calls for intentional human usage of methamphetamine in CY 2000. Methamphetamine ranked ninth in number of drug items seized in Wayne County and analyzed by forensic laboratories (exhibit 2).

## Club Drugs

The club drugs category included MDMA or ecstasy (3,4-methylenedioxymethamphetamine), GHB (gamma hydroxybutyrate), flunitrazepam (Rohypnol®), and ketamine. There were 14 treatment admissions for ecstasy during FY 2007, and 5 during the first half of FY 2010.

Toxicology findings from the Wayne County ME laboratory showed five decedents with MDMA during CY 2008 and five during CY 2009. MDMA ranked fifth in percent of drug items seized in Wayne County and analyzed by forensic laboratories in 2009 (exhibit 2).

## INFECTIOUS DISEASES RELATED TO DRUG ABUSE

As of April 1, 2010, there were 127 newly diagnosed cases of AIDS/HIV in Michigan for CY 2010. The newly diagnosed people were disproportionately located in the metropolitan Detroit area (five-county area) (70 versus 42.4 percent of the general population), African-American (64 versus 14.3 percent of the general population), and male (88 percent). Although the percentage of newly diagnosed cases with a history of injecting drugs had been decreasing in recent years (bottoming out at 5 percent in 2009), the percent increased in early 2010 to 15 percent. This change may be due to more testing, especially at substance abuse treatment programs and the needle exchange.

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**Exhibit 1. Percentage of Treatment Admissions<sup>1</sup>, by Primary and Secondary Drugs of Abuse, Detroit: First Half of FY 2010<sup>2</sup>**

Drug	Primary Drug of Abuse (%)	Secondary Drug of Abuse (%)
NONE	0.0	57.5
Alcohol	28.8	13.9
Heroin	32.3	1.2
Cocaine	20.1	16.4
Other Opiates	1.6	1.2
Marijuana	17.0	8.8
Other Drugs	0.2	0.8

<sup>1</sup>N=4,288; 92 percent of the cocaine is crack.

<sup>2</sup>Data are for July–December 2009.

SOURCE: Michigan Department of Community Health, Division of Substance Abuse and Gambling Services, Bureau of Substance Abuse and Addiction Services

**Exhibit 2. Number and Percentage of Most Commonly Seized Drug Items Analyzed in Wayne County: CY 2009<sup>1</sup>**

Substance	Number of Items Seized	Percent of Items Seized
Marijuana/Cannabis	4,886	48.3
Cocaine	2,677	26.4
Heroin	1,108	11.7
Hydrocodone	338	6.4
MDMA (3,4-Methylenedioxymethamphetamine)	164	1.6
BZP (1-Benzylpiperazine)	144	1.4
Alprazolam	134	1.3
Oxycodone	65	0.6
Methamphetamine	33	0.3
Codeine	28	0.3
Other	472	4.7
<b>Total Items Reported</b>	<b>10,121</b>	<b>100.0</b>

<sup>1</sup>Data are for January–December 2009.

Note: Percentages may not sum to the total due to rounding.

SOURCE: NFLIS, DEA

# Illicit Drug Use in Honolulu and the State of Hawaii: 2009

D. William Wood, M.P.H., Ph.D.<sup>1</sup>

## ABSTRACT

*This report presents 2009 data on illicit drug use in Honolulu and the State of Hawaii. During this year, cocaine treatment admissions increased, and deaths and police cases related to cocaine decreased. Heroin indicators were mixed; treatment admissions decreased, heroin-related deaths increased (although all opiate deaths decreased), and police cases decreased. Treatment admissions for marijuana increased over 2008, and deaths related to marijuana also increased; police cases were stable. While police cases related to methamphetamine were down, both treatment admissions and deaths related to methamphetamine increased. Despite a downturn in the general economy in Hawaii, the drug economy was stable or increasing slightly.*

## INTRODUCTION

This report presents current information on illicit drug use in Honolulu and the State of Hawaii, based on the Honolulu Community Epidemiology Work Group (CEWG), which is described later in this section. The Honolulu CEWG has been operational for 21 years and was established at the suggestion of the National Institute on Drug Abuse as a response to the many reports of a “new” drug arriving on Hawaii’s shores. Methamphetamine—“Batu,” “Shabu,” “crystal,” or “ice” as it was known at the time—has had a profound influence on the health and social status of residents of the Hawaiian islands. Methamphetamine (methamphetamine hydrochloride [HCl]) in its purest and crystalline

form has now impacted the entire Nation in one form or another. This report continues to track the indicators for that drug as well as the other drugs that are prevalent in Hawaii.

## Area Description

During this reporting period, the national recession finally came to the shores of Hawaii. With tourism as the major industry for the State, a downturn in the economy was inevitable. Regrettably, the State’s response to the downturn was harsh and immediate, with massive cuts in the “discretionary funds” allocated to safety net services for marginalized populations. Social service agencies, already stressed by the increasing load of newly unemployed, have had their subsidy grants from the State terminated or cut by double-digit percentages. In addition, “reduction in force” orders were issued by the Governor, with double-digit terminations occurring in most State agencies and departments. Schools have been placed on a furlough system, with 21 days of instruction terminated because of budget cuts. (Hawaii already had the shortest school year in the Nation and now offers 120 days of instruction per year.) The ripple effect of these measures can readily be seen with families having less income, higher expenses for child care during furlough days, and a high sense of uncertainty of what lies ahead. The State’s “Council of Revenues” had predicted a slight slowing of the economy for 2008 but now suggests that the economy will continue in a free fall for at least 2 years; a recovery is not likely to begin until 2015. Last year’s closure of two airlines serving Hawaii has been compounded with small businesses becoming bankrupt and larger industries following the State’s lead and reducing their employment rolls. Hotel occupancies initially plunged in 2008 and are not expected to increase to any extent until after the mainland recovers from this economic recession. Unemployment in 2009 averaged about 8.5 percent, and it was nearly 10 percent at the end of the year.

Under normal circumstances, the population of Hawaii contains roughly 10 percent military residents and their dependents. During this

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period (2009), the deployment and redeployment of military—active duty, National Guard, and Reserves—to Iraq and Afghanistan continued to have a negative influence on the State’s economy. There are fewer civilian jobs on the bases, families of deployed active duty have departed for their family homes on the mainland, and there has been a general decline in purchasing power of families whose primary earner has lost their regular wage or is forced to live within the military wage structures.

After the boom in housing prices during 2004, 2005, and 2006, the current prices have dropped about 9 percent. However, after the initial drop, prices have remained relatively stable throughout the year, with the only visible sign of change being the length of time homes were on the market. Rental prices have increased due to declines in the supply of existing rental property. However, the availability of new rentals increased during the year, which may force rental prices down. During the first quarter of 2009, noticeable numbers of foreclosure notices appeared in the newspaper, but the crisis remained somewhat hidden to the general population. However, with fewer employed and additional expenses in families, foreclosures have risen to their highest number since statehood (1959).

During 2009, the local High Intensity Drug Trafficking Area (HIDTA) agency again successfully seized record amounts of methamphetamine and marijuana; this has heightened awareness about drug trafficking within the State. There have been reductions in the numbers of drug cases reported by all police departments in the State. However, treatment data showed increases in admissions for methamphetamine and cocaine, and the medical examiner (ME) for Honolulu reported increases in the number of positive toxicology screens for methamphetamine and cocaine among decedents, with the annual rate approaching that of 2004.

### Data Sources

Data for this report usually comes from the Honolulu CEWG. For a variety of reasons, the Honolulu CEWG was unable to hold a face-to-face meeting

prior to this report. This was the first biannual meeting to be cancelled since the group began in 1989. Therefore, data were collected directly from the member agencies for inclusion in this report. The Hawaii HIDTA program office facilitated acquisition of data from the Drug Enforcement Administration (DEA) and the Honolulu Police Department (HPD). The County ME’s Office provided data on toxicology screens from decedents for 2009 and participated in a consultation to clarify their data. The State’s Alcohol and Drug Abuse Division submitted data from the State treatment data system. This report is focused only on drug activities for the calendar year 2009. Specific data sources are listed below:

- **Treatment admissions and demographic data** were provided by the Hawaii State Department of Health, Alcohol and Drug Abuse Division (ADAD). Previous data from ADAD are updated for this report whenever ADAD reviews its records. These data represent all State-supported treatment facilities (90 percent of all facilities). Approximately 5–10 percent of these programs and two large private treatment facilities do not provide data. During this reporting period, approximately 45 percent of the treatment admissions were paid for by ADAD; the remainder were covered by State health insurance agencies or by private insurance. The rate of uninsured for the State was about 10 percent.
- **Drug-related death data** were provided by the Honolulu City and County ME Office for 1991 through 2009. These data are based on toxicology screens performed by the ME Office on decedents brought to them for examination. The types of circumstances that would lead to a body being examined by the ME include unattended deaths, deaths by suspicious cause, and clear drug-related deaths. While the ME data are consistent, they are not comprehensive and account for only about one-third of all deaths on Oahu. To allow a direct comparison between ME data and treatment data, the ME data were multiplied by a factor of 10 on report exhibits.

- **Law enforcement case data** for 2009 were received from the HPD Narcotics/Vice Division.
- **Drug price data** were provided for 2009 by the HPD, Narcotics/Vice Division.
- **Uniform Crime Reports (UCR) data** were accessed from the State's Attorney General's Web site for 1975–2008.

## DRUG ABUSE PATTERNS AND TRENDS

### General Comments

Hawaiians<sup>2</sup> and Caucasians remained the majority (66.2 percent of all admissions) among the 17 identified ethnic groups (plus the “other” and “unknown/blank” categories) accessing ADAD facilities for substance abuse treatment. During 2009, 43.4 and 21.4 percent of the admissions to treatment services were Hawaiian or Caucasian, respectively. All other groups represented significantly lower proportions of admissions. A greater than 2:1 ratio of males to females characterized treatment admissions (64.2 percent male); clients younger than 18 (29.8 percent) and clients in the 25–34 (22.4 percent) and 35–44 (18.0 percent) age groups dominated admissions. More than one-third (38.9 percent) of admissions were from the criminal justice system and court referrals, 8.5 percent came from State schools, 4.0 percent came from Child Protection Services, and 5.5 percent were from other health care providers. Thirty percent of all admissions were students.

Methamphetamine was once again the leading primary substance of abuse for clients admitted to treatment, accounting for 35.4 percent of all admissions in 2009. Marijuana remained the third most frequently reported primary substance for treatment admissions (26.0 percent), with alcohol (28.7 percent) the second primary substance

self-reported on admission to treatment. As in other jurisdictions, almost all admissions were polydrug treatment admissions, and most listed alcohol as a substance of abuse in addition to the primary drug at admission. While marijuana abuse accounted for the majority of treatment admissions among clients younger than 18 (the most frequently admitted age group), the abuse of ice or crystal methamphetamine remained the major treatment category for this group.

The police data used in this report represent HPD data. In previous reports, attempts have been made to include whatever data were available from neighbor island police departments. The frequency and consistency of reporting made it impossible to continue including data from neighbor island police departments; only HPD data are now reported.

During 2009, drug prices remained relatively stable in most categories (exhibit 1). Methamphetamine prices were down; prices were down for powdered white heroin, now more available on the street, but up for black tar heroin. Powder cocaine prices were also up, although crack prices have remained stable since 2007. The size of the drug supply seemed stable, with seizures having little impact on price structure. The drop in purity mentioned in previous reports had little effect on price; both price and purity remained high.

### Cocaine/Crack

Powder cocaine and crack treatment admissions in Hawaii increased slightly during the current period. There were 244 treatment admissions in 2005, compared with 378 in 2006, 349 in 2007, and 316 in 2008. In 2009, there were 326 cocaine-related treatment admissions in Hawaii (exhibit 2). This suggests that either the amount of cocaine being used by cocaine users or the number of users listing cocaine as their primary drug, after a decline of several years, has begun to rise. There may be an association between the reported changes in methamphetamine admissions and those of cocaine admissions. Powder cocaine/crack ranked fourth (with 2.2 percent of admissions) among primary drugs of treatment admissions, after methamphetamine, alcohol, marijuana, and other drugs. The

<sup>2</sup>Hawaiians are defined as those who state on admission that they are of Hawaiian ancestry and may or may not be pure Hawaiian.

number of admissions with cocaine as a secondary or tertiary drug was not reported by the ADAD.

The Honolulu ME reported 19 deaths with a cocaine-positive toxicology screen in 2009, compared with 21 deaths in 2008, 29 deaths in 2007, 27 deaths in 2006, and 15 deaths in 2005 (exhibit 2). (ME data have been adjusted by multiplying all death data by a constant of 10 to allow for their presentation along with treatment data.) In 2004, there were 22 deaths, compared with 22–26 in 1999–2003. This finding reinforces the continual decline in cocaine use shown in treatment data over the past decade. The ME data do show a marked increase for 2006 and a smaller one for 2007. However, the 2008 data showed a return to the decade average for cocaine-positive toxicological screens among decedents, and the 2009 data continued that trend.

According to the HPD, the price of street cocaine has been stable, although the price has risen slightly at the wholesale level over the past several years. One-quarter gram of crack sold for \$20–\$40 in 2009; the same amount of powder cocaine was listed at the same price by the HPD (exhibit 1). Police cases for cocaine/crack were at a decade high in 2006 with 305 cases (a 111-percent increase from 2005), declined to 248 cases in 2007 (an 18.9-percent decrease), and totaled 145 (a 41.5-percent decrease) in 2008 and 121 in 2009 (exhibit 3). Cocaine seizures by the HPD increased to 9,343.3 grams of powder cocaine and 481.5 grams of rock cocaine in 2006 and continued to rise to 12,571.4 grams of powder and 731.7 grams of rock in 2007. In 2008, 14,364 grams of powder and 67.9 grams of rock cocaine were seized and analyzed. In 2009, powder cocaine seizures were lower than in the previous years, at 1,769 grams, but rock cocaine seizures increased to 1,926 grams, which was three times the total amount of the rock cocaine seized in the previous 4 years combined.

### **Heroin and Other Opiates**

Heroin in Honolulu is almost certainly black tar heroin. However, 2009 data indicated that the presence of heroin in the community was declining

rapidly in Honolulu. As has been the case for decades, black tar heroin was readily available in all areas of the State. China white heroin has been uncommon in Hawaii for many years, but it was occasionally available for a premium price. Drug items seized and identified as heroin (1,410 grams of black tar and no white powder heroin) were much lower in 2009 than in 2008 (3,151 grams of black tar and 0.52 grams of powder). Seizures were minimal in 2007 (33 grams of black tar and 0.1 grams of powder) and in 2006 (1.63 grams of black tar and 1.55 grams of powder). In 2005, 3,602 grams of black tar and 18.5 grams of white powder were seized and identified as heroin. In total, the amount of drug items seized and identified as heroin over the past 5 years has been small. Relatively little heroin has been found in the community, although the amounts vary considerably from year to year. According to the HPD, black tar heroin prices in 2008 in Honolulu remained stable at \$20–\$50 per one-quarter gram, \$1,000–\$1,800 per one-quarter ounce (7 grams), and \$2,400–\$4,000 per ounce (exhibit 1). Powder heroin, not mentioned for several years in price data, was \$30–\$70 per one-quarter gram, \$100–\$175 per one-half “Teen,” and \$350–\$500 per 8-ball.

A continuation of the 4-year decrease in heroin treatment admissions in Hawaii (exhibit 4) occurred in 2009. In 1998, record levels of treatment admissions were recorded, with more than 500 individual admissions that year. In 2009, however, heroin ranked seventh if considered alone (1.9 percent) or fifth if considered along with other opiate admissions (4.4 percent) among total treatment admissions.

The Honolulu ME reported that deaths in which opiates were detected fell to 73 in 2009, slightly down from the 77 in 2008 (not including 17 deaths with methadone appearing in the toxicology screen). This compares with a 4-year increase in opioids being detected in decedents from 2004 through 2007. However, the residuals of heroin versus morphine and other opiates could not be definitively separated for many of the cases, leaving the ME unable to accurately determine which cases were heroin and which were not (exhibit 4).

Because of this, all opiate deaths are shown along with heroin deaths in exhibit 4. Decedents with a positive toxicological result for other opiates were primarily composed of those in whom hydrocodone, oxycodone, morphine, or methadone were detected. The exact medication (e.g., OxyContin®) was not specified.

The HPD reported only 7 heroin cases in 2009, compared with 53 heroin cases in 2008, 19 cases in 2007, 15 cases in 2006, and 31 cases in 2005 (exhibit 5). Despite the very high number of cases reported in 1998 (87), the decade-long trend in heroin cases has been a downward one from the 54 cases reported in 1995.

## Marijuana

Statewide, marijuana treatment admissions reached their highest level since data collection began in 1991, with 2,358 admissions in 2009. This is a continuation of the increases in admissions that have occurred since 2005. The 2004 dip in admissions was the end point of an 8-year continuous increase, which was preceded by another set of admission increases beginning in 1991 and ending with a precipitous drop from 1994 to 1995. As shown in exhibit 6, the 2009 admissions were nearly 10 times the admissions in 1992. Clients admitted for treatment in 2009 continued to be younger and referred by the courts and schools. While marijuana is listed as the primary drug of use at admission, many users of other drugs use marijuana as a secondary or tertiary drug of choice.

Between 1994 and 1999, the Oahu ME reported 12–21 deaths per year in which marijuana was found in the specimens submitted for toxicology screening (exhibit 6). Those numbers increased to 25 in 2000, 36 in 2001, 30 in 2002, 32 in 2003, 31 in 2004, 43 in 2005, 44 in 2006, and 45 in 2007 before declining in 2008 to 37 decedents. In 2009, the number of decedents with a positive tetrahydrocannabinol (THC) toxicological screen was 49, the highest reported number since the dataset began. In most instances, marijuana was used with other drugs if there was a drug-related death.

The HPD continued to monitor, but to not specifically report, case data for marijuana. Instead,

marijuana cases are lumped together with other drugs under the category “Detrimental Drugs,” an artifact of the UCR system. As mentioned in previous CEWG reports, possession cases remained steady at about 650 per year, although distribution cases have continued to increase. Law enforcement sources speculated that much of the Big Island’s marijuana is brought to Oahu for sale. Exhibit 7 shows 178 cases of detrimental drugs reported by the HPD in 2009. This compares with 186 cases in 2008, 125 cases in 2007, 120 cases in 2006, and 116 cases reported in 2005. In 2009, 6,814 marijuana plants and 81,966 grams of processed (dried) marijuana were seized on Oahu; in 2008, 4,737 marijuana plants were seized and a total of 95,188 grams of dried marijuana were seized. This compares with the 4,431 marijuana plants seized in 2007 and the 73,208 grams of dried marijuana seized the same year. The comparable numbers were 3,119 plants and 153,299 grams of dried marijuana in 2006, 2,099 plants and 148,522 grams of dried marijuana seized in 2005. As shown in exhibit 1, marijuana cost \$20–\$40 per joint and \$275–\$500 per ounce during 2008, a slight increase over previous years.

## Methamphetamine

Hawaii’s problem with methamphetamine has existed for more than 25 years, and methamphetamine remained the drug of choice among the 18–34 age group. The concerns of treatment providers and law enforcement officers have been well documented in these reports over the years. Hawaii’s methamphetamine has always been of extremely high purity<sup>8</sup>. As mentioned in previous reports, anecdotal evidence emerged in the latter part of 2005 that suggested that even though the price of the drug was constant, the purity had declined. According to HIDTA, the purity of several samples submitted during late 2005 was in the mid-50s rather than in the high 90s. The high purity

<sup>8</sup>Cunningham, James K., Lon-Mu Liu, and Russell Callaghan (2009). *Impact of US and Canadian precursor regulation on methamphetamine purity in the United States*. *Addiction*, (104: 441-453).

is a necessary but obviously not a sufficient condition for the smoking of the drug, Hawaii's chosen route of administration. No decline in users, cases, decedents, or clients admitted to treatment occurred during this apparent period of low purity.

Statewide, methamphetamine treatment admissions in 2009 reversed the previously reported 4-year decline and reached the highest recorded numbers of annual treatment admissions since 1991 (3,693 admissions). In 2008, there were 2,726 admissions (32.1 percent of total treatment admissions), representing a decline from 2005 ( $N=3,353$ ), 2006 ( $N=3,253$ ), and 2007 ( $N=3,209$ ). The increase in demand for treatment space for methamphetamine abusers has been nearly 2,000 percent since 1991, a situation that continues to outstrip the treatment system's capacity.

Between 1994 and 2000, the Oahu ME mentioned crystal methamphetamine in 24–38 cases per year (exhibit 8). In 2001, that number jumped to 54, and methamphetamine-positive decedents increased to 62 in 2002. In 2003, the number of decedents with methamphetamine detected in their toxicology reports was 56; in 2004 it was 67 decedents, and in 2005, a total of 88 decedents were found to have a methamphetamine-positive toxicology, representing 97.3 deaths per 1,000,000 population for the island of Oahu. From 2006 to 2009, the totals for methamphetamine-positive toxicology reports according to the ME were 67, 56, 40, and 73, respectively (exhibit 8).

Crystal methamphetamine prices remained constant for street purchases and for wholesale size purchases in 2008. The drug was sold in the islands as “clear” (a clear, white form) or “wash” (a brownish, less processed form). Ice prices were around \$100 for 0.25 grams, and wash was priced at approximately \$50 per 0.25 gram in 2008. This was similar to the 2007 street prices for small quantities of the drug. Wash sold for \$425 for 3.5 grams, and clear sold for \$700 for the same quantity, a decrease from the previous year (exhibit 1).

HPD methamphetamine case data for Honolulu has varied considerably from year to year. The highest recorded number of cases in the past decade was in 2003 (984), the lowest number (502)

was in 1996 (exhibit 9). For 2005, 962 cases were registered by the HPD, which was the second highest number of cases since data collection began in 1991. The 2006 number of cases was 722, and the number in 2007 declined again to 567 cases. The number of cases continued to decline in 2008, with 400 cases, and 2009, with 337 cases (exhibit 9).

Drug items seized and identified as methamphetamine increased in 2008. The total of 101,260.8 grams of ice seized and identified in 2008 was the highest in many years. In 2007, a total of 43,789.8 grams of ice was seized, compared with 32,277 grams of ice seized in 2006, 74,767 grams of ice seized in 2005, and 63,000 grams of ice seized in 2004. The sudden increases in the amount of methamphetamine seized and identified and the total absence of powder methamphetamine seems to suggest a change in methamphetamine use. This sort of pattern, although not as extreme, has occurred previously and without the indicators of drug shortage (high seizures as well as a general price increase). This should be followed another few data collection periods. The shift to cocaine use also parallels occurrences in other jurisdictions where users of methamphetamine have shifted to cocaine as a stimulant that is not as damaging and reserving use of methamphetamine for periodic “binge” use.

## Depressants

Barbiturates, sedatives, and sedatives/hypnotics are combined into this category. Few data were provided about these drugs in the islands. ADAD maintains three categories under this heading: benzodiazepines, other tranquilizers, and barbiturates. Treatment admissions for these drugs were minimal in terms of impact on the State system. The number of ME mentions for depressants in Honolulu has remained stable for several years at five or less. The HPD has not reported depressant case data since 1991. Neighbor island police reported fewer than 15 cases per year since 1996.

## Hallucinogens

Statewide, hallucinogen treatment admissions have totaled less than five per year during recent

periods. No hallucinogen ME mentions have been reported since the beginning of data collection. Prices for LSD (lysergic acid diethylamide) were \$4–\$6 per “hit” and \$225–\$275 per 100 dosage unit sheets (a “page”) in 2005 (exhibit 1).

### **OVERALL HPD DRUG CASES: 1992–2009**

Exhibit 10 shows the numbers of HPD cases for selected drugs by drug and by year. While there are some parallel increases and decreases in the number of drug cases over time, for the most part the drugs appear to increase and decrease quite independently of one another. Exceptions are the concomitant increases in cocaine cases and methamphetamine cases from 1991 to 1994, the rather rapid decrease in marijuana cases and cocaine cases between 1995 and 2002, and the inverse relationship demonstrated between the decline in methamphetamine cases in 2005 and the increase in cocaine cases during the same time period.

### **NATIONAL FORENSIC LABORATORY INFORMATION SYSTEM (NFLIS) DATA**

Exhibit 11 shows NFLIS data for Honolulu for 2007 through 2009. The data originate in the HPD forensic laboratory and relate to drugs seized and otherwise collected in the performance of the department’s investigation and enforcement duties.

Within the data presented in this exhibit are several findings that relate to the dominance of methamphetamine within the drug community of Hawaii. First, the proportion of all samples collected that were methamphetamine ranged between approximately 45 and 52 percent across the 3 years of data. However, it is important to note that for 2009, after a notable decline in methamphetamine samples for 2008, a 4-percent increase in such samples was reported. The second most commonly occurring drug in the samples was marijuana/cannabis, and cannabis proportions were constant between 25 and 28 percent. Third on the list of drugs consistently appearing across the 3 years was cocaine; cocaine identifications ranged

between 14 and 18 percent. Heroin was usually the fourth drug in terms of proportion of all drugs sampled across the 3 years and was consistently between 1 and 2 percent. These four drugs—methamphetamine, marijuana/cannabis, cocaine and heroin—represent a cumulative total of between 86.4 and 92.4 percent. However, in 2009, MDMA (3,4-methylenedioxymethamphetamine) samples were notable for their numbers, exceeding heroin numbers. All other drugs represented between 6 and 11 percent of the total samples tested.

### **DRUG SEIZURES IN HAWAII: 2005–2009**

Exhibit 12 shows HPD report seizure data for the major drugs found in Honolulu from 2005 to 2009. Cocaine data are separated and categorized by the form of the drug at seizure. While powder cocaine is not nearly as common on the streets of Hawaii as is rock or crack cocaine, the seizure data suggest the reverse, with many more grams of powder cocaine seized than grams of rock cocaine. However, information from both street informants and the police confirm the original statement. In addition, seizure data show a different pattern of powder seizures compared with rock cocaine seizures. Powder seizures peaked in 2006, whereas the rock cocaine seizures reached their highest numbers in 2007 and 2009.

Heroin in Honolulu is almost totally black tar heroin from Mexico. The seizure data confirm this statement over the 5-year period, with many times more black tar heroin seized than white powder. However, the relative amounts of heroin, regardless of type, are quite small compared with the amount of other drugs seized. No discernable pattern of seizures based on year of seizure can be seen.

Seizure of marijuana plants has undergone considerable change in the past decade in Hawaii. The former “operation green harvest,” which was a collaborative effort of the National Guard and the local police departments, was stopped during this period, resulting in a large reduction in the number of plants seized on all islands. The number of plants seized each year has increased by more than three times during this time period.



Methamphetamine seizure data do not differentiate between ice and wash, or between solid versus liquid forms of the drug. Discussions with HPD sources suggest that there was little wash or liquid methamphetamine in Hawaii during this reporting period, suggesting that the imported drug was already in high purity ice form. It is therefore expected that most, if not all, of the methamphetamine seized was ice.

MDMA/ecstasy is rarely reported in Honolulu indicators. NFLIS is the primary source of data with respect to the presence of ecstasy in Hawaii. The

lack of HPD seizure data for MDMA corresponds with the low number of MDMA items seized and identified by NFLIS laboratories (exhibit 11).

*For inquiries concerning this report, please contact D. William Wood, Ph.D., Department of Sociology, University of Hawaii at Manoa, 2424 Maile Way, Room 247 Saunders Hall, Honolulu, HI 96822, Phone: 808-956-7693, Fax: 808-965-3707, E-mail: [dwwood@hawaii.edu](mailto:dwwood@hawaii.edu).*

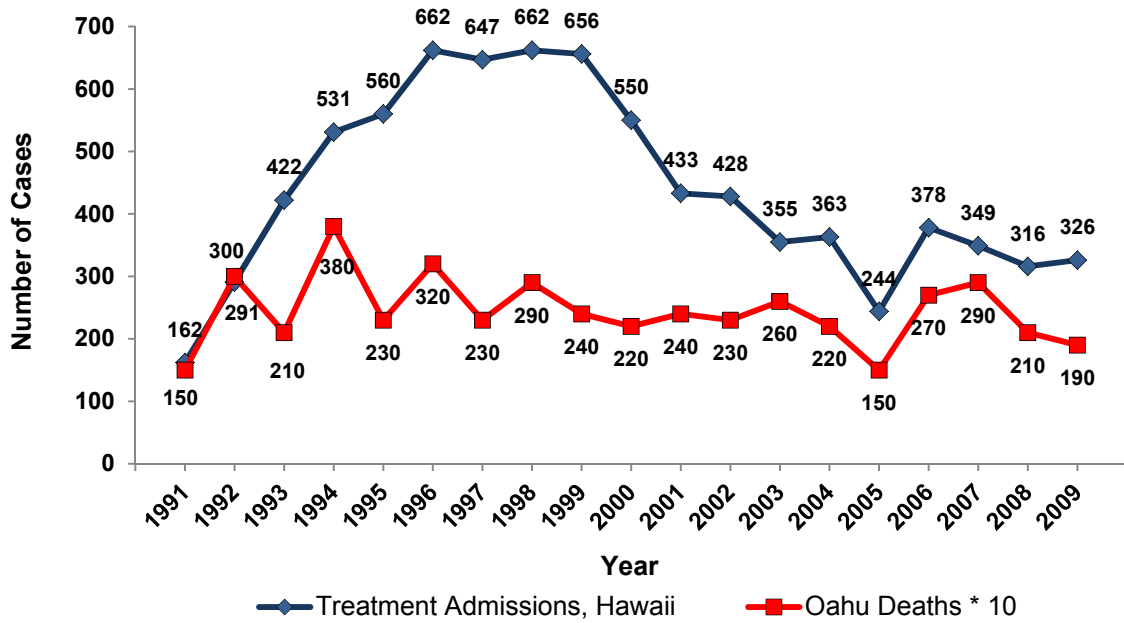
**Exhibit 1. Street Prices of Narcotics/Dangerous Drugs, City and County of Honolulu: As of 4/21/09**

Drug Type	Paper	½ Teen	Teen/“T”	8-Ball	Quarter	Half	“O”	“LBS”	“Kilo’s”
	0.25 grams	1/32 oz. 0.88 grams	1/16 oz. 1.77 grams	1/8 oz. 3.5 grams	¼ oz. 7.0 grams	½ oz. 14.175 grams	Ounce 28.35 grams	Pound 453.59 grams	2.2 Lbs. 2,2046 lbs.
Crystal Methamphetamine	\$50-\$100	\$125-\$250	\$250-\$350	\$425-\$700	\$650-\$1,500	\$1,200-\$2,400	\$2,300-\$3,600	\$28,000-\$42,000	\$70,000
Heroin, Powder	\$30-\$70	\$100-\$175	--	\$350-\$450	--	--	\$1,800-\$2,500	\$30,000	\$70,000
Black Tar	\$20-\$50	\$100-\$150	\$300-\$500	\$600-\$1,000	\$1,000-\$1,800	--	\$2,400-\$4,000	--	--
Cocaine, Powder	--	\$150-\$200	--	\$300-\$500	\$500-\$800	--	\$1,200-\$2,000	\$18,500-\$25,000	\$35,000-\$45,000
Rock Cocaine	\$20-\$40	--	--	\$200-\$300	--	--	--	--	--
Crack Cocaine	\$20-\$40	\$75-\$150	\$150-\$200	\$300-\$450	\$500-\$800	\$1,000-\$1,500	\$2,200-\$3,200	--	--
Ecstasy	\$10-\$30 per dose	\$14-\$16 per dose/100+	\$10-\$13 per dose/500+	\$8-\$9 per dose/1000+	--	--	--	--	--
Marijuana	\$20-\$40	\$100-\$120	--	--	--	\$150-\$250	\$275-\$500	\$5,600-\$9,000	--
Hashish	\$10-\$15	--	--	--	--	--	--	--	--
PCP	\$10-\$20	\$100 gram	--	--	\$350-\$550	--	\$900-\$1,200	--	--
LSD	\$4-\$6 per hit	--	--	--	\$225-\$275 per 100 hits	--	--	--	--
Vicodin®	\$3-\$5 per tablet	--	--	--	--	--	--	--	--
Valium®	\$3-\$5 per tablet	--	--	--	--	--	--	--	--
Xanax®	\$3-\$8 per tablet	--	--	--	--	--	--	--	--

Note: For statistical purposes, 1 gram value of crystal methamphetamine=\$300.

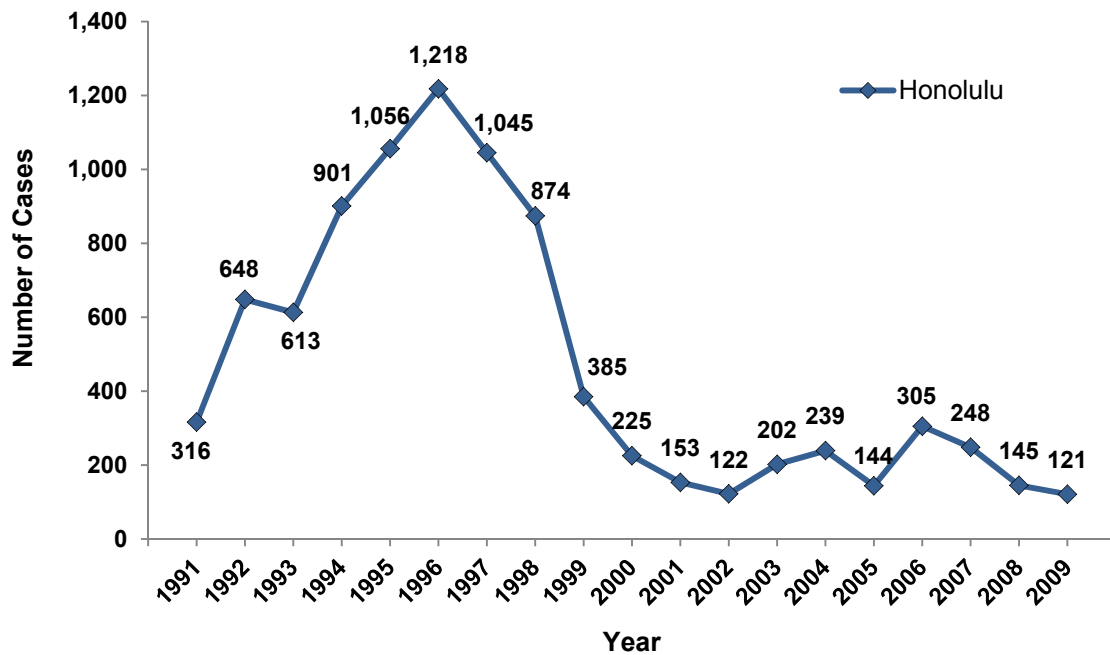
SOURCE: Honolulu Police Department, Narcotics/Vice HI-IMPACT Detail, revised as of 4/21/09

**Exhibit 2. Number of Cocaine-Related Deaths, Oahu (Weighted by a Factor of 10), and Primary Cocaine Treatment Admissions, Hawaii: 1991–2009**



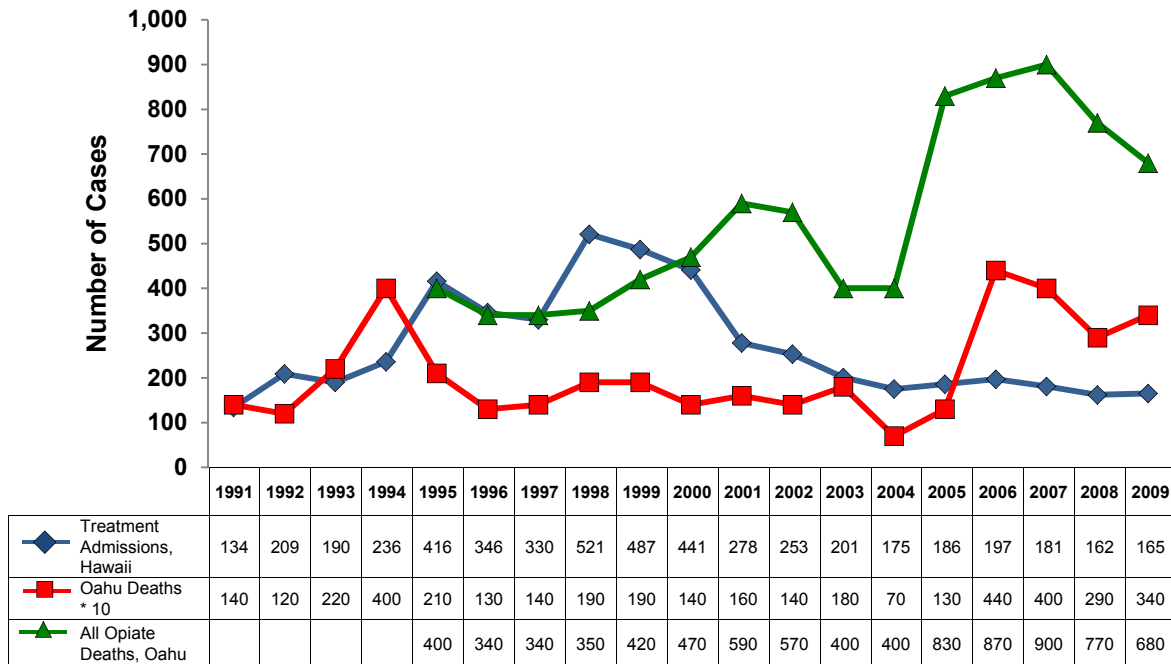
SOURCES: Honolulu City and County Medical Examiner’s Office; Hawaii State Department of Health, Alcohol, and Drug Abuse Division

**Exhibit 3. Number of Cocaine-Related Arrests and Other Police Cases, Honolulu: 1991–2009**



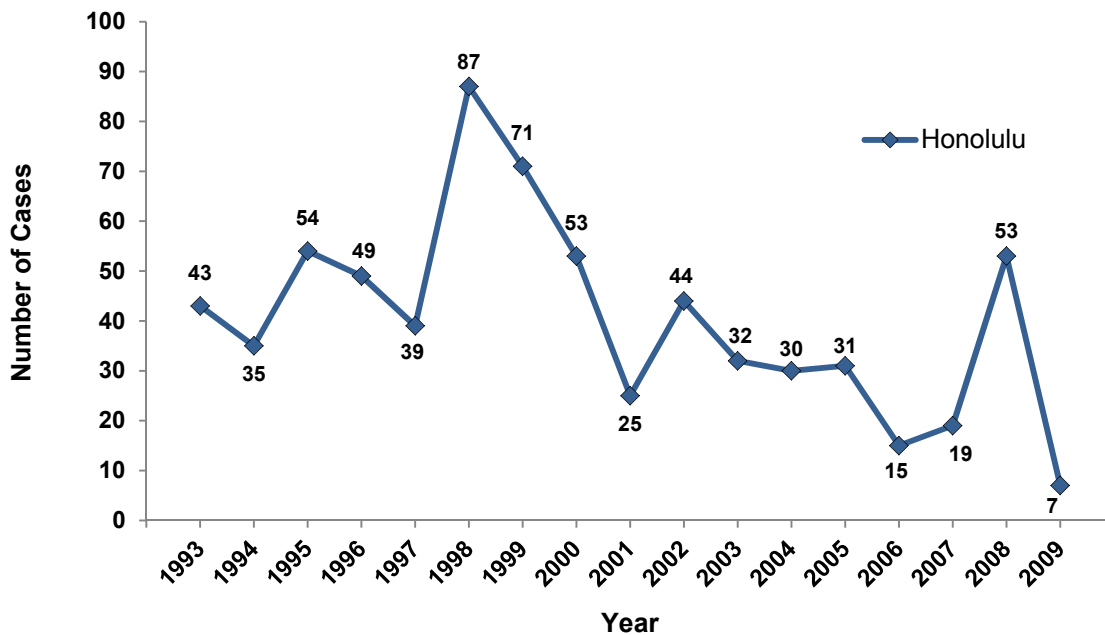
SOURCE: Honolulu Police Department

**Exhibit 4. Number of Heroin-Related Deaths, Oahu (Weighted by a Factor of 10), and Primary Heroin Treatment Admissions, Hawaii: 1991–2009**



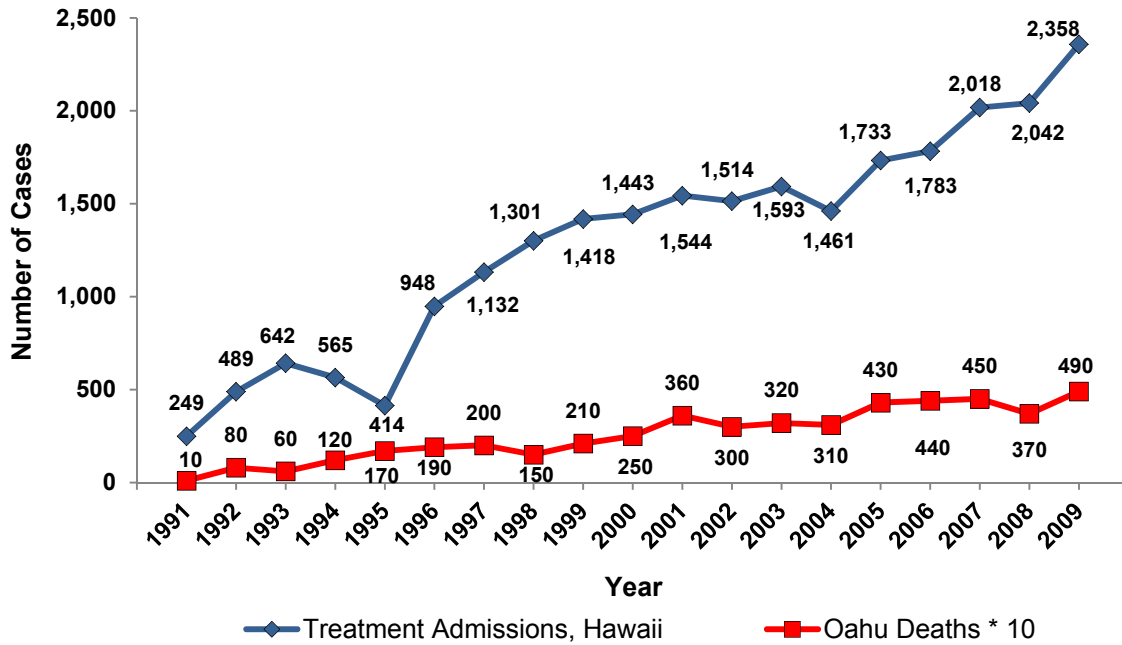
SOURCES: Honolulu City and County Medical Examiner's Office; Hawaii State Department of Health, Alcohol, and Drug Abuse Division

**Exhibit 5. Number of Heroin-Related Arrests and Other Police Cases, Honolulu: 1993–2009**



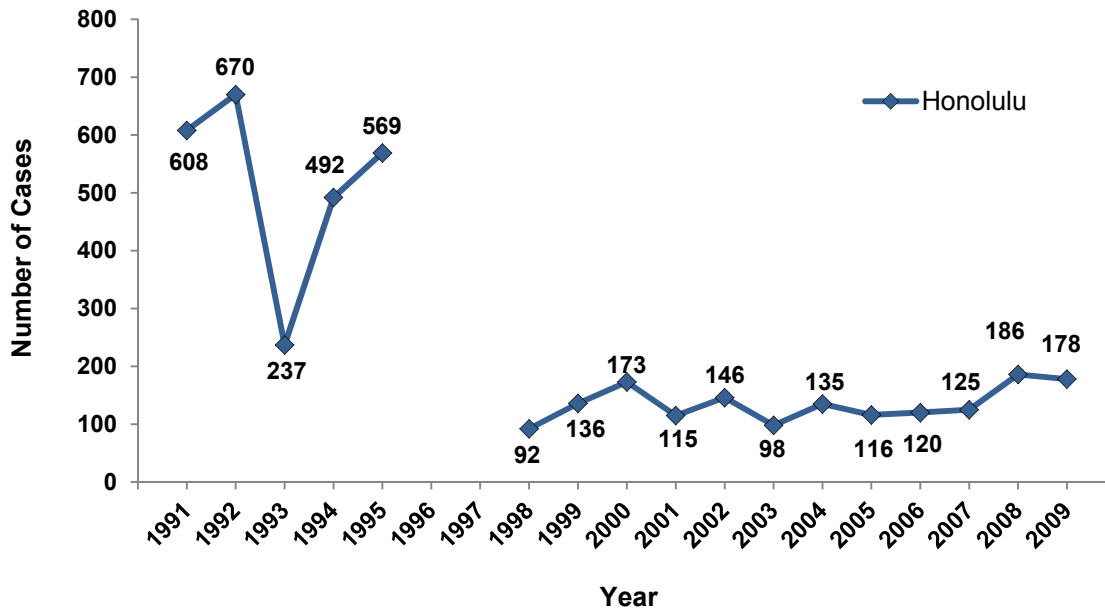
SOURCE: Honolulu Police Department

**Exhibit 6. Number of Marijuana-Related Deaths, Oahu (Weighted by a Factor of 10) and Primary Marijuana Treatment Admissions, Hawaii: 1991–2009**



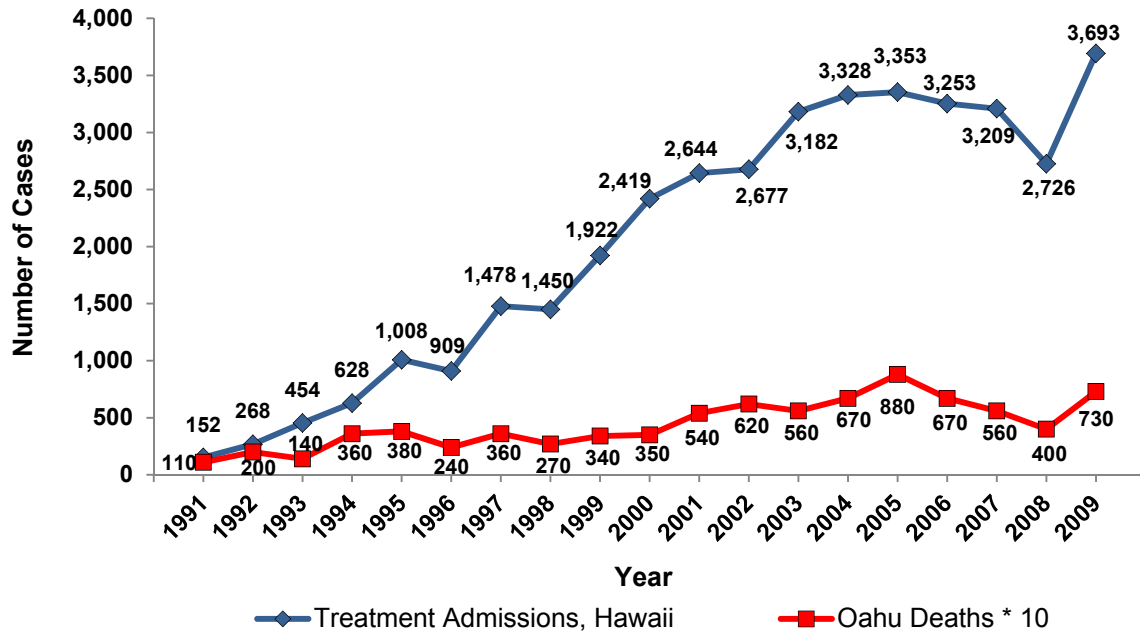
SOURCES: Honolulu City and County Medical Examiner's Office; Hawaii State Department of Health, Alcohol, and Drug Abuse Division

**Exhibit 7. Number of Marijuana-Related Arrests and Other Police Cases, Honolulu: 1991–2009**



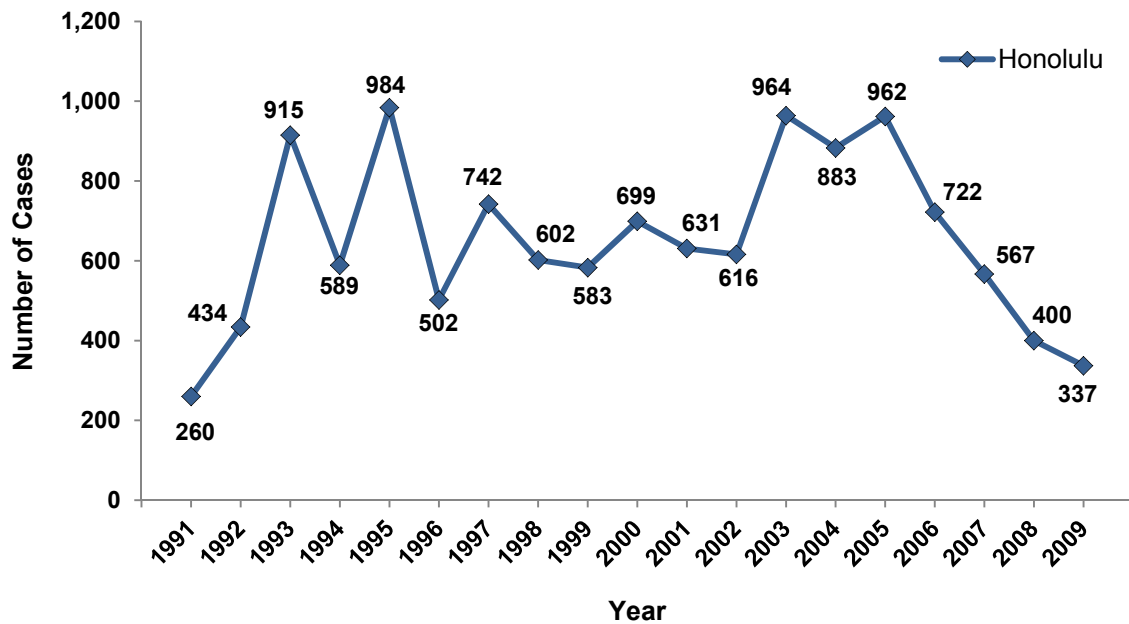
Note: Data for 1996–1997 for marijuana are not available.  
SOURCE: Honolulu Police Department

**Exhibit 8. Number of Methamphetamine-Related Oahu Deaths (Weighted by a Factor of 10) and Primary Methamphetamine Treatment Admissions, Hawaii: 1991–2009**



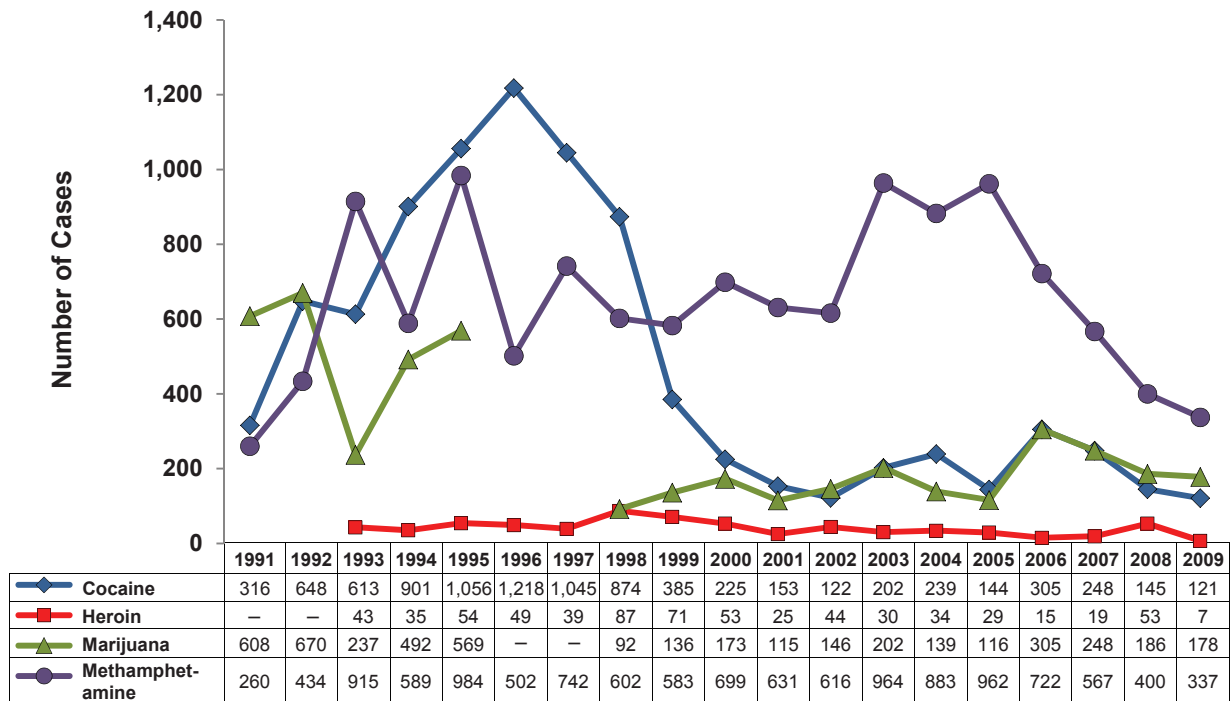
SOURCES: Honolulu City and County Medical Examiner's Office; Hawaii State Department of Health, Alcohol, and Drug Abuse Division

**Exhibit 9. Number of Methamphetamine-Related Police Cases, Honolulu: 1991–2009**



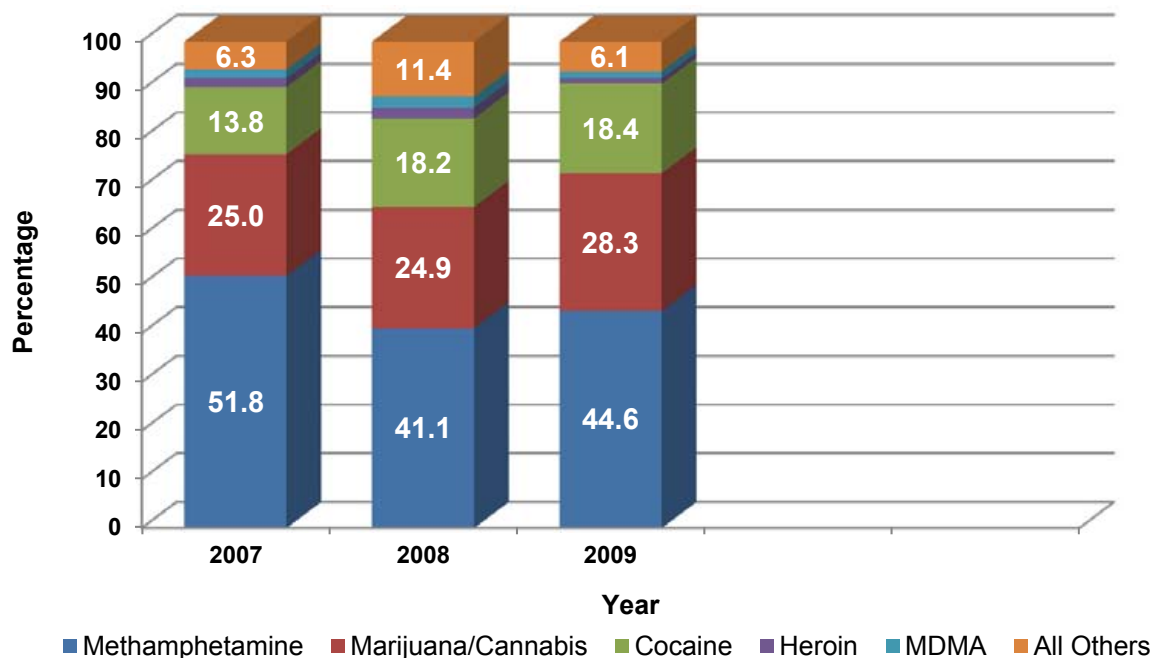
SOURCE: Honolulu Police Department

**Exhibit 10. Number of Police Cases by Selected Drugs, Honolulu: 1991–2009**



Note: Data for heroin for 1991–1992 and for marijuana for 1996–1997 are not available.  
SOURCE: Honolulu Police Department

**Exhibit 11. Percentage of Drug Items Identified in NFLIS Laboratories for Selected Drugs, Honolulu: 2007–2009**



SOURCE: NFLIS, DEA

**Exhibit 12. HPD Drug Seizures, Honolulu: 2005–2009**

Drug	Year	Seizures	Drug	Year	Seizures	Drug	Year	Seizures
Methamphetamine	2005	74,768	Heroin - Tar	2005	3,603	Marijuana - Processed	2005	148,522
	2006	32,277		2006	2		2006	153,299
	2007	43,790		2007	33		2007	73,208
	2008	101,261		2008	3,143		2008	95,188
	2009	55,124		2009	1,410		2009	81,966
Cocaine - Powder	2005	8,797	Heroin - Powder	2005	19	Ecstasy - Tablets	2005	23
	2006	14,394		2006	2		2006	6,138
	2007	13,571		2007	0		2007	5,073
	2008	9,343		2008	1		2008	12,765
	2009	3,349		2009	0		2009	4,110
Cocaine - Rock	2005	464	Marijuana - Plants	2005	2,099	Ecstasy - Powder	2005	126
	2006	482		2006	3,119		2006	0
	2007	732		2007	4,431		2007	6
	2008	68		2008	4,737		2008	116
	2009	900		2009	6,814		2009	0

SOURCE: Honolulu Police Department



# Patterns and Trends in Drug Abuse in Los Angeles County, California: 2009

Mary-Lynn Brecht, Ph.D.<sup>1</sup>

## ABSTRACT

*Marijuana as a primary drug accounted for nearly one-fourth of Los Angeles County alcohol and drug treatment admissions in 2009, accelerating an upward trend for over a decade with increases particularly apparent for youth under 18. This increasing trend for marijuana was also seen in Los Angeles-based illicit drug items analyzed and recorded by the National Forensic Laboratory Information System (NFLIS), where marijuana was found in 38 percent of items. Heroin and methamphetamine each accounted for nearly one-fifth of treatment admissions (19 and 18 percent, respectively), with 2009 levels suggesting possible attenuation of the several-year downward trend for heroin and the downward trend for methamphetamine since 2005. Cocaine accounted for 13 percent of treatment admissions, with levels continuing a several-year downward trend. Marijuana/cannabis, cocaine, and methamphetamine together accounted for 82 percent of all Los Angeles-based NFLIS items in 2009; hydrocodone was the most prevalent pharmaceutical/noncontrolled drug item. While remaining very small percentages of NFLIS items, increases for 2009 over 2008 levels were also seen for hydrocodone and oxycodone. Reports of narcotics (other than heroin/morphine) also increased substantially among coroner toxicology cases from 2008 to 2009, being identified in nearly one-third of cases in 2009 (32 percent). Retail drug prices were relatively stable between 2007 through 2009. However, wholesale prices for cocaine and methamphetamine decreased*

*by the fourth quarter of 2009 from 2008 levels. Among acquired immunodeficiency syndrome (AIDS) cases diagnosed in 2009 in Los Angeles County, 65 percent of males were exposed primarily through men who have sex with men (MSM) contact, and 8 percent were exposed through injection drug use or MSM with injection drug use; 3 percent of females were infected through heterosexual contact, and 13 percent were exposed through injection drug use.*

## INTRODUCTION

### Area Description

Los Angeles County is the most populous county in the Nation (January 1, 2010 estimated population of 10,441,080, a slight increase over the January 1, 2009 estimate of 10,393,185). Approximately 27 percent of California's residents live in Los Angeles County. Just over one-half of all Los Angeles County residents are female (50.5 percent). One-quarter (25.8 percent) are younger than 18; 10.7 percent are 65 or older. The diverse racial and ethnic composition of Los Angeles County residents includes: 28.9 percent non-Hispanic White; 47.7 percent Hispanic; 13.2 percent Asian; 9.4 percent Black/African-American; and 3.2 percent other race/ethnicity or multiracial.

Los Angeles County encompasses approximately 4,752 square miles, including land and ocean/island areas. It is bordered by the Pacific Ocean, and Ventura, Kern, San Bernardino, and Orange Counties. Los Angeles County is a mix of heavily urbanized areas and lesser-populated desert and mountain inland areas in the north and eastern portions of the county. There are 88 cities in Los Angeles County and 140 unincorporated areas.

According to the Drug Enforcement Administration (DEA), Los Angeles County is on the trafficking distribution route for illicit drugs, including heroin, cocaine, marijuana, and methamphetamine, primarily from Mexico. In addition, marijuana is cultivated in substantial quantities, and methamphetamine is produced within the State. Mexican drug trafficking organizations and criminal groups, aligned with the major drug cartels in

<sup>1</sup>The author is affiliated with the University of California, Los Angeles.

western Mexico, are cited as a major concern of law enforcement groups in the Los Angeles area.

## Data Sources

This report describes drug abuse-related indicators in Los Angeles County for 2009 (or most recent data available), as well as trends in selected indicators for several available years prior to and including 2009. Information was collected from the following sources:

- **Drug treatment data** were derived from the California Outcomes Monitoring System (CalOMS) and its predecessor, the California Alcohol and Drug Data System (CADDs). The statistics correspond to Los Angeles County alcohol and other drug treatment program admissions for January 2001 to December 2009. In January 2006, there was a change in the statewide substance abuse treatment program admission/discharge data system, from CADDs to CalOMS. Because of this system change, data collected prior to 2006 may not be exactly comparable to the more recent data. While trends for major substances appear to retain reasonable validity, the reader is nevertheless cautioned when interpreting these statistics. Treatment providers receiving public funding report all their admissions (whether public or private) to CalOMS. Because all programs providing narcotic replacement therapy must report admissions to CalOMS (whether or not the program receives public funding), admissions for heroin treatment may be disproportionately represented in the CalOMS system.
- **Drug analysis results** from local forensic laboratories were derived from the DEA's National Forensic Laboratory Information System (NFLIS). The statistics correspond to items analyzed in 2009.
- **Drug availability, price, purity, seizure, and distribution data** were derived from the Los Angeles High Intensity Drug Trafficking Area (HIDTA), the Los Angeles County Regional Criminal Information Clearinghouse (LA CLEAR), the National Drug Intelligence

Center (NDIC), and the DEA. The prices included in this report reflect the best estimates of the analysts in the Research and Analysis Unit at LA CLEAR and reported in NDIC publications. The price estimates are based primarily on field reports, interviews with law enforcement agencies throughout the Los Angeles HIDTA, and post-seizure analysis.

- **Drugs detected in Los Angeles County coroner toxicology cases** were extracted from data provided by the Los Angeles County Coroner's office for 2007 through 2009. Percentages reflect fractions of the total cases in which toxicology tests were requested (i.e., not just drug-related deaths). Each case may have more than one drug detected, therefore percentages should not be summed.
- **Acquired immunodeficiency syndrome (AIDS) and human immunodeficiency virus (HIV) data** (cumulative through December 2009) were obtained from the Los Angeles County Department of Health Services, HIV Epidemiology Program, "Advanced HIV (AIDS) Quarterly Surveillance Summary," January 2010.
- **Demographic and geographic data** were accessed from the California Department of Finance, Demographic Research Unit, and the U.S. Census Bureau (*State and County Quick-Facts*). Total population was from January 2009 and 2010 estimates, while specific characteristics were from 2008.
- **Adolescent substance use statistics** were derived from the Youth Risk Behavior Surveillance System (YRBSS), Centers for Disease Control and Prevention for Los Angeles County, 2003–2009.

## DRUG ABUSE PATTERNS AND TRENDS

### Cocaine/Crack

Approximately 13 percent of Los Angeles County treatment admissions in calendar year (CY) 2009

reported crack or powder cocaine as the primary drug (exhibit 1). The absolute number (6,690) of primary cocaine/crack admissions in 2009 was 35 percent lower than the high in 2003 of 10,057 and 23 percent lower than the 2008 number. As a percentage share of the total admissions, cocaine admissions in 2009 were the lowest in the 9-year period shown in exhibit 1 (during which cocaine accounted for 12.6 to 19.3 percent of admissions).

A majority (62.5 percent) of primary cocaine admissions in 2009 were male, continuing a slight decrease from previous years (67.3 percent in 2006, 64.5 percent in 2007, and 64.1 percent in 2008) (exhibit 2). Non-Hispanic Blacks continued to represent a majority of cocaine admissions (at 61.9 percent of the total, a slight increase from 58.2 percent in 2008), followed by Hispanics (at 21.9 percent, a slight decrease from 2008), and non-Hispanic Whites (12.4 percent, a slight decrease from 13.9 percent in 2008); other racial/ethnic groups combined constituted 3.7 percent in 2009. Cocaine admissions were predominantly clients age 35 and older (76.4 percent). Primary cocaine admissions were more likely than admissions for other drugs to report being homeless at admission (27.5 percent). More than one-half (57.7 percent) had earned a high school diploma/GED or reported post-high school educational levels. At the time of admission, 9.9 percent were employed full- or part-time, a decrease from 2008 levels; this decrease reflects the national picture of higher rates of unemployment, which can also be seen for users of other types of illicit drugs.

Primary cocaine treatment admissions were more likely than treatment admissions for any other major illicit substances to report a secondary substance (61.6 percent); the most common secondary substance was alcohol (for 35.0 percent of cocaine admissions), followed by marijuana (18.7 percent). Smoking was the predominant reported route of administration (85.1 percent); another 12.0 percent reported inhalation. Only 2.7 percent reported any intravenous drug use (of any drug) in the year prior to admission (exhibit 2).

Approximately one-half (49.4 percent) of the cocaine admissions were referred to treatment

through various court or criminal justice system sources—33.2 percent through the Substance Abuse and Crime Prevention Act (SACPA), and 16.2 percent through other court/criminal justice agencies (including dependency court, drug court, driving under the influence [DUI]/driving while intoxicated [DWI], and other non-SACPA court/criminal justice vectors). Almost one-half (48.3 percent) of the primary cocaine admissions had not previously been admitted to treatment in the California public treatment system (exhibit 2).

Cocaine was detected in 19.3 percent of Los Angeles County coroner toxicology cases in 2009, a decline from 2008 levels of 22.5 percent and 2007 levels of 22.4 percent (data not shown in exhibits). This was a lower percentage of cases than for narcotic analgesics or heroin/morphine, but greater than the percentages for methamphetamine, antidepressants, and benzodiazepines.

Data from NFLIS for 2009 showed that out of 46,300 analyzed items reported by participating laboratories within Los Angeles County, 26.9 percent were found to be cocaine/crack (exhibit 3). Cocaine/crack was the second most likely illicit drug to be found among items tested in the county, with a percentage mid-way between marijuana/cannabis and methamphetamine, with similar rankings for these drugs in Los Angeles County as for the United States as a whole. Regarding all drug items seized in Los Angeles and analyzed by NFLIS in 2009, cocaine/crack retained its ranking as second in 2009, having been the most prevalent (ranking first) in Los Angeles County from 2004 to 2007.

Wholesale prices for powder cocaine were lower by the fourth quarter of 2009 than in 2008, at \$19,500–\$21,000 in 2009 versus \$22,000–\$26,000 in 2008. However, these wholesale price decreases were not reflected in street price increases; retail prices have remained stable at approximately \$80 per gram.

The YRBSS results for 2009 indicated that 9.7 percent of youth in grades 9–12 reported use of cocaine in their lifetime, a slight decline from 2007 levels of 11.4 percent (not statistically significant) (exhibit 4).

## Heroin

In 2009, 9,978 Los Angeles County treatment admissions reported heroin as the primary drug. These heroin admissions represented 18.8 percent of Los Angeles County admissions (exhibit 1), similar to heroin percentage in 2008, showing a dampening of a decreasing trend over more than a decade.

In 2009, heroin admissions were predominantly male (71.7 percent) and were most likely to be non-Hispanic White (51.1 percent). Hispanics accounted for 37.5 percent and non-Hispanic Blacks accounted for 7.1 percent (exhibit 2). The race/ethnic distribution continued a shift toward a higher percentage of non-Hispanic Whites (39.1 percent in 2007 and 46.9 percent in 2008) and a lower percentage of Hispanics (46.5 percent in 2007 and 40.9 in 2008). Heroin users remained predominantly age 35 and older (64.9 percent), continuing a decreasing trend for this age group (from 74.5 percent in 2007 and 69.2 in 2008). Commensurately, an increase was observed in the 18–25 age group (15.4 percent in 2009, up from 13.2 percent in 2008 and 9.0 percent in 2007). Approximately 17 percent of primary heroin admissions were homeless at time of admission. As with admissions for other illicit drugs, employment rates for heroin admissions continued to decrease (13.4 percent in 2009, compared with 18.0 in 2008). High school graduation/GED or higher education levels were reported by 54.7 percent.

Almost two-thirds (61.8 percent) of heroin users reported no secondary substance abuse. Cocaine/crack remained the most commonly reported secondary substance problem (11.8 percent), followed by alcohol (8.6 percent). Injection use was reported as the primary route of administration by 80.5 percent of heroin admissions in 2009, smoking by 13.7 percent, and inhalation (snorting) by 3.9 percent. Similar to previous years, 79.8 percent reported any injection drug use (of any drug) in the year prior to admission (exhibit 2).

Heroin admissions were less likely than admissions for other types of drugs to have been referred to treatment by the court/criminal justice system (10.7 versus 21.8–49.4 percent of admissions for

the three other major drugs); SACPA referrals were reported by 8.1 percent, and 2.6 percent were referred by other court/criminal justice system agencies. Approximately one-fourth (23.3 percent) indicated that they had not previously participated in drug treatment (exhibit 2).

Heroin/morphine was detected in 19.8 percent of Los Angeles County coroner toxicology cases in 2009, suggesting a very slight increasing trend from 2007 levels of 17.7 percent and 2008 levels of 18.9 percent.

According to NFLIS data based on 46,300 analyzed items reported by participating laboratories within Los Angeles County in 2009, 5.2 percent were found to be heroin (exhibit 3). Heroin ranked fourth for both Los Angeles County and the Nation as a whole among drugs found in NFLIS items.

According to LA CLEAR as reported through the NDIC, the wholesale price per kilogram of the most prevalent type of heroin in Los Angeles, Mexican black tar, ranged from \$20,000 to \$24,000 in the fourth quarter of 2009, similar to 2008. Retail prices were stable at approximately \$80 per gram.

The YRBSS results for 2009 indicated that 3.8 percent of youth in grades 9–12 reported use of heroin in their lifetime, suggesting a very slight increase over 2007 levels of 3.1 percent. Although this increase was not statistically significant, a statistically significant increase occurred from 2005 (1.8 percent) to 2009 (exhibit 4).

## Other Opioids/Narcotics

Other opioids/synthetics continued to constitute a small percentage (2.5 percent) of Los Angeles County treatment admissions (exhibit 1). Although a small share of admissions for other opioids/synthetics compared with other major substances of abuse, there has been a continuing upward trend since 2005.

Narcotic analgesics were detected in 32.3 percent of Los Angeles County coroner toxicology cases in 2009, a substantial increase over 2008 levels (24.5 percent) and 2007 levels (22.2 percent), and accounting for a larger fraction of toxicology cases than other specific types of drugs, including cocaine, heroin/morphine, methamphetamine,

antidepressants, THC (tetrahydrocannabinol, an active ingredient in marijuana), or benzodiazepines.

Reported through NFLIS in 2009, hydrocodone was identified as the most prevalent drug among pharmaceuticals, prescription drugs, or noncontrolled nonnarcotic medications (as opposed to illicit substances), comprising 1.7 percent of NFLIS items and ranked sixth for Los Angeles (exhibit 3). Codeine and oxycodone were each identified in 0.4 percent of local NFLIS items in 2009, with ranks of 9th and 10th, respectively in Los Angeles County.

### **Methamphetamine/Other Amphetamines**

Methamphetamine accounted for 17.7 percent of admissions to Los Angeles County substance abuse treatment programs. The 2009 figure suggests a possible leveling of the earlier decreases from the 26.1 percent high in 2005 and 19.0 percent in 2008 (exhibit 1).

Compared with admissions for other major illicit drugs, primary methamphetamine admissions had the largest proportion of females (45.2 percent) (exhibit 2); this percentage was an increase over the 41.2 percent females in 2008. Methamphetamine admissions were most likely to be Hispanic (57.0 percent), followed by non-Hispanic Whites (32.7 percent). There was broad age diversity across methamphetamine admissions: age 18–25 (24.7 percent); age 26–34 (36.3 percent); and clients 35 or older (35.7 percent). Approximately one-half (53.4 percent) reported education levels of high school graduate/GED or higher, and 24.9 percent were homeless at admission. Employment rates declined substantially for methamphetamine admissions; they were at 11.9 percent, compared with 17.8 percent in 2008, the largest decrease among admissions for the major types of illicit drugs.

While 41.3 percent of methamphetamine admissions reported no secondary substance problem, 26.2 percent reported marijuana and 22.6 percent reported alcohol as a secondary substance problem (exhibit 2). Smoking continued as the most frequently mentioned way for primary

methamphetamine admissions to administer the drug (78.1 percent), continuing the general shift toward smoking as the preferred administration route (compared with approximately one-half who were smokers in 1999). Proportions of injectors and inhalers have declined since 1999, from 15.2 and 29.9 percent, respectively, to 7.2 and 12.1 percent, respectively, in 2009. Past-year injection drug use (of any drug) was reported by 10.9 percent of primary methamphetamine admissions.

Approximately one-half (49.4 percent) of primary methamphetamine treatment admissions were referrals through court or criminal justice systems—34.0 percent were referred through SACPA, and 15.4 percent were referred through other legal system channels. Forty-four percent were entering treatment for the first time (exhibit 2).

According to NFLIS data based on 46,300 analyzed items reported by participating laboratories within Los Angeles County in 2009, 16.7 percent were found to be methamphetamine/ amphetamine (exhibit 3). Methamphetamine accounted for the third largest proportion of samples positively identified by NFLIS in 2009, a ranking similar to that for methamphetamine for the United States as a whole.

The wholesale price of methamphetamine in the fourth quarter of 2009 ranged from \$13,800 to \$14,000, lower than the 2008 range of \$17,500–\$19,500 per pound. Street prices remained stable at approximately \$240 for one-eighth ounce. According to NDIC reports, methamphetamine availability is currently increasing after previous decreases in availability that resulted from major control efforts on both sides of the California–Mexico border and strict precursor chemical regulations.

Clandestine methamphetamine laboratory seizures in the Los Angeles HIDTA declined dramatically from 607 in 2002 to 39 in 2007, increased to 49 in 2008, and decreased to 26 in 2009. Nevertheless, investigations related to Mexican methamphetamine operations continued in the Los Angeles HIDTA area, along with reports of increased trafficking and “smurfing” and increased methamphetamine production in large-scale “superlabs” throughout California.

The YRBSS results for 2009 indicated that 7.1 percent of youth in grades 9–12 reported use of methamphetamine in their lifetime, suggesting a slight decrease from 2007 levels of 9.0 percent (exhibit 4).

## Marijuana

Both the number of primary marijuana treatment admissions and marijuana's percentage share of all admissions have steadily increased from 2001 to 2009 in Los Angeles County (exhibit 1). During that period, numbers increased from 4,286 to 12,222, and percentages rose from 9.3 to 23.0.

Two-thirds of the primary marijuana admissions were male (68.4 percent) (exhibit 2). Marijuana admissions had the largest proportion of individuals younger than 18; 57.4 percent were younger than 18, compared with a range of 0.8 percent for heroin and 3.4 percent for methamphetamine. Consistent with the generally younger age for marijuana admissions than for those for other primary drugs, marijuana admissions had the lowest percentage of high school or higher education (24.2 percent), employment (5.7 percent full- or part-time), and homelessness (5.8 percent). Primary marijuana admissions were most likely to be Hispanic (52.7 percent), followed by non-Hispanic Blacks (32.2 percent) and non-Hispanic Whites (10.0 percent).

The trend toward younger marijuana users in treatment is further illustrated by considering the percentages that youth (under 18) marijuana users and adult (18 and over) marijuana users were of all treatment admissions. While the percentage for adult marijuana users has increased only slightly from 2006 to 2009 (8.6 to 9.8 percent of all admissions), the percentage for youth has experienced a greater increase (from 8.0 to 13.2) and in 2009 was substantially larger than that for adults (data not shown in exhibits).

While 47.9 percent of primary marijuana admissions reported no secondary drug problem, alcohol was identified as a secondary drug problem for 37.9 percent, methamphetamine for 6.1 percent, and cocaine/crack for 4.1 percent. Smoking was the

predominant route of administration for marijuana (97.7 percent). Few (1.2 percent) reported any past-year injection drug use (exhibit 2).

A total of 21.8 percent of primary marijuana admissions reported being referred to treatment by the court/criminal justice system: 8.5 percent through SACPA and 13.3 percent through other court/criminal justice system channels. More than three-fourths (78.6 percent) were entering treatment for the first time (exhibit 2).

THC was detected in 19.3 percent of Los Angeles County coroner toxicology cases in 2009, similar to 2008 levels (19.7 percent) and 2007 levels (18.9 percent). According to NFLIS data from 46,300 analyzed items reported by participating laboratories within Los Angeles County in 2009, 37.9 percent were found to be marijuana/cannabis (exhibit 3), an increase over the 34.5 percent for marijuana/cannabis in 2008. Marijuana/cannabis was the most frequently identified substance in Los Angeles County NFLIS items, as it was for the United States as a whole.

The price of Mexican low-grade marijuana remained stable in 2009, with wholesale prices ranging from \$300 to \$340 per pound and retail prices from \$5 to \$10 per gram. Prices of high-grade sinsemilla also remained stable, with wholesale prices at \$2,500–\$6,000 per pound and retail prices at \$60–\$80 for one-eighth ounce.

The YRBSS results for 2009 indicated that 37.6 percent of youth in grades 9–12 in Los Angeles County reported use of marijuana in their lifetime, a decrease from 2003, 2005, and 2007 levels (42.5, 39.7, and 40.7 percent, respectively) (exhibit 4). A slight decrease was also seen in past-month marijuana use, with 2009 levels at 19.3 percent, compared with 21.4 percent in 2007.

## Club Drugs

Very few admissions to treatment for substance abuse in Los Angeles County in 2009 reported club drugs, including MDMA or ecstasy (3,4-methylenedioxymethamphetamine), GHB (gamma hydroxybutyrate), ketamine, or Rohypnol®, as the primary drug (0.3 percent,  $n=194$ , data not shown in exhibits).

According to NFLIS data on 46,300 analyzed items from Los Angeles County in 2009, 2.9 percent contained MDMA (exhibit 3). MDMA was more likely to be found in Los Angeles County NFLIS items (ranking fifth) than in the Nation as a whole (ranking eighth).

At the wholesale level in 2009, MDMA prices were approximately \$2,500–\$3,000 per “boat” (1,000 pills), similar to 2007 and 2008 prices. At the retail level, ecstasy sold for \$10–\$12 per tablet, also consistent with 2007 and 2008 prices.

### **PCP and Hallucinogens**

PCP (phencyclidine) and other hallucinogens accounted for 0.6 percent of the reported primary drugs among Los Angeles treatment admissions in 2009 ( $n=331$ , data not shown in exhibits); all but 17 of these mentions were for PCP.

According to NFLIS data on 46,300 analyzed items from Los Angeles County in 2009, 1.0 percent contained PCP (exhibit 3), stable from 2008. In 2009, PCP was ranked 7th in Los Angeles, compared with 17th in the Nation as a whole.

Wholesale prices for a gallon of PCP in the fourth quarter of 2009 ranged from \$12,000 to \$15,000, a decrease from 2008 prices of \$15,000–\$18,000. Retail prices have remained stable, with 2007 and 2008 levels at \$300–\$350 an ounce or \$10–\$20 for a “sherm” cigarette dipped in liquid PCP.

### **Benzodiazepines, Barbiturates, and Sedative/Hypnotics**

In 2009, treatment admissions associated with primary barbiturate, benzodiazepine, or other sedative/hypnotic abuse continued to account for less than 1 percent of all admissions in Los Angeles County (0.3 percent,  $n=157$ , data not shown in exhibits).

In 2009, benzodiazepines and/or barbiturates were detected in 16.1 percent of Los Angeles County coroner toxicology cases, an increase over 2008 levels (10.2 percent). Less than 1 percent of the 46,300 Los Angeles County items analyzed and reported to the NFLIS system in 2009 were

identified as benzodiazepines. The most frequently cited benzodiazepine in Los Angeles was alprazolam (0.7 percent) (exhibit 3).

### **Other Drugs**

Other stimulants (including prescription stimulants such as methylphenidate) accounted for 0.2 percent of 2009 treatment admissions ( $n=128$ , a decrease from  $n=817$  in 2008, back to 2007 levels; data not shown in exhibits). Antidepressants were detected in 13.9 percent of Los Angeles County coroner toxicology cases in 2009, similar to 2008 levels (13.1 percent).

## **INFECTIOUS DISEASES RELATED TO DRUG ABUSE**

The cumulative total of adult/adolescent AIDS cases reported in Los Angeles County through December 31, 2009, reached 56,091, representing approximately 36 percent of the cumulative cases in California and 5 percent of those in the United States (data not shown in exhibits). As of 2009, approximately 24,643 Los Angeles County residents were living with advanced HIV disease. Of the cumulative cases reported in Los Angeles County, 47 percent were non-Hispanic Whites, 32 percent were Hispanics, and 19 percent were non-Hispanic Blacks (data not shown in exhibits). In terms of age, 17 percent were younger than 30; 43 percent were age 30–39; and 40 percent were 40 or older. Most (93 percent) were male. Approximately 7 percent of cumulative AIDS cases reported by the end of 2009 involved injection drug use as the primary vector of exposure, and another 7 percent involved MSM with injection drug use. For females, exposure through injection drug use contact has been 23 percent, while for males injection drug use exposure has totaled 13 percent (combined across categories of injection drug use alone or MSM contact with an injection drug user [IDU]). Among males, non-Hispanic Blacks and American Indian/Alaska Native subgroups have had higher exposure through categories involving injection drug use (combined injection drug use alone and MSM contact with an IDU) at 20 and 23

percent, respectively. Among females, the American Indian/Alaska Native subgroup was disproportionately exposed through injection drug use (40 percent), followed by non-Hispanic Whites (34 percent) and Blacks (26 percent).

The number of HIV/AIDS diagnoses in Los Angeles County has been gradually declining since 2002 (exhibit 5). Because of reporting delays, figures for 2009 are a substantial underestimate of what completed reporting is likely to show. There appears to be a slight declining trend in injection drug use as the primary exposure vector both for males and females.

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**Exhibit 1. Frequency and Percentage of Annual Treatment Admissions, by Primary Drug of Abuse, in Los Angeles County: 2001–2009**

Primary Drug	2001 Freq (%)	2002 Freq (%)	2003 Freq (%)	2004 Freq (%)	2005 Freq (%)	2006 Freq (%)	2007 Freq (%)	2008 Freq (%)	2009 Freq (%)
Cocaine	8,703 (18.9)	9,009 (19.3)	10,057 (18.8)	9,261 (18.0)	8,418 (17.1)	9,421 (17.2)	8,354 (16.2)	8,662 (15.6)	6,690 (12.6)
Heroin	17,560 (38.1)	14,863 (31.9)	13,595 (25.4)	12,283 (23.9)	9,997 (20.3)	10,969 (20.0)	10,150 (19.6)	10,250 (18.5)	9,978 (18.8)
Marijuana	4,286 (9.3)	5,502 (11.8)	7,121 (13.3)	7,130 (13.9)	7,681 (15.6)	9,121 (16.6)	9,469 (18.3)	11,031 (19.9)	12,222 (23.0)
Methamphetamine	5,418 (11.7)	7,145 (15.3)	10,056 (18.8)	11,235 (21.8)	12,875 (26.1)	13,414 (24.5)	11,853 (22.9)	10,564 (19.0)	9,399 (17.7)
PCP	405 (0.9)	415 (0.9)	576 (1.1)	365 (0.7)	278 (0.6)	279 (0.5)	281 (0.5)	289 (0.5)	314 (0.6)
Other Opiates/ Synthetics	834 (1.8)	839 (1.8)	1,227 (2.3)	956 (1.9)	510 (1.0)	1,013 (1.8)	1,161 (2.2)	1,253 (2.3)	1,315 (2.5)
Other (Includes Alcohol)	8,921 (19.3)	8,856 (19.0)	10,871 (20.3)	10,200 (19.8)	9,516 (19.3)	10,362 (18.9)	10,161 (19.7)	13,481 (24.3)	13,118 (24.7)
<b>Total Admissions</b>	<b>46,127</b> (100.0)	<b>46,629</b> (100.0)	<b>53,503</b> (100.0)	<b>51,430</b> (100.0)	<b>49,275</b> (100.0)	<b>54,784</b> (100.0)	<b>51,662</b> (100.0)	<b>55,530</b> (100.0)	<b>53,036</b> (100.0)

SOURCE: Los Angeles County Alcohol and Drug Program Administration, California Outcomes Monitoring System (CalOMS)

**Exhibit 2. Demographic Characteristics of Primary Treatment Admissions for Selected Illicit Drug of Abuse, as a Percentage, in Los Angeles County: CY 2009<sup>1</sup>**

Demographics	Cocaine/ Crack	Heroin	Marijuana	Metham- phetamine	All Admissions <sup>2</sup>
<b>Gender<sup>3</sup></b>					
Male	62.5	71.7	68.4	54.8	63.4
Female	37.5	28.2	31.6	45.2	36.6
<b>Race/Ethnicity</b>					
White, non-Hispanic	12.4	51.1	10.0	32.7	28.4
Black, non-Hispanic	61.9	7.1	32.2	4.5	24.4
Hispanic	21.9	37.5	52.7	57.0	42.1
American Indian	0.6	0.6	0.4	0.9	0.8
Asian/Pacific Islander	1.4	0.9	1.8	2.7	1.9
Other	1.7	2.7	2.9	2.2	2.5
<b>Age at Admission</b>					
17 and younger	1.1	0.8	57.4	3.4	19.4
18–25	6.8	15.4	20.1	24.7	16.0
26–34	15.7	19.0	10.4	36.3	18.5
35 and older	76.4	64.9	12.1	35.7	46.1
<b>Route of Administration</b>					
Oral	1.6	1.2	2.0	1.9	27.9
Smoking	85.1	13.7	97.7	78.1	50.4
Inhalation	12.0	3.9	0.2	12.1	4.7
Injection	0.7	80.5	0.0	7.2	16.5
Unknown/other	0.6	0.6	0.1	0.8	0.6
<b>Secondary Substance<sup>4</sup></b>					
None	38.4	61.8	47.9	41.3	50.7
Alcohol	35.0	8.6	37.9	22.6	19.4
Cocaine/crack	--	11.8	4.1	5.5	3.8
Heroin	1.6	--	0.3	1.8	1.1
Marijuana	18.7	4.3	--	26.2	12.8
Methamphetamine	4.0	6.0	6.1	--	4.5
<b>Past-Year Injection Drug Use</b>	2.7	79.8	1.2	10.9	18.4
<b>Homeless</b>	27.5	16.5	5.8	24.9	16.3
<b>Employed Full- or Part-Time</b>	9.9	13.4	5.7	11.9	10.0
<b>Graduated from High School</b>	57.7	54.7	24.2	53.4	48.3
<b>Referred by Court/Criminal Justice System<sup>5</sup></b>					
SACPA Probation/Parole	33.2	8.1	8.5	34.0	15.6
Other Court	16.2	2.6	13.3	15.4	9.7
First Treatment Episode	48.3	23.3	78.6	44.0	54.6
<b>Total Admissions (N)</b>	<b>(6,690)</b>	<b>(9,978)</b>	<b>(12,222)</b>	<b>(9,399)</b>	<b>(53,036)</b>

<sup>1</sup>Data are for January–December 2009.

<sup>2</sup>Total also includes alcohol and other drugs.

<sup>3</sup>0.03 percent reported "other" gender and were not included in this table.

<sup>4</sup>Other secondary drugs not listed in table; percentages may not add to 100.

<sup>5</sup>SACPA=Substance Abuse and Crime Prevention Act of 2000 (a.k.a., Proposition 36); other court referrals include dependency court, drug court or drug court partnership, DUI/DWI, and other non-SACPA court/criminal justice.

SOURCE: Los Angeles County Alcohol and Drug Program Administration, California Outcomes Monitoring System (CalOMS)

**Exhibit 3. Most Common Drugs in Items Analyzed by Number and Percent in the NFLIS System with Rankings for Los Angeles County and the United States: CY 2009<sup>1</sup>**

Drug (LA ranking)	Number	Percent	LA Rank	U.S. rank <sup>2</sup>
Marijuana/Cannabis	17,532	37.9	1	1
Cocaine	12,476	26.9	2	2
Methamphetamine	7,720	16.7	3	3
Heroin	2,402	5.2	4	4
MDMA (3,4-methylenedioxymethamphetamine)	1,358	2.9	5	8
Hydrocodone	772	1.7	6	6
PCP (phencyclidine)	469	1.0	7	17
Alprazolam	335	0.7	8	7
Codeine	199	0.4	9	22
Oxycodone	180	0.4	10	5
Carisoprodol	171	0.4	11	20
BZP (1-benzylpiperazine)	160	0.3	12	9
Other	2,526	5.5	---	---
<b>Total</b>	<b>46,300</b>	<b>100.0</b>	<b>---</b>	<b>---</b>

<sup>1</sup>Data are for January–December 2009.

<sup>2</sup>Rank not shown if greater than 20.

SOURCE: NFLIS, DEA

**Exhibit 4. Use of Selected Substances by Youth Grades 9–12 in Los Angeles County, as a Percentage: CY 2003–2009**

Substance	2003	2005	2007	2009
Cocaine—Lifetime	9.9	10.0	11.4	9.7
Heroin—Lifetime	2.2	1.8	3.1	3.8
Methamphetamine—Lifetime	8.0	10.2	9.0	7.1
Marijuana—Lifetime	42.5	39.7	40.7	37.6
Marijuana—past-month	22.2	18.1	21.4	19.3

Note: Heroin showed a statistically significant increase from 2005 to 2009.

SOURCE: YRBSS

**Exhibit 5. Frequency and Percentage of Annual Adult/Adolescent AIDS Cases by Gender, Year of Diagnosis, and Exposure Category, Los Angeles County: 2000–2009**

Adult/Adolescent Exposure Category <sup>1</sup>	2000 Freq (%)	2001 Freq (%)	2002 Freq (%)	2003 Freq (%)	2004 Freq (%)	2005 Freq (%)	2006 <sup>2</sup> Freq (%)	2007 <sup>2</sup> Freq (%)	2008 <sup>2</sup> Freq (%)	2009 <sup>2</sup> Freq (%)
<b>Males</b>										
Male-to-Male Sexual Contact (MSM)	1,007 (65)	968 (65)	1,076 (67)	1,063 (70)	883 (67)	841 (67)	816 (68)	690 (67)	652 (65)	326 (65)
Injection Drug Use	91 (6)	90 (6)	81 (5)	65 (4)	61 (4)	54 (4)	37 (3)	24 (2)	17 (2)	13 (3)
MSM/Injection Drug User (IDU) Contact	123 (8)	116 (8)	117 (7)	108 (7)	87 (7)	80 (6)	83 (7)	85 (8)	53 (5)	26 (5)
Hemophilia or Coagulation Disorder	<5 (-)	5 (<1)	<5 (-)	<5 (-)	<5 (-)	<5 (-)	<5 (-)	<5 (-)	<5 (-)	<5 (-)
Heterosexual Contact <sup>3</sup>	52 (3)	68 (5)	59 (4)	59 (4)	33 (2)	27 (2)	23 (2)	18 (2)	11 (1)	7 (1)
Transfusion Recipient	<5 (-)	<5 (-)	<5 (-1)	<5 (-)	<5 (-)	<5 (-)	<5 (-)	<5 (-)	<5 (-)	<5 (-)
Mother With/at Risk for HIV	<5 (-)	<5 (-)	<5 (-)	<5 (-)	<5 (-)	<5 (-)	5 (<1)	<5 (-)	<5 (-)	<5 (-)
Other/Undetermined	258 (17)	232 (16)	273 (17)	223 (15)	259 (20)	258 (20)	231 (19)	209 (20)	264 (26)	132 (26)
<b>Male Subtotal</b>	<b>1,541</b>	<b>1,485</b>	<b>1,613</b>	<b>1,521</b>	<b>1,326</b>	<b>1,263</b>	<b>1,196</b>	<b>1,030</b>	<b>998</b>	<b>505</b>
<b>Females</b>										
Injection Drug Use	44 (19)	46 (19)	47 (20)	26 (12)	30 (16)	32 (17)	25 (14)	12 (8)	15 (10)	9 (13)
Hemophilia or Coagulation Disorder	<5 (-)	<5 (-)	<5 (-)	<5 (-)	<5 (-)	<5 (-)	<5 (-)	<5 (-)	<5 (-)	<5 (-)
Heterosexual Contact <sup>3</sup>	111 (47)	98 (42)	90 (39)	97 (46)	69 (38)	78 (42)	59 (34)	66 (43)	51 (34)	21 (30)
Transfusion Recipient	<5 (-)	<5 (-)	<5 (-)	<5 (-)	<5 (-)	<5 (-)	<5 (-)	<5 (-)	<5 (-)	<5 (-)
Mother With/at Risk for HIV	<5 (-)	<5 (-)	<5 (-)	<5 (-)	<5 (-)	<5 (-)	<5 (-)	<5 (-)	<5 (-)	<5 (-)
Other/Undetermined	77 (33)	85 (36)	87 (38)	85 (40)	80 (44)	72 (39)	85 (49)	72 (47)	82 (55)	37 (54)
<b>Female Subtotal</b>	<b>235</b>	<b>236</b>	<b>230</b>	<b>210</b>	<b>182</b>	<b>186</b>	<b>174</b>	<b>153</b>	<b>150</b>	<b>69</b>
<b>Total</b>	<b>1,776</b>	<b>1,721</b>	<b>1,843</b>	<b>1,731</b>	<b>1,508</b>	<b>1,449</b>	<b>1,370</b>	<b>1,183</b>	<b>1,148</b>	<b>574</b>

<sup>1</sup>Exposure categories are ordered hierarchically. Cases with multiple exposure categories are included in the category listed first.

<sup>2</sup>Data are provisional due to reporting delay. Cases include those reported by December 31, 2009.

<sup>3</sup>Heterosexual contact indicates contact with a person who is HIV-infected or at increased risk for HIV.

SOURCE: Los Angeles County Department of Health Services, HIV Epidemiology Program

# Patterns and Trends of Drug Abuse in Maine: 2009

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## ABSTRACT

*This report updates most statewide indicators for Maine through calendar year 2009, and one for early 2010. Cocaine/crack abuse continued to decrease in 2009, declining to 7 percent of treatment admissions, 5 percent of drug-induced deaths, and 26 percent of 2009 arrests by the Maine Drug Enforcement Agency. Law enforcement seizure samples identified as cocaine often contained levamisole (32 percent in early 2010 data). Heroin treatment admissions increased very slightly to 16 percent. Deaths decreased for the 4th year to 9 percent in 2009, and arrests remained stable at 6 percent. Pharmaceutical opiate/opioid abuse remained high in 2009 and early 2010 indicators, contributing to 52 percent of 2009 treatment admissions, 68 percent of 2009 drug-induced deaths, and 37 percent of 2009 Maine Drug Enforcement Agency arrests. Methadone deaths continued to decline in 2009; oxycodone deaths predominated and pharmaceutical morphine deaths increased. Benzodiazepines were implicated in a record 31 percent of 2009 drug-induced deaths. Methamphetamine indicators showed very slight increases in arrests and seizures and a shift away from tablets. Marijuana indicators continued to decline in 2009, to 16 percent of treatment admissions and 6 percent of seizures tested, but arrests increased to 23 percent. BZP (1-benzylpiperazine) rose to 10th in rank among NFLIS items tested in Maine. Mortality in 2009 was increasingly linked to effects of antidepressants, antipsychotics, antihistamines, and muscle relaxants.*

<sup>†</sup>The author is affiliated with the Margaret Chase Smith Policy Center at the University of Maine.

## INTRODUCTION

Emerging issues in Maine included continuing and increasing problems with the high volume of prescription drug misuse and abuse. The total number of drug-induced deaths was higher than any year since records began in 1997. Of particular note was an increase in mortality from antidepressants, muscle relaxants, diphenhydramine, and quetiapine, in addition to narcotic pharmaceutical morphine and benzodiazepines. Methadone-induced deaths continued a slow decline that began in 2005; oxycodone was implicated more frequently in deaths in 2009 than methadone. Approximately one-third of samples seized and identified as cocaine contained levamisole. Piperazine derivatives were a regular finding among seizure laboratory samples.

## Area Description

Maine is the third most rural State in the United States, with only 1.2 million inhabitants thinly distributed across a large geographic area, averaging 40 persons per square mile. More than one-half of its population lives in rural communities. Most of its citizens (96 percent) are White; nearly one-fifth (18 percent) are on Medicaid. The majority of Maine's borders are shared with Canada, and there is a significant pattern of cross-border drug trafficking. Maine's long coast and many harbors have also contributed to drug distribution, as well as the north-south I-95 highway corridor, which connects it to more southerly urban centers.

In the late 1990s, Maine experienced a dramatic increase in drug abuse, including accidental drug-induced deaths. These peaked in the early 2000s, and again in 2009. Pharmaceuticals, largely opiates and opioids, have fueled the increase both times.

## Data Sources

The data sources used in this report are listed below:

- **Treatment data** were provided by the Maine State Office of Substance Abuse, and include all admissions for programs receiving State fund-

ing. This report includes 2009 treatment admissions and makes comparisons with prior calendar years (exhibit 1).

- **Mortality data** were provided by the State of Maine Office of Chief Medical Examiner for all drug-induced cases through 2009. That office investigates all drug-related cases statewide (exhibit 2).
- **Arrest data** were provided by the Maine State Drug Enforcement Agency, which directs eight multijurisdictional task forces covering the entire State, generating approximately 60 percent of all Uniform Crime Report drug-related offenses statewide. Data were provided for calendar year (CY) 2009 and compared with previous years back to 2003 (exhibit 3).
- **Forensic laboratory data—drug seizures** were provided by the Maine State Health and Environmental Testing Laboratory, which tests all samples seized by the Maine Drug Enforcement Agency, as well as other police and sheriff departments. Data were provided for CY 2009 and the first 5 months of 2010 and are compared with previous years back to 2003 (exhibit 4).
- **Forensic laboratory data—urine tests of impaired drivers** were provided by the Maine State Health and Environmental Testing Laboratory, which tests all urine samples of drivers suspected of driving under the influence of drugs. Data were provided for 2009 and the first 5 months of 2010.
- **Poison center data** for early 2010, CY 2009, and previous years were provided by the Northern New England Poison Center, which serves Maine, New Hampshire, and Vermont, and includes data on calls for law enforcement information, substance abuse information, and calls regarding poisoning exposures.
- **Prescription data** were provided by the State through June 2009 by the Prescription Monitoring Program, administered by the Maine State Office of Substance Abuse. These included aggregate tables summarizing counts

for all controlled substance prescriptions dispensed statewide.

- **Epidemiological data** on acquired immunodeficiency syndrome (AIDS) data and human immunodeficiency virus (HIV) through 2009, and viral hepatitis through 2007, were provided by the Maine State Center for Disease Control.
- **Street prices for drugs** in Bangor, Lewiston, and Portland come from *National Illicit Drug Prices—December 2009*, distributed by the U.S. Department of Justice using data from the National Drug Information Center (NDIC).

## DRUG ABUSE PATTERNS AND TRENDS

### Cocaine/Crack

Cocaine abuse indicators have generally declined in Maine since 2007. Primary crack/cocaine treatment admissions, which had been somewhat level in percentage of total admissions excluding alcohol between 2006 and 2007, decreased from 14 percent in 2007 to 10 percent in 2008 and 7 percent in 2009 (2 percent crack and 5 percent powder cocaine). The raw number of admissions was highest in 2007; it decreased 15 percent in 2008 and another 25 percent in 2009 (exhibit 1). Forty-two percent of powder cocaine and 49 percent of crack admissions were age 35 or older.

Cocaine-induced deaths, which had risen sharply from a low of 4 percent in 2002 and peaked at 19 percent in 2006 and 2007, decreased sharply to only 7 percent in 2008 and 5 percent in 2009 (exhibit 2). Most of these deaths had co-intoxicants, usually diverted oxycodone or methadone.

Cocaine/crack arrests have constituted a substantial but declining proportion of Maine Drug Enforcement Agency activity for several years; they accounted for 45 percent of arrests in 2007 (29 percent powder cocaine and 16 percent crack) and declined to 33 percent in 2008 and 26 percent in 2009 (19 percent cocaine and 7 percent crack). Despite this reduction, cocaine/crack continued to be the largest single category of seizure samples

tested in Maine's forensic laboratory, at 43 percent in 2009 and 45 percent January through May 2010. According to the NDIC's *National Illicit Drug Prices—June 2009*, cocaine mid-level and retail prices on the street did not change between 2006 and 2009.

As has been reported nationally, cocaine drug item samples increasingly have adulterants present, particularly diltiazem and levamisole. In Maine's samples tested January through May 2010, 32 percent included levamisole and 3 percent contained diltiazem, both slightly lower than 2009 levels (38 and 11 percent respectively).

## Heroin

Heroin abuse is a serious problem in Maine, but most indicator percentages continued in the single digits, with trends stable or mixed. The proportion of primary heroin admissions in 2009 decreased slightly to 15 percent in the first half of the year and 16 percent in the second half of 2009. Between 2006 and 2009 there has been a decline in the proportion of admissions age 18–25, from 46 to 38 percent; the percent of those age 26–35 increased from 34 to 42 percent, and clients 36 and older increased from 18 to 20 percent (heroin and pharmaceutical morphine are combined in the treatment admissions data).

Heroin/morphine deaths continued a 4-year decline during 2009, from 24 percent in 2005 to 9 percent in 2009. It is important to note that most 2009 deaths in which heroin/morphine were implicated were actually due to pharmaceutical morphine, continuing a recent trend. This is discussed further in the next section.

Heroin arrests by the Maine Drug Enforcement Agency continued to be stable at 6 percent. Seizure samples identified as heroin increased from 9 percent in 2008 to 15 percent in 2009, but during the January–May of 2010 period the percentage dropped again to 8 percent.

Maine's heroin supplies are South American. The NDIC reported no significant changes in wholesale prices for heroin in Maine between mid-2008 and mid-2009 (previously, there was no reported change from 2007 to 2008). However, the

retail price was reduced in the Lewiston area to \$80–\$120 for a bundle of 10 bags.

## Pharmaceutical Opiates/Opioids

Narcotic analgesic misuse and abuse remained high and continued to increase in 2009, contributing to: 54 percent of addiction treatment admissions (excluding alcohol) during the second half of the year; 67 percent of drug-induced deaths; 37 percent of arrests; and 13 percent of forensic laboratory samples (rising to 19 percent January–May 2010). Among impaired drivers tested January–May 2010, 35 percent of the urine samples were positive for opiates other than heroin/morphine.

Treatment admissions for opiates/opioids other than heroin/morphine have approximately doubled in proportion since the early 2000s, when they constituted approximately one-quarter of nonalcohol primary admissions. The most common route of administration was inhalation (50 percent), followed by oral administration (29 percent) and injection (19 percent). The percentage injecting has declined slightly from 23 percent in 2008. Primary oxycodone admissions constituted 78 percent of the nonheroin opiate/opioid admissions in 2009. Among narcotics, methadone and oxycodone continued to dominate among the narcotic-induced deaths. The percentage of methadone deaths, which had peaked at 47 percent in 2004, has been gradually declining for 5 years; it was 26 percent in 2009. The percentage of oxycodone deaths has been somewhat unstable, rising from 14 percent in 2006 to 25 percent in 2007, returning to 14 percent in 2008, but then rising again to 28 percent in 2008.

Of the 31 deaths caused by heroin/morphine toxicity (17 percent of 2009 drug-induced deaths), over one-half (58 percent) were documented in the case investigation to be due to morphine pharmaceuticals (specific products not identified), 26 percent were heroin/morphine not otherwise specified, and 16 percent were documented as heroin. An analysis of prescribing frequency data (fiscal years [FYs] 2006–2009) by specific long-acting narcotic pharmaceuticals (exhibit 5) shows a decline in methadone 40-milligram products beginning in

2008, and a decline in Avinza CR® products in 2009, a gradual decline in Kadian CR® products, and a 2008 rise and 2009 drop in methadone 5- and 10-milligram products. Morphine CR® and Morphine ER® products increased steadily over the 4-year time span, ultimately doubling the number of prescriptions. More research is needed to clarify these relationships.

Arrests for pharmaceutical narcotics have risen from 21 percent of arrests in 2007 to 37 percent in 2009. Among law enforcement narcotics seizures reported by the State laboratory, opiate analgesics constituted 13 percent in 2009; they rose to 19 percent during the first 5 months of 2010.

NFLIS data for 2007–2009 Maine seizures demonstrated that oxycodone dominated the narcotics identified over these 3 years, ranking in fourth place consistently. Methadone and/or hydrocodone ranked fifth and sixth in NFLIS data in 2007 and 2008, but buprenorphine took over sixth place in 2009.

Buprenorphine diversion and abuse has continued to increase in Maine, contributing to three deaths in 2008 and two in 2009. Buprenorphine constituted 2 percent of Maine's law enforcement seizures in 2009, and rose to 5 percent for the first 5 months of 2010. Among the 127 primary admissions for buprenorphine in 2009, 74 percent reported taking the drug orally, 16 percent by inhalation, and 8 percent by injection. The amount of abuse and diversion parallels an increase in legitimate prescribing. Among prescriptions documented in the Maine Prescription Monitoring Program, 22,698 prescriptions (3 percent) in FY 2006 were for Suboxone® and Subutex®; this has risen steadily to 64,102 prescriptions (7 percent) by FY 2009.

### **Benzodiazepines**

Benzodiazepines continued to play a substantial role in 2009 drug abuse, particularly among admissions and deaths. Benzodiazepines were often mentioned as secondary or tertiary problems in treatment admissions. For example, in 2008, for every primary benzodiazepine admission there were 4.5 secondary or tertiary admissions. By

2009, the number of primary admissions increased 29 percent (from 77 to 99) and the ratio of primary to secondary/tertiary admissions had risen 31 percent (i.e., one primary admission to 5.9 secondary or tertiary admissions).

In 2009, benzodiazepines were listed as a cause of death, usually as a co-intoxicant, in 31 percent of drug-induced deaths. The proportion of these deaths has risen steadily since 2000. Opiate/opioid pharmaceuticals were also listed as a cause of death in 84 percent of the benzodiazepine-caused deaths. Forty-three percent of methadone deaths and 44 percent of oxycodone deaths listed at least one benzodiazepine as a cause of death in 2009.

### **Methamphetamine**

Methamphetamine indicators were mixed in 2009, and numbers continued to be very small. Maine passed a precursor law putting pseudoephedrine behind the counter in 2006, but Maine continued to have occasional small methamphetamine laboratory incidents. In 2009, methamphetamine accounted for only 0.4 percent of primary admissions (excluding alcohol), no deaths, and 3 percent of arrests by the Maine Drug Enforcement Agency. Approximately 62 percent of methamphetamine seizure samples tested by the Maine State laboratory in 2008 were in tablet form, and 63 percent were in tablet form in 2009. In the first 5 months of 2010, however, only 23 percent of the methamphetamine samples were tablets. NFLIS 2009 data for Maine ranked methamphetamine fifth among drugs in terms of the number of items tested.

### **Marijuana**

Marijuana indicators continued to be high and mixed, with gradually decreasing treatment admissions over the last 6 years, from 34 percent in 2000 to 16 percent in 2009. The 2009 age and gender distribution of the treatment population has remained fairly stable, with 72 percent males, and 30 percent of admissions younger than 18, 31 percent age 18–25, 21 percent age 26–34, and 18 percent 35 and older.



There was an increase in arrests from 17 percent in 2008 to 22 percent in 2009, the largest proportion seen in 7 years. Seizure samples tested continued to decline; only 7 percent of samples were identified as marijuana in 2009, and this declined to 6 percent in the first 5 months of 2010. Cannabinoids were identified in 12 percent of impaired driver urine samples during the first 5 months of 2010. Maine passed a law allowing dispensaries for medical marijuana in November 2009. Rule-making has recently been completed and proposals from prospective organization are being evaluated.

## MDMA

Indicators for MDMA (3,4-methylenedioxy-methamphetamine) continued to be very small. There were only six MDMA primary admissions during 2009 and one death. The Maine Drug Enforcement Agency made eight MDMA arrests in 2008 and another eight in 2009. However, the number of law enforcement seizures tested and identified as MDMA in the Maine State laboratory has risen every year from 2007 (2 items) through 2009 (26 items), and again in 2010, based on extrapolation from the first 5 months of 2010 (31 items). The NFLIS ranking for Maine showed MDMA ranked in sixth place in 2009, just behind methamphetamine. Similar to 2009 proportions, among the nine MDMA items tested from January through May 2010, six were tablets. Four items tested as MDMA only. The other five contained one or more other substances, including three with caffeine, one with procaine, and one with a combination of MDMA, methamphetamine, BZP (1-benzylpiperazine), and TFMPP (1-3-(trifluoromethylphenyl)piperazine).

## Other Pharmaceutical Categories

Piperazines have appeared more often in Maine's law enforcement seizures in the last 3 years. During 2009, NFLIS ranked BZP in particular as 10th among items tested.

Mortality patterns have increasingly included a number of other categories of drugs. Deaths due

to effects of antidepressants constituted 34 percent of 2009 drug-induced deaths, compared with 29 percent in 2008. Key antidepressant proportions in 2009 included amitriptyline (5 percent), fluoxetine (4 percent), sertraline (5 percent), and citalopram (7 percent). Deaths caused by antipsychotics (particularly quetiapine) comprised 9 percent of 2009 deaths, compared with 8 percent of deaths in 2008. Deaths caused by the over-the-counter antihistamine diphenhydramine totaled 7 percent of 2009 deaths, down slightly from 9 percent in 2008. Muscle relaxants (cyclobenzaprine, carisoprodol, and baclofen) were implicated in 10 percent of 2009 deaths, up from 7 percent in 2008. Cyclobenzaprine was the muscle relaxant mentioned most often (7 percent of deaths in 2009).

## INFECTIOUS DISEASES RELATED TO DRUG ABUSE

### HIV/AIDS, Hepatitis B, and Hepatitis C

HIV/AIDS data revealed 56 new HIV diagnoses in 2009, 21 percent more than the 46 new diagnoses in 2008. Recent HIV mode of transmission data showed that most were due to men having sex with men—58 percent in 2008 (2009 proportions were not available), down slightly from 63 percent in 2007. Twelve percent of these were due to an injection drug use source. The number of reported acute hepatitis B cases nearly doubled, from 2005 to 2006 (14 to 26), but declined to 19 in 2008. The number of chronic hepatitis C cases increased slightly, from 1,192 in 2006, to 1,453 in 2007, the last year for which data are available.

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**Exhibit 1. Frequency and Percentage of Annual Treatment Admissions, by Primary Drug, Excluding Alcohol, for the State of Maine: 2003–2009**

<b>Primary Drug</b>	<b>2003 Freq (%)</b>	<b>2004 Freq (%)</b>	<b>2005 Freq (%)</b>	<b>2006 Freq (%)</b>	<b>2007 Freq (%)</b>	<b>2008 Freq (%)</b>	<b>2009 Freq (%)</b>
Cocaine	559 (10.9)	658 (11.5)	681 (12.7)	764 (14.2)	902 (13.7)	768 (10.5)	575 (7.2)
Heroin/Morphine	1,060 (20.7)	1,232 (21.6)	1,096 (20.5)	1,007 (18.7)	991 (15.0)	1,092 (14.9)	1,250 (15.6)
Other Opiates & Opioids	1,557 (30.4)	1,904 (33.3)	2,025 (37.8)	2,282 (42.3)	3,142 (47.6)	3,951 (54.0)	4,185 (52.2)
Marijuana	1,714 (33.5)	1,764 (30.9)	1,370 (25.6)	1,169 (21.7)	1,349 (20.5)	1,304 (17.8)	1,303 (16.3)
Methamphetamine	24 (0.5)	34 (0.6)	51 (1.0)	49 (0.9)	34 (0.5)	31 (0.4)	33 (0.4)
Other	705 (13.8)	184 (3.2)	134 (2.5)	122 (2.3)	602 (9.1)	172 (2.4)	671 (8.4)
<b>Total Admissions Excluding Alcohol</b>	<b>5,114 (100.0)</b>	<b>5,716 (100.0)</b>	<b>5,357 (100.0)</b>	<b>5,393 (100.0)</b>	<b>6,595 (100.0)</b>	<b>7,318 (100.0)</b>	<b>8,017 (100.0)</b>
<b>Total Admissions Including Alcohol</b>	<b>12,264</b>	<b>12,685</b>	<b>11,558</b>	<b>10,912</b>	<b>12,395</b>	<b>12,849</b>	<b>14,498</b>

SOURCE: Maine Office of Substance Abuse Treatment Data System

**Exhibit 2. Frequency and Percentage of Key Drugs and/or Categories<sup>1</sup> Mentioned on the Death Certificate as a Cause of Death, for the State of Maine: 2003–2009**

Key Drug	2003 Freq (%)	2004 Freq (%)	2005 Freq (%)	2006 Freq (%)	2007 Freq (%)	2008 Freq (%)	2009 Freq (%)
Cocaine	15 (9.8)	27 (16.7)	22 (12.5)	32 (19.2)	30 (19.5)	12 (7.3)	9 (5.0)
Heroin/Morphine	36 (23.5)	24 (14.8)	43 (24.4)	32 (19.2)	25 (16.2)	18 (11.0)	13 (7.3)
Pharmaceutical Morphine <sup>2</sup>	---	---	---	---	---	2 (1.2)	18 (10.1)
Oxycodone	29 (19.0)	15 (9.3)	17 (9.7)	24 (14.4)	38 (24.7)	27 (16.5)	50 (27.9)
Methadone	54 (35.3)	75 (46.3)	71 (40.3)	68 (40.7)	59 (38.3)	56 (34.1)	47 (26.3)
Benzodiazepines	27 (17.6)	35 (21.6)	35 (19.9)	36 (21.6)	36 (23.4)	39 (23.8)	56 (31.3)
Antidepressants	26 (17.0)	28 (17.3)	19 (10.8)	19 (11.4)	27 (17.5)	44 (26.8)	61 (34.1)
Illicit drugs	47 (30.7)	50 (30.9)	61 (34.7)	59 (35.3)	49 (31.8)	30 (18.3)	22 (12.3)
Pharmaceuticals	129 (84.3)	141 (87.0)	139 (79.0)	134 (80.2)	136 (88.3)	155 (94.5)	164 (91.6)
<b>Total Drug Deaths</b>	<b>153</b> <b>(100.0)</b>	<b>162</b> <b>(100.0)</b>	<b>176</b> <b>(100.0)</b>	<b>167</b> <b>(100.0)</b>	<b>154</b> <b>(100.0)</b>	<b>164</b> <b>(100.0)</b>	<b>179</b> <b>(100.0)</b>

<sup>1</sup>Drug categories are not mutually exclusive and do not add to 100 percent. Drugs may be implicated as a cause of death either alone or in combination with other drugs or alcohol.

<sup>2</sup>Beginning in 2008, pharmaceutical morphine is reported separately, if known, and subtracted from the heroin/morphine total (prior to 2008, heroin and morphine were reported together as one category). Note, however, that in some deaths it is not possible to differentiate pharmaceutical morphine from heroin.

SOURCE: Maine Office of Chief Medical Examiner

**Exhibit 3. Frequency and Percentage of Key Drug Arrest Categories<sup>1</sup>, in Maine: 2003–2009**

Key Drug	2003 Freq (%)	2004 Freq (%)	2005 Freq (%)	2006 Freq (%)	2007 Freq (%)	2008 Freq (%)	2009 Freq (%)
Cocaine/Crack	245 (37.9)	229 (37.5)	283 (39.1)	247 (43.6)	574 (44.9)	245 (33.3)	245 (26.0)
Heroin	114 (17.6)	98 (16.0)	97 (13.4)	18 (3.2)	86 (6.7)	44 (6.0)	60 (6.4)
Methamphetamine	10 (1.5)	17 (2.8)	8 (1.1)	38 (6.7)	40 (3.1)	9 (1.2)	27 (2.9)
Marijuana	129 (19.9)	127 (20.8)	125 (17.3)	111 (19.6)	248 (19.4)	116 (15.8)	216 (22.9)
Pharmaceutical Narcotics	125 (19.3)	68 (11.1)	182 (25.1)	136 (24.0)	274 (21.5)	235 (32.0)	347 (36.8)
Benzodiazepines	---	---	1 (0.1)	3 (0.5)	31 (2.4)	9 (1.2)	22 (2.3)
<b>Total Arrests</b>	<b>491</b> <b>(100.0)</b>	<b>611</b> <b>(100.0)</b>	<b>724</b> <b>(100.0)</b>	<b>567</b> <b>(100.0)</b>	<b>1,276</b> <b>(100.0)</b>	<b>735</b> <b>(100.0)</b>	<b>943</b> <b>(100.0)</b>

<sup>1</sup>Categories do not sum to 100 percent because all categories are not included in the table.

SOURCE: Maine Drug Enforcement Agency

**Exhibit 4. Percentage of Items Seized by Law Enforcement in Key Drug Categories<sup>1</sup> Identified by the Maine State Health and Environmental Laboratory: 2003 and 2006 to Early 2010**

Key Drug Category	2003 Percent	2006 Percent	2007 Percent	2008 Percent	2009 Percent	Jan–May 2010 Percent
Cocaine	36.2	43.3	50.1	44.1	43.4	45.3
Opiate Analgesic	12.2	18.3	14.8	12.2	13.3	18.6
Heroin	18.2	10.2	7.2	8.5	14.7	7.6
Marijuana	15.3	11.3	11.1	7.6	7.1	6.4
Benzodiazepine	2.8	4.9	3.0	3.7	1.6	1.2

<sup>1</sup>Categories do not sum to 100 percent because all categories are not included in the table.

SOURCE: Maine State Health and Environmental Testing Laboratory

**Exhibit 5. Number of Prescriptions Written in Maine for Long-Acting Narcotic Products: FYs 2006–2009<sup>1</sup>**

Prescribed Drug Categories	FY 2006	FY 2007	FY 2008	FY 2009
Morphine CR® or ER® products	12,516	16,581	21,348	25,798
MS Contin CR® products	413	278	211	184
Kadian CR® products	15,868	11,699	9,614	7,876
Avinza CR® products	11,660	9,447	9,710	64
Methadone/Methadose® 40-mg <sup>2</sup>	5,174	5,539	599	98
Methadone/Methadose® 5-, 10-mg	29,975	31,887	43,799	37,243

<sup>1</sup>Fiscal year is July–June.

<sup>2</sup>Mg=milligram.

SOURCE: Maine State Prescription Monitoring Program, Office of Substance Abuse

# Drug Abuse Trends in South Florida: Miami/Dade and Broward Counties, Florida: 2009

James N. Hall<sup>1</sup>

## ABSTRACT

*Public health and criminal justice indicators of cocaine problems have continued to decline in South Florida over the past 3 years. Nonetheless, cocaine consequences remained higher in both Miami/Dade and Broward Counties than in most of the Nation's metropolitan areas in 2009. Most cocaine deaths in South Florida and across the State were among those age 35–50, while cocaine emergency department (ED) reports were greatest among those age 25–29. In 2009, cocaine accounted for 62 percent of all crime laboratory cases for Miami/Dade, Broward, and Palm Beach Counties combined, down from 67 percent in 2007. Declining cocaine trends may be related to the overall economic downturn of the past 3 years and lower purity of the drug entering the country. Local trends in heroin consequences increased between 2007 and 2008 but stabilized in 2009 at relatively low levels, compared with the rest of the Nation. Heroin represented the majority of opiate ED reports in Miami/Dade County, while prescription opioids accounted for most opiate ED reports and deaths in Broward County. Oxycodone (e.g., OxyContin®, Roxicodone®, and Percocet®), was the most frequently reported opioid involved in nonmedical use in the region and across Florida. Per capita rates of oxycodone ED reports in Broward County for patients age 21–29 were nearly double those for the Nation. Prescription opioid misuse was occurring among*

*heroin users. In 2008, 45 percent of heroin-related deaths in Florida also had at least one prescription opioid detected. The region is poised for an emerging “Opiate Epidemic” involving the use of both illicit heroin and prescription opioids and a potential escalation of injection drug use. Florida’s lack of any program for curtailing use of infected syringes represents a major public health threat. After ethyl alcohol, the benzodiazepine alprazolam (i.e., Xanax®) was the most frequently occurring drug found in deceased persons in Florida, with more than 90 percent of the cases also involving at least one other substance in combination. Methamphetamine indicators declined to very low levels; methamphetamine primary treatment admissions accounted for less than 1 percent of addiction treatment clients in Miami/Dade County. Marijuana ED reports declined in Miami/Dade County from 2005 to 2008 while increasing nationally. Primary treatment admissions for marijuana in 2009 outnumbered all other substances and accounted for 88 percent of all primary admissions (including alcohol) among clients younger than 18. One-half of all primary marijuana treatment clients were younger than 18. A Broward County study linked past-30-day marijuana use to higher occurrences of various delinquent behaviors, especially among middle school students. Synthetic cannabinoids were widely reported in the region; they were mistakenly considered to be “legal highs.” Either MDMA (3,4-methylenedioxymethamphetamine) or BZP (1-benzylpiperazine) were detected in alleged “ecstasy” crime laboratory cases. The Broward Sheriff’s Office Crime Laboratory reported 65 percent of 2010 alleged ecstasy cases to date at the time of this report were BZP.*

## INTRODUCTION

This report reviews data from 2008 and 2009 for drug-related deaths, medical emergencies, addiction treatment admissions, law enforcement intelligence, crime laboratory analysis, and prevalence of drug use among students. Information is presented

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by primary substance of abuse, with topics including cocaine, heroin, nonmedical use of prescription opioids, benzodiazepines, methamphetamine/amphetamines, marijuana, GHB (gamma hydroxybutyrate), MDMA (3,4-methylenedioxymethamphetamine) or ecstasy, and muscle relaxants. While the information is classified by a single drug or category, the reader should note an underlying problem of polysubstance abuse as mentioned throughout this report.

## Area Description

Located in the extreme southern portion of the Florida peninsula, Miami/Dade County has the State's largest population, with 2,398,245 residents, according to 2008 U.S. Census estimates. Sixty-two percent are Hispanic; 17 percent are Black non-Hispanic; 18 percent are White non-Hispanic; and 1.5 percent are Asian/Pacific Islanders. Miami is Dade County's largest city, with 360,000 residents. More than 100,000 immigrants arrive in Florida each year; one-half establish residency in Miami/Dade County. More than one-half of the county's population is foreign born.

Broward County, situated due north of Miami/Dade, is composed of Ft. Lauderdale, plus 28 other municipalities and an unincorporated area. The County covers 1,197 square miles, including 25 miles of coastline. According to 2008 U.S. Census estimates, the population was 1,751,234. The population is roughly 48 percent White non-Hispanic; 25 percent Black non-Hispanic; 23 percent Hispanic; and 3 percent Asian/Pacific Islanders. One-fourth of the county's population is foreign born. Broward County is the second most populated county in Florida after Miami/Dade, and accounts for almost 10 percent of Florida's population.

Palm Beach County (population 1,265,293) is located due north of Broward County and is the third most populated county in the State. The population is 64 percent White non-Hispanic; 17 percent Hispanic; 15 percent Black non-Hispanic; and 2 percent Asian/Pacific Islanders. Seventeen percent of the county's population is foreign born. Together, the 5.4 million people of these three

counties constitute 30 percent of the State's 18.3 million population.

Since 2003, these three counties have constituted the federally designated Metropolitan Statistical Area (MSA) for South Florida, making it the sixth largest MSA in the Nation. Previously, the MSA included only Miami/Dade County. This means that the three counties are included in more national data sets tracking health-related conditions and criminal justice information.

Approximately 25 million tourists visit South Florida annually. The region is a hub of international transportation and the gateway to commerce between the Americas, accounting for sizable proportions of the Nation's trade. South Florida's airports and seaports remain among the busiest in the Nation for both cargo and international passenger traffic. These ports of entry make this region a major gateway for illicit drugs.

Several factors impact the potential for drug abuse problems in South Florida, including the following:

- The area's proximity to the Caribbean and Latin America exposes South Florida to the entry and distribution of illicit foreign drugs destined for all regions of the United States. Haiti and Jamaica are transshipment points for Colombian traffickers.
- South Florida is a designated High Intensity Drug Trafficking Area and one of the Nation's leading cocaine importation centers. It has also been a gateway for Colombian heroin since the 1990s.
- Extensive coastline and numerous private air and sea vessels make it difficult to pinpoint drug importation routes into Florida and throughout the Caribbean region.
- Lack of a prescription monitoring system in Florida in the time periods covered by this report made the State, and particularly Broward County, a source for diverted medications in the eastern United States. A prescription monitoring system was enacted in July 2009 and is expected to be operational by December 2010.

## Data Sources

This report describes current drug abuse trends in South Florida, using the data sources summarized below:

- **Drug-related mortality data** were provided by the Florida Department of Law Enforcement (FDLE) Medical Examiners Commission's *2009 Report of Drugs Identified in Deceased Persons between January and December 2009*.
- **Data on drug overdose deaths in Palm Beach County** came from a 2008 study conducted by Gary Martin, Ed.D., of Lynn University, and the Palm Beach County Sheriff's Office.
- **Emergency Department (ED) data** were derived for Miami/Dade and Broward Counties from the Drug Abuse Warning Network (DAWN), Substance Abuse and Mental Health Services Administration (SAMHSA). The data represent drug reports involved in drug-related visits for illicit drugs (derived from the category of "major substances of abuse," excluding alcohol) and the nonmedical use of selected prescription drugs (derived from the category of "other substances"). Drug reports exceed the number of ED visits because a patient may report use of multiple drugs (up to six drugs plus alcohol). Weighted DAWN data for calendar years 2004–2008 are included in this report and provide estimates of the total number of drug-related ED visits for selected substances for all of Miami/Dade County in those 5 years and the DAWN Ft. Lauderdale Division (Broward and Palm Beach Counties) only for 2008, the first year for which DAWN weighted estimates were provided in that division. Unweighted, preliminary Miami/Dade ED data for the first half of 2009 are from the DAWN *Live!* restricted-access online query system administered by the Office of Applied Studies (OAS), SAMHSA. Eligible hospitals in only the Miami/Dade County Division totaled 21; hospitals in the DAWN sample numbered 19, with the number of EDs in the sample also totaling 19. (Some hospitals have more than one emergency department.)

During January to June 2009, nine EDs reported data each month. The completeness of data reported by participating EDs varied by month (exhibit 1). Exhibits in this paper for the first half of 2009 Miami/Dade County data reflect cases that were received by DAWN as of December 22, 2009. Unweighted Broward County ED data for the first half of 2009 are also from the DAWN *Live!* restricted-access online query system. Eligible hospitals in the Ft. Lauderdale Division only (that includes Broward and Palm Beach Counties) totaled 27; there were 21 hospitals in the DAWN sample, and the number of EDs in the sample also totaled 21. During January to June 2009, nine EDs reported data each month. The completeness of data reported by participating EDs varied by month (exhibit 2). DAWN *Live!* exhibits in this paper for Broward and Palm Beach Counties reflect cases that were received by DAWN as of December 22, 2009. Based on the DAWN *Live!* reviews, cases may be corrected or deleted; thus, the unweighted data presented in this paper are subject to change. Data derived from DAWN *Live!* represent drug reports in drug-related ED visits. The DAWN *Live!* data are unweighted and are not estimates for the reporting area. DAWN *Live!* data cannot be compared with DAWN data from 2002 and before, nor can preliminary data be used for comparison with future data. Only weighted DAWN data for 2004–2008 released by SAMHSA may be used for trend analysis as provided. A full description of the system can be found on the DAWN Web site <http://dawninfo.samhsa.gov>.

- **Drug treatment data** on primary admissions to all publicly funded addiction treatment programs in Miami/Dade and Broward Counties during calendar year 2009 were provided by the Florida Department of Children and Families.
- **Crime laboratory drug analyses data** were derived from the Drug Enforcement Administration's (DEA's) National Forensic Laboratory Information System (NFLIS) Report for Miami/Dade, Broward, and Palm Beach Counties from January through December 2009. However, the



NFLIS data combines some, but not all, pharmaceutical items into the category of “controlled substance.” This factor makes it difficult to track the role of illegally diverted medications, particularly in Broward County where other indicators of nonmedical prescription drug misuse are elevated.

- **Drug pricing data** for South Florida were derived from the National Drug Intelligence Center (NDIC), *National Illicit Drug Prices Mid-Year 2009—February 2010*.
- **Data on the prevalence of marijuana use and delinquent behaviors among middle and high school students** in Broward County are from the 2008 Florida Department of Children and Families’ Florida Youth Substance Abuse Survey (FYSAS).
- **Data on the prevalence of marijuana use among Florida students in grades 8, 10, and 12** came from the Florida Department of Children and Families’ 2009 FYSAS and the Centers for Disease Control and Prevention (CDC) Youth Risk Behavior Survey (YRBS) for 2009; data for students across the Nation came from the National Institute on Drug Abuse’s 2009 Monitoring the Future Survey.
- **Data on injection drug use** among acquired immune deficiency syndrome (AIDS) cases are from Miami/Dade and Broward Departments of Health.

Other information on drug use patterns was derived from ethnographic research and callers to local drug information hotlines as well as the United Way of Broward County Commission on Substance Abuse’s Emerging Issues Task Force.

## DRUG ABUSE PATTERNS AND TRENDS

### Cocaine/Crack

South Florida’s cocaine epidemic is characterized by consequences that rank among the highest in the Nation. Cocaine abuse indicators had been rising since 2000 across the State, but remained

relatively stable in Miami/Dade and Broward Counties at high numbers through 2006. In 2007, there were modest increases in the numbers of cocaine-related deaths in Broward County and across Florida, along with a significant increase in Miami/Dade County that may be attributed to underreporting in the previous year. Declines in the number of cocaine reports among deceased persons that began in 2008 continued through 2009 in Miami/Dade, Broward, and Palm Beach Counties, as well as for the State of Florida. Cocaine indicators, however, still dominated consequences of drug abuse. The majority of cocaine deaths and addiction treatment reports were among those older than 35, while medical emergencies related to cocaine were highest among those age 25-44. Many of the indicators reflected cocaine use in combination with other drugs, including prescription opioids and benzodiazepines.

Throughout Florida, the number of cocaine-related deaths decreased 18 percent in 2009 as compared with 2008, following an 18-percent decrease between the previous 2 years. These declines since 2007 reversed what had been an upward trend since 2000. A cocaine-related death is defined as a death in which cocaine is detected in the decedent but not necessarily considered the cause of death. There were 1,462 cocaine-related deaths across Florida in 2009, compared with 1,791 in 2008. The 2007 total of 2,179 reports was the highest number since the drug has been tracked beginning in the late 1980s. The number of cocaine deaths increased 97 percent between 2001 and 2007; the key factor for that rise appears to be a corresponding 105-percent increase of deaths with cocaine-in-combination with other drugs, particularly prescription medications. Among the 1,462 cocaine-related deaths in Florida during 2009, 79 percent of the cases involved cocaine in combination with at least 1 other drug.

In Florida, a drug is considered to be the cause of death if it is detected in an amount considered a lethal dose by the local medical examiner (ME). Among the cocaine-related deaths statewide in 2009, 529 (or 36 percent) were considered to be cocaine-induced.

There were 155 deaths related to cocaine use in Miami/Dade County during 2009, representing a 23-percent decrease from the 201 reported in 2008 (exhibit 3). Cocaine was detected at a lethal level in 16 percent of the 2009 cases. Cocaine was found in combination with another drug in 68 percent of the cases. None of the cocaine-related fatalities were younger than 18; 14 percent were age 18–25; 22 percent were 26–34; 39 percent were 35–50; and 25 percent were older than 50. Miami/Dade County's number of cocaine deaths in 2009 ranked highest among all other counties in the State.

There were 135 deaths related to cocaine abuse in Broward County in 2009, representing a 8-percent decrease over the 146 deaths in 2008 (exhibit 3). Cocaine was detected at a lethal level in 51 percent of the 2009 cases in Broward County. Cocaine was found in combination with another drug in 68 percent of the related death cases. One of the cocaine-related fatalities was younger than 18; 10 percent were age 18–25; 24 percent were 26–34; 44 percent were 35–50; and 21 percent were older than 50. Broward County's number of cocaine-related deaths ranked fourth among the 24 ME districts in the State.

The Orlando ME district reported the second highest number of cocaine-related deaths in the State during 2009, with 145 cases, followed by St. Petersburg with 139, Broward County with 135 reports, and Palm Beach County with 126. The St. Petersburg ME District (Pasco and Pinellas Counties) had the highest number of lethal cocaine cases, with 72 such deaths, followed by Broward County with 69 lethal cocaine reports.

The DAWN weighted estimate of 7,498 cocaine-involved ED visits for Miami/Dade County during 2008 (exhibit 4) accounted for 56 percent of all ED visits among five substances (three illicit drugs—cocaine, marijuana, and MDMA—and nonmedical use of prescription opioids and benzodiazepines). Between 2005 and 2008, the number of cocaine-involved ED visits declined 43 percent in Miami/Dade County, from 13,061 to 7,498 (exhibit 5). The per capita rates of cocaine-involved ED visits in Miami/Dade County were more than double the national rates

from 2004 to 2007. In 2008, the per capita rate of 312.6 cocaine ED visits per 100,000 people was almost double the national rate of 158.6. Cocaine ED visits were greatest among those age 25–29 in 2008, with a Miami/Dade per capita rate of 853 reports per 100,000 for that age group almost triple the Nation's rate of 292.

The DAWN weighted estimate of 5,560 cocaine-involved ED visits for Broward County during 2008 (exhibit 4) accounted for 40 percent of all ED reports among 6 substances (4 illicit drugs—cocaine, marijuana, heroin, and MDMA—and nonmedical use of prescription opioids and benzodiazepines). Since 2008 was the first year in which weighted DAWN estimates have been provided for Broward County no trend analysis is possible. The 2008 per capita rate of 184.3 cocaine ED reports per 100,000 people in Broward County was above the national rate of 158.6 but significantly below the Miami/Dade rate of 312.6.

During the first 6 months of 2009, unweighted data from DAWN *Live!* showed 1,522 cocaine reports from a sample of 9 of 19 emergency departments (EDs) in Miami/Dade (exhibit 6). Cocaine was the most frequently cited substance in local DAWN *Live!* ED reports. Among eight major substances of abuse, cocaine represented 34 percent of the unweighted ED reports in the first half of 2009.

During the first 6 months of 2009, unweighted data from DAWN *Live!* showed 980 cocaine reports from a sample of 9 Broward EDs (exhibit 7). Cocaine was the second most frequently cited substance after the category of alcohol in combination with another drug in local DAWN *Live!* ED reports. Among eight major substances of abuse, cocaine represented 22 percent of the unweighted ED reports in the first half of 2009.

There were 867 primary admissions for cocaine smoking (crack), and an additional 690 for powder cocaine in Miami/Dade County during 2009 (exhibit 8). These accounted for a total of 1,557 (or 28 percent) of the 5,542 publicly funded primary treatment admissions (including 1,289 for alcohol) in Miami/Dade County in 2009, as reported by the Florida Department of Children

and Families. Sixty-one percent of the cocaine clients were age 35 or older.

In Broward County, there were 610 primary admissions for cocaine smoking (crack), and an additional 159 for powder cocaine, accounting for a total of 769 (or 15 percent) of the 5,258 publicly funded primary treatment admissions (including 1,254 for alcohol) in 2009 (exhibit 8). Seventy percent of the cocaine clients were age 35 or older.

Cocaine continued to be the most commonly analyzed substance by local crime laboratories. It accounted for 15,309 items, or 62 percent, of the 24,772 total samples tested in the MSA comprised of Miami/Dade, Broward, and Palm Beach Counties in 2009 (exhibit 9).

Powder cocaine and crack continued to be reported as “widely available” throughout Florida. According to the NDIC, during the first half of 2009, powder cocaine sold for \$17,000–\$32,000 per kilogram retail, \$700–\$1,200 per ounce (unchanged from 2008 and 2007), and \$100 per gram retail in Miami. However, local ethnographic sources cited \$40 per gram as a common retail price. Numerous reports of adulterated cocaine continued; a majority of imported kilos arriving in South Florida were estimated to be cut with levamisole (a veterinary medicine), believed to have been added at processing laboratories in Colombia. Levamisole-contaminated cocaine has been linked elsewhere to cases of the low white blood cell disorder, agranulocytosis. Crack cocaine in 2009 sold for \$750–\$900 per ounce (up from \$750 in 2008 and 2007), \$20–\$75 per gram (up from \$20 to \$45 per gram in 2008), and \$10 per 0.1 gram “rock.”

## Heroin

South American heroin has been entering the South Florida area over the past two decades. However, reports and seizures of Mexican black tar heroin in South Florida have been made since 2008. Deaths caused by heroin declined in Florida from 2001 to 2006, then increased between 2006 and 2008 before declining again in 2009. Substantial increases in abuse and consequences of narcotic analgesic use have occurred as heroin problems were waning.

Abuse of narcotic pain medication has fueled opioid consequences, and may lead to some users also taking heroin. Most heroin ED patients and addiction treatment admissions continued to be among older, White males. Yet, consequences among those younger than 35 were increasing. Polydrug abuse patterns have facilitated first-time use of opiate drugs, including heroin.

Throughout Florida, the number of heroin-related deaths decreased 16 percent during 2009, compared with 2008. There were 111 heroin-related deaths across Florida in 2009. Heroin continued to be the most lethal drug, with 86 percent ( $n=95$ ) of heroin-related deaths in 2009 caused by the drug. There were 132 heroin-related deaths in 2008. Heroin-related deaths have declined 66 percent from the 328 deaths in 2001, yet deaths from prescription narcotic opioids increased over the same period. Polysubstance abuse was noted in 91 percent of the 2009 heroin-related deaths statewide.

Among the 132 heroin-related deaths in Florida during 2008, 45 percent (or 59) had one or more prescription opioids present at the time of death (exhibit 10). There were a total of 80 opioids detected among the 59 decedents including 36 that were considered a lethal dose and a cause of death.

In 2009, Miami/Dade County accounted for 27 percent of all heroin-related deaths in Florida; heroin was found at a lethal dose level in 26 of the 30 deaths in which the drug was detected in the county during 2009. Other drugs were detected in 87 percent of the 2009 cases. None of the heroin-related fatalities were younger than 18, while one (3 percent) was age 18–25. Eight of the heroin-related decedents (27 percent) were age 26–34; 14 (47 percent) were age 35–50; and 7 (23 percent) were older than 50. The 30 heroin-related deaths in Miami/Dade during 2009 reflected a 21-percent decrease over the 38 deaths in 2008. Lethal heroin deaths peaked in Miami/Dade County in 2000 with 61 fatalities.

In Broward County, heroin was detected at a lethal dose level in seven of the eight heroin-related deaths during 2009. Other drugs were detected in all of the heroin cases. The 8 heroin-related deaths

during 2009 in Broward County reflected a 53-percent decrease over the 17 deaths in 2008. Lethal heroin deaths peaked in Broward County in 2001 with 51 fatalities. None of the 2009 heroin-related fatalities were younger than 26; two (25 percent) were age 26–34; three (38 percent) were 35–50; and three (38 percent) were older than 50.

During the first half of 2009, unweighted DAWN *Live!* data for Miami/Dade County showed 452 ED heroin reports (exhibit 6). Among major substances of abuse (excluding alcohol), heroin represented 16 percent of the ED reports. Weighted DAWN visit estimates for heroin were not available for Miami/Dade County in 2008 because the sample numbers were not adequate.

The DAWN weighted estimate of 539 heroin-involved ED visits for Broward County during 2008 (exhibit 4) accounted for 4 percent of all ED visits among 6 substances (4 illicit drugs—cocaine, marijuana, heroin, and MDMA—and nonmedical use of prescription opioids and benzodiazepines).

During the first half of 2009, unweighted DAWN *Live!* data for Broward County showed 143 heroin ED reports (exhibit 7). Among eight major substances of abuse (including alcohol in combination with another drug), heroin represented 3 percent of the ED reports.

During the first half of 2009, heroin accounted for 73 percent of opiate unweighted ED reports in Miami/Dade County. By contrast, in neighboring Broward County prescription opioids accounted for 84 percent of opiate ED reports. Miami/Dade County is the State’s “heroin hub” where most of that drug’s consequences are observed among either residents or visitors.

There were 150 primary admissions for heroin, or 2.7 percent of the 5,542 publicly funded primary treatment admissions in Miami/Dade County, as reported by the Florida Department of Children and Families in 2009 (exhibit 8). Males accounted for 73 percent of the heroin clients, and 59 percent of the heroin clients were age 35 or older.

There were 105 primary admissions for heroin in Broward County, accounting for 2 percent of the 5,258 publicly funded primary treatment admissions in 2009 (exhibit 8). Males accounted for 79

percent of the heroin clients, while 42 percent were age 26–34, and 38 percent were age 35 or older.

Heroin accounted for 773 cases, or 3.1 percent of all items analyzed by crime laboratories in 2009 for the three-county South Florida MSA, as reported by NFLIS. Heroin ranked third among all substances analyzed in the MSA (exhibit 9).

According to the NDIC, heroin prices at all levels in 2009 remained unchanged in the region from those in 2007, with heroin selling for \$42,000–\$70,000 for 1 kilogram and for \$1,800 per ounce; retail prices were roughly \$35–\$50 per gram. The most common street unit of heroin was a bag of heroin (roughly 15–20 percent purity) weighing about one-tenth of a gram, and that sold for \$10.

### Nonmedical Use of Prescription Opioids

During 2009, 5,275 individuals died in Florida with 1 or more prescription drugs in their system, of which 47 percent ( $n=2,488$ ) had at least 1 prescription medication that was considered a cause of death. In total there were 11,109 prescription drugs detected (including 6,006 opioids), and 4,376 (or 39 percent of the total medication occurrences) were considered at a lethal dose and a cause of death, including 48 percent ( $n=2,897$ ) of the opioids. The number of drug occurrences exceeded the number of deaths because many decedents had more than one substance detected, including another prescription medication, illicit drug, or alcohol.

Between 2008 and 2009, statewide reports in Florida related to the category of prescription opioids detected among deceased persons increased 10 percent, from 5,457 to 6,006, following a 8-percent rise between 2007 ( $n=5,059$ ) and 2008. Reports of hydrocodone (Vicodin®, Lortab®), oxycodone (OxyContin®, Roxicodone®, and Percocet®), and methadone (Dolophine®) identified among decedents have been tracked in Florida since 2000. Beginning in 2003, morphine (MS Contin® and Roxanol®), propoxyphene (Darvon®), fentanyl (Fentora®), hydromorphone (Dilaudid® and Palladone®), meperidine (Demerol HCl®), tramadol (Ultram®), Buprenorphine (Buprenex® and

Suboxone®) oxymorphone (Opana® and Numphan®) and other opioids were included in the Florida Medical Examiners Commission's surveillance monitoring program. Occurrences of 5 prescription opioids detected among deceased persons during 2009 totaled 415 in Broward County, 158 in Miami/Dade County, and 342 in Palm Beach County.

Across Florida, the number of oxymorphone reports detected among deceased persons ( $n=236$ ) increased 242 percent between 2008 and 2009, and those for oxycodone ( $n=1,948$ ) increased 24 percent, while the number of occurrences for tramadol ( $n=268$ ) increased 14 percent, hydromorphone reports ( $n=21$ ) increased 6.5-percent, and methadone reports ( $n=985$ ) were up 5 percent.

The most lethal prescription opioids statewide were methadone, which was considered a cause of death for 73 percent ( $n=720$ ) of the decedents in which it was detected; oxycodone was a cause of death for 61 percent ( $n=1,185$ ) of the deaths related to it; fentanyl was a cause of death for 57 percent ( $n=122$ ) of its occurrences; and morphine had a 45 percent lethal rate ( $n=302$ ). Most of the statewide ME prescription opioid cases were polydrug episodes, including 91 percent of the oxycodone reports, 90 percent of the methadone cases, 89 percent of the hydrocodone reports, 78 percent of morphine cases, and 77 percent of propoxyphene-related deaths.

Miami/Dade County recorded 66 oxycodone occurrences among deceased persons in 2009, 38 morphine reports, 27 for hydrocodone, 14 for methadone, and 13 for propoxyphene. These 158 combined reports represented a 27-percent increase from the 124 opioid occurrences in 2008. Among the total opioid reports in 2009, 42 percent were considered lethal doses, and 82 percent were found in combination with at least one other substance. Most of the deaths occurred among those age 35–50; 35 percent of Miami/Dade oxycodone deaths in 2009 were 35–50, and 47 percent were over 50 (exhibit 11).

Broward County recorded 225 oxycodone occurrences among deceased persons in 2009, 57 reports for morphine, 60 for methadone, 46 for hydrocodone, and 27 for propoxyphene. These

415 combined reports represented a 21-percent increase from the 342 opioid occurrences in 2008. Among the total opioid reports in 2009, 62 percent were considered lethal doses, and 91 percent were found in combination with at least one other substance. Most of the deaths occurred among those age 35 years and older; 38 percent of Broward County oxycodone deaths in 2009 were in that age group.

Palm Beach County recorded 184 oxycodone occurrences among deceased persons in 2009, 60 reports for methadone, 45 for hydrocodone, 38 for morphine, and 15 for propoxyphene. These 342 combined mentions represented a 5-percent decrease from the 361 opioid occurrences in 2008. Among the total opioid reports in 2009, 67 percent were considered lethal doses, and 88 percent were found in combination with at least one other substance. Most of the deaths occurred among those age 35–50; 38 percent of Palm Beach County oxycodone deaths in 2009 being in that age group.

A 2008 study conducted by Dr. Gary Martin of Lynn University and the Palm Beach County Sheriff's Office of 207 drug overdose deaths in Palm Beach County found that 85 percent had more than 1 drug present at the time of death. The average decedent was a 39-year-old White male with a high school diploma or a GED who died at home during sleep, with others present who were aware of the fatal drug use and had recognized distress. At least one-third of the decedents had a history of substance abuse as well as drug-related arrests, some substance abuse and/or mental health treatment, and was under the care of a physician. Most had experienced a nonfatal drug overdose. The report identifies that most drug overdose deaths are preventable, particularly with early intervention and public education.

The DAWN weighted estimate of 711 ED visits for nonmedical use of prescription opioids in Miami/Dade County during 2008 (exhibit 4) accounted for 5 percent of all ED reports among 5 substances (3 illicit drugs—cocaine, marijuana, and MDMA—and nonmedical use of prescription opioids and benzodiazepines). Between 2007 and 2008 the number of prescription opioid-involved

ED visits declined 4 percent in Miami/Dade County (exhibit 5).

Unweighted DAWN *Live!* data for Miami/Dade showed 165 opioid analgesic reports in the first half of 2009, as compared with 452 reports for heroin (exhibit 6). Among the narcotic analgesic reports, 64 (or 39 percent) were oxycodone-involved ED reports. The total also included 18 hydrocodone reports, 12 hydromorphone reports, 9 morphine reports, 6 methadone reports, 5 fentanyl reports, 1 buprenorphine report, and 36 unspecified opioid reports.

The weighted DAWN estimate of 2,364 ED visits for nonmedical use of prescription opioids in Broward County during 2008 (exhibit 4) accounted for 17 percent of all ED visits among 6 substances (4 illicit drugs—cocaine, marijuana, heroin, and MDMA—and nonmedical use of prescription opioids and benzodiazepines). The Broward County per capita rate of 37.9 oxycodone ED visits per 100,000 population in 2008 was above the national rate of 34.6 such visits per 100,000 population. The rates for those in their twenties were almost doubled in Broward compared with the Nation, with 141.4 reports per 100,000 for those age 21–24, compared with 69.8 across the country, and 121.6 reports per 100,000 in Broward for those age 24–29, compared with 64.8 nationally (exhibit 12). The rate for females of all ages in Broward was 41.1 per 100,000, compared with 31.1 nationally, while the rate for males was 34.5 in Broward County, slightly below the national rate of 38.2.

Unweighted DAWN *Live!* data for Broward County showed 752 opioid analgesic reports in the first half of 2009 as compared with 143 reports for heroin (exhibit 7). Among the narcotic analgesic reports, 399 (or 53 percent) were oxycodone-involved ED reports. The total also included 71 reports for methadone, 37 for hydrocodone, 27 for morphine, 21 for hydromorphone, 10 for fentanyl, 8 for buprenorphine, and 170 unspecified opioid reports.

A comparison of opiate DAWN *Live!* ED reports for heroin and prescription opioids in Broward and Miami/Dade Counties during the first

half of 2009 showed different patterns of use. Heroin accounted for 73 percent of opiate unweighted ED reports in Miami/Dade County, while in Broward County prescription opioids accounted for 84 percent of opiate ED reports.

There were 113 primary admissions for opiates other than heroin, or 2 percent of the 5,542 publicly funded primary treatment admissions in Miami/Dade County, as reported by the Florida Department of Children and Families in 2009 (exhibit 8). Males accounted for 55 percent of the other opiate clients. Forty-one percent of the admissions were age 26–34, 37 percent were 35 or older, and 20 percent were age 18–25.

In Broward County there were 336 primary admissions for opiates other than heroin in 2009 (exhibit 8), accounting for 6 percent of the 5,258 publicly funded primary treatment admissions. Males accounted for 55 percent of the other opiate clients. Thirty-seven percent of these clients were age 18–25, 32 percent were age 26–34, and 31 percent were 35 or older.

NFLIS reported 339 oxycodone crime laboratory cases, 65 hydrocodone items, 14 methadone cases, and 6 propoxyphene cases. Combined together these 424 reports represented 1.7 percent of all drug items analyzed in the three-county South Florida MSA (exhibit 9). There were also 1,044 “unspecified controlled substance” cases in the 2009 NFLIS report, many of which were prescription opioids.

### **Nonmedical Use of Prescription Benzodiazepines**

Benzodiazepines in general, and alprazolam (Xanax®) in particular, were a substantial problem in South Florida in this reporting period. There were 4,340 reports of a benzodiazepine present in deceased persons across Florida in 2009, representing a 4-percent increase over the 4,167 cases in the previous year. Of the benzodiazepine occurrences in 2009, a benzodiazepine was identified as causing 1,099 deaths, with a total of 1,324 lethal benzodiazepine occurrences. Among the benzodiazepine ME reports statewide, 1,963 were

attributed to alprazolam, and 892 were attributed to diazepam (Valium®); 42 percent of the alprazolam occurrences and 28 percent of the diazepam reports were considered to be lethal doses.

In Miami/Dade County, there were 97 reports of alprazolam detected in deceased persons during 2009, of which 43 percent were considered a lethal dose. Eighty percent of the reports involved at least one other drug. There were also 27 reports of diazepam detected in deceased persons in Miami/Dade County; 26 percent were considered to be the cause of death, and 74 percent of these deaths involved at least one other drug. These 124 combined reports for alprazolam and diazepam represented a 17-percent decrease over the 145 deaths in 2008, and followed a 10-percent increase from 2007 to 2008. One of the combined mentions in 2009 involved a person younger than 18; 6 percent of the decedents were between age 18 and 25; 12 percent were age 26–34; 33 percent were age 35–50; and 48 percent were older than 50.

In Broward County, there were 245 reports of alprazolam detected in deceased persons during 2009, of which 60 percent were considered a lethal dose. Ninety-two percent of the reports involved at least one other drug. There were also 131 reports of diazepam detected in deceased persons in Broward County; 45 percent were considered to be the cause of death, and 92 percent of these deaths involved at least 1 other drug. These 376 combined reports for alprazolam and diazepam represented an 11-percent increase over the 339 deaths in 2008, and followed a 53-percent increase from 2007 to 2008. Broward County ranked first among all Florida counties or ME districts in the number of the two benzodiazepines detected among deceased persons. Two of the Broward County combined mentions in 2009 involved persons younger than 18; 6 percent of the decedents were between age 18 and 25; 17 percent were age 26–34; 40 percent were age 35–50; and 36 percent were older than 50.

In Palm Beach County, there were 158 reports of alprazolam detected in deceased persons during 2009, of which 54 percent were considered a lethal dose. Ninety-seven percent of the reports involved at least 1 other drug. There were also 71 reports

of diazepam detected in deceased persons in Palm Beach County; 25 percent were considered to be the cause of death, and 89 percent of these deaths involved at least 1 other drug. These 229 combined reports for alprazolam and diazepam represented a 7-percent decrease from the 246 deaths in 2008, and followed a 29-percent increase from 2007 to 2008. Two of the combined mentions in 2009 involved persons younger than 18; 16 percent of the decedents were between age 18 and 25; 14 percent were age 26–34; 38 percent were age 35–50; and 30 percent were older than 50.

The weighted DAWN estimate of 1,524 ED visits for nonmedical use of prescription benzodiazepine in Miami/Dade County during 2008 (exhibit 4) accounted for 11 percent of all ED reports among 5 substances (3 illicit drugs—cocaine, marijuana, and MDMA—and nonmedical use of prescription opioids and benzodiazepines).

Unweighted DAWN *Live!* data for Miami/Dade showed 309 nonmedical benzodiazepine reports in the first half of 2009 (exhibit 6). Non-medical reports included those for overmedication, malicious poisoning, and “other case types.” Generally, “other case types” are considered intentional substance abuse. Among the nonmedical benzodiazepine reports, 137 (or 44 percent) were alprazolam ED reports. The total also included 52 clonazepam (Klonopin®), 30 temazepam (Restoril®), 24 lorazepam (Ativan®), and 11 diazepam reports.

The weighted DAWN estimate of 2,274 ED visits for nonmedical use of prescription benzodiazepine in Broward County during 2008 (exhibit 4) accounted for 16 percent of all ED reports among 6 substances (4 illicit drugs—cocaine, marijuana, heroin, and MDMA—and nonmedical use of prescription opioids and benzodiazepines).

Unweighted DAWN *Live!* data for Broward County showed 693 nonmedical benzodiazepine reports (exhibit 7) in the first half of 2009. Of the total 693 reports, 29 percent did not identify the specific benzodiazepine. Among the 489 reports where the drug was named, 378 (or 77 percent) were for alprazolam. The total also included 40 clonazepam (Klonopin®), 32 lorazepam

(Ativan®), 26 diazepam reports, and 12 temazepam (Restoril®) reports.

There was only one admission for benzodiazepines reported in Miami/Dade County primary treatment admissions during 2009 (exhibits 8). In Broward County, there were 47 primary admissions for benzodiazepines during 2009, or 0.9 percent of 5,258 primary admissions (including alcohol).

NFLIS reported 568 alprazolam crime laboratory cases, 31 diazepam items, and 29 clonazepam cases during 2009 in the three-county South Florida MSA. Combined they represented 2.5 percent of all drug items analyzed (exhibit 9).

### **Methamphetamine/Amphetamines**

The number of methamphetamine clandestine laboratories has decreased in recent years following legislation limiting individual sales of pseudoephedrine. Indicators of methamphetamine abuse remained at low levels. While methamphetamine was cited as the primary drug for addiction treatment among only 1 percent of addiction treatment clients in Miami/Dade County during 2009, three-fourths of those clients were younger than 18.

Methamphetamine was detected among 81 deceased persons during 2009 statewide in Florida, representing a 29-percent decrease from the 114 occurrences in 2008. That followed a 7-percent increase between 2007 and 2008. Methamphetamine was considered the cause of death in 17 (21 percent) of the 81 cases during 2009. There were also 129 reports of amphetamine detected among decedents across Florida in 2009, a 93-percent increase over the previous year. Between 2007 and 2008, there was a 35-percent decrease in amphetamine-related ME reports. Amphetamine was considered the cause of death in 17 percent of the 129 cases in 2009.

Unweighted data accessed from DAWN *Live!* showed 20 methamphetamine-involved ED reports during the first half of 2009 in Miami/Dade County (exhibit 6), an increase over the 11 reports in the previous 6 months. There were also 15 amphetamine-related Miami/Dade ED reports during the first half of 2009.

Unweighted data accessed from DAWN *Live!* revealed 17 methamphetamine-related ED reports during the first half of 2009 in Broward County (exhibit 7) up from 8 reports in the previous 6 months. There were also 24 amphetamine-involved Broward ED reports during the first half of 2009, as compared with 28 in the second half of 2008.

There were 55 primary admission for methamphetamine, accounting for 1 percent of the 5,542 primary treatment admission drug mentions (including alcohol) in Miami/Dade County, as reported by the Florida Department of Children and Families during 2009 (exhibit 8). Males accounted for 82 percent of the methamphetamine clients. Three-fourths of these clients were younger than 18, 9 percent were age 18–25, 7 percent were age 26–34, and 9 percent were 35 or older. There were also two primary admissions for other amphetamines.

In Broward County, there were 20 primary admissions methamphetamine, accounting for 0.4 percent of the 5,258 publicly funded primary treatment admissions (including alcohol), as reported by the Florida Department of Children and Families in 2009 (exhibit 8). Males accounted for all but one of the methamphetamine clients. No methamphetamine client was younger than 18; 4 were age 18–25; 1 was 26–34; and 15 (or 75 percent) were 35 or older. There were also six primary admissions for other amphetamines.

Methamphetamine accounted for 110 cases, or 0.4 percent, of all items analyzed by crime laboratories in 2009 for the three-county South Florida MSA as reported by the NFLIS. It ranked ninth among all substances (exhibit 9).

In South Florida, methamphetamine has some of the highest prices in the Nation, at \$15,000–\$30,000 per pound as of June 2009 for powder Mexican methamphetamine. Mexican ice continued to sell for \$2,100 per ounce, unchanged from 2007. Powdered methamphetamine sold for \$200 per gram.

### **Marijuana/Cannabis**

Consequences of marijuana use and addiction continued. Declines in its rates of use among youth



since 2000 have halted and started to increase in recent State and national surveys. Marijuana is used by more Americans, particularly youth, than any other illicit drug. It is cited as the number one primary substance for addiction treatment in the State and both South Florida counties. Cannabinoids were detected in 817 deaths statewide in Florida during 2009, representing a 5-percent decrease compared with the 859 such reports the previous year.

The weighted DAWN estimate of 3,378 marijuana ED visits for Miami/Dade County during 2008 (exhibit 4) accounted for 25 percent of all ED visits among 5 substances (3 illicit drugs—cocaine, marijuana, and MDMA—and nonmedical use of prescription opioids and benzodiazepines).

Unweighted DAWN *Live!* data for Miami/Dade showed 745 marijuana reports in the first 6 months of 2009 (exhibit 6). Marijuana was the second most cited illicit drug among Miami/Dade County unweighted DAWN *Live!* ED reports, accounting for 26 percent of the 2,860 major substances of abuse reports (excluding alcohol and medications) during the first half of 2009.

The weighted DAWN estimate of 2,928 marijuana ED visits for Broward County during 2008 (exhibit 4) accounted for 21 percent of all ED visits among 6 substances (4 illicit drugs—cocaine, marijuana, heroin, and MDMA—and nonmedical use of prescription opioids and benzodiazepines).

Unweighted DAWN *Live!* data for Broward County showed 652 marijuana reports in the first 6 months of 2009 (exhibit 7) from the sample of 9 hospitals. Among eight major substances of abuse, marijuana represented 15 percent of the unweighted ED reports in the first half of 2009.

There were 2,118 primary admissions for marijuana dependence in Miami/Dade County during 2009 (exhibit 8), representing 38 percent of the 5,542 total publicly funded treatment admissions for all substances including alcohol. Seventy-five percent of the total primary marijuana clients were males. Clients younger than 18 represented 57 percent, and clients age 18–25 accounted for 22 percent of the primary marijuana admissions. Adults

age 26–34 represented 12 percent of all primary marijuana clients, and clients age 35 and older accounted for 9 percent.

There were 2,030 primary admissions for marijuana dependence in Broward County during 2009 (exhibit 8), representing 39 percent of the 5,258 total publicly funded treatment admissions for all substances including alcohol. Eighty-one percent of the total primary marijuana clients were males. Clients younger than 18 represented 42 percent, and clients age 18–25 accounted for 35 percent of the primary marijuana admissions. Adults age 26–34 represented 13 percent of all primary marijuana clients, and clients age 35 and older accounted for 10 percent.

Marijuana or cannabis accounted for 4,699 cases, or 19 percent of all items analyzed by crime laboratories in 2009 for the three-county South Florida MSA, as reported by NFLIS. Marijuana/cannabis ranked second among all substances after cocaine in the three-county MSA (exhibit 9).

Marijuana continued to be described as widely available throughout Florida, with local commercial, sinsemilla, and hydroponic grades available. As of 2009 in South Florida, the cost for a pound of commercial grade marijuana was \$650. Hydroponic and sinsemilla grades sold for \$2,500–\$4,000 per pound (down from a range of \$3,500–\$4,000 in 2007). The ounce price for commercial grade marijuana continued to be \$100–\$150. Sinsemilla sold for \$400–\$500 per ounce. Depending on its potency, marijuana sold for \$5–\$20 per gram.

Modest increases in marijuana use among national and Florida adolescents in 2009 reversed what had been a declining trend over the past decade. The 2009 FYSAS reported increases in any past-30-day use of marijuana for most middle and high school grades. The 2009 Monitoring the Future survey revealed a steady increase in past 30-day marijuana use among national 12th graders since 2006 and a 1-year rise between 2008 and 2009 for 8th and 10th graders. Use has increased while beliefs about the perceived harmfulness of using marijuana has regularly declined about 5 percentage points since 2000 for all three grade levels. Trends in the use of other drugs were declining or stable.

The percentage of Broward County middle school students who reported past-30-day use of marijuana on the 2008 FYSAS also reported significantly higher rates of eight different delinquent behaviors than students who had not used marijuana in the last 30 days (exhibit 13). The rates of delinquent behaviors among current middle school marijuana users were higher than those for current high school marijuana users or current middle or high school users of alcohol.

The 2009 YRBS reported the proportions of Miami/Dade high school students having used marijuana within the past 30 days before taking the survey as 19.3 percent (confidence interval [CI]=17.0–21.8), a significant increase from 14.5 percent (CI=12.7–16.6) in 2007 (exhibit 14). In Broward County, 23.7 percent (CI=21.2–26.5) of high school students reported having used marijuana within the 30 days before taking the 2009 YRBS survey, also a significant increase from 17 percent (CI=15.1–19.2) in 2007 (exhibit 14).

### **MDMA or Ecstasy**

Measures of MDMA (3,4-methylenedioxymethamphetamine) abuse have stabilized at relative low numbers since 2006. Ecstasy pills generally contain 75–125 milligrams of MDMA, although pills are often adulterated and may contain other drugs. Methamphetamine and the stimulant, BZP (1-benzylpiperazine), were increasingly reported in ecstasy pills, usually without MDMA. However, the synthetic drug TFMPP (1-3-(trifluoromethylphenyl) piperazine) has not been reported, perhaps because it is not a controlled drug. BZP in combination with TFMPP are frequently sold as ecstasy in Europe and other parts of the United States.

There were 32 MDMA-related deaths statewide in Florida in 2009, with the drug being cited as the cause of death in 7 of these cases. There were also 14 reports of MDA (3,4-methylenedioxyamphetamine)-related deaths statewide in Florida during the same year. There were an additional nine deaths related to other methylated amphetamines in 2009. During 2008, there were 44 MDMA-related deaths, and 23

MDA-related deaths. MDMA deaths decreased 27 percent and MDA deaths decreased 39 percent in 2009, compared with the previous year.

The weighted DAWN estimate of 294 MDMA-involved ED visits for Broward County during 2008 (exhibit 4) accounted for 2.2 percent of all ED visits among 5 substances (3 illicit drugs—cocaine, marijuana, and MDMA—and nonmedical use of prescription opioids and benzodiazepines).

In the first half of 2009, unweighted DAWN *Live!* data showed 54 MDMA reports in Miami/Dade (exhibit 6), as compared with 64 in the previous 6 months.

The weighted DAWN estimate of 220 MDMA-involved ED visits for Broward County during 2008 (exhibit 4) accounted for 1.6 percent of all ED visits among 6 substances (4 illicit drugs—cocaine, marijuana, heroin, and MDMA—and nonmedical use of prescription opioids and benzodiazepines).

There were three primary treatment admissions for MDMA in Broward County in 2009 and none in Miami/Dade County (exhibit 8).

MDMA accounted for 356 cases, or 1.4 percent of all items analyzed by crime laboratories in 2009 for the three-county South Florida MSA, as reported by NFLIS. MDMA ranked sixth among all substances in the three-county MSA (exhibit 9). There were also 136 items, or 0.5 percent of all items analyzed, identified as BZP and sold as ecstasy in 2009. One local crime laboratory reported that 65 percent of alleged ecstasy items identified to date in 2010 were BZP.

During 2009 in South Florida, ecstasy tablets sold for \$4–\$5 per tablet wholesale (in bulk), and \$9 retail for a single pill, according to the NDIC. These prices have continued to decline since 2006.

### **GHB**

Abuse of the anesthetic GHB (gamma hydroxybutyrate) has declined significantly in recent years. There are several compounds that are converted by the body to GHB, including GBL (gamma butyrolactone) and 1,4-butanediol (1,4-BD). Over the

past few years, GHB abuse has involved the abuse of 1,4- BD. Commonly used with alcohol, these substances have been implicated in drug-facilitated rapes and other crimes. GHB was declared a federally controlled Schedule I drug in March 2000, and indicators of its abuse have declined since that time.

There were six GHB-related deaths statewide during 2009, and the drug was considered the cause of death in two of those cases. There were three GHB-related deaths statewide in 2008, five in 2007; four in 2006; and nine deaths in 2005. Statewide in Florida, GHB-related deaths increased from 23 in 2000 to 28 in 2001; they then declined to 19 in 2002 before declining to 11 in 2003 and 2004.

Unweighted data accessed from DAWN *Live!* for Miami/Dade County showed no GHB-related ED reports in the first half of 2009, down from 12 reports 1 year ago, and 2 in the second half of 2008. Unweighted data accessed from DAWN *Live!* for Broward County showed 13 GHB-related ED reports in the first half of 2009, up from 10 in the second half of 2008.

NFLIS reported there were nine cases of 1,4-BD analyzed by the crime laboratories in Miami/Dade, Broward, and Palm Beach Counties in 2009, and there were two GBL cases but none for GHB.

### **Nonmedical Use of Prescription Muscle Relaxants**

Muscle relaxants may be abused in combination with MDMA and other drugs. There were 455 reports of carisoprodol or meprobamate among deceased persons in Florida during 2009, of which 98 (or 22 percent) were considered to be caused by the drug. The number of these deaths increased by 10 percent in 2009, from 415 deaths in 2008.

Unweighted DAWN *Live!* data for Miami/Dade County in the first half of 2009 showed 10

reports on nonmedical use of muscle relaxants. Carisoprodol was specifically cited in one-half of the reports. Unweighted DAWN *Live!* data for Broward County in the first half of 2009 showed 92 reports on nonmedical use of muscle relaxants. Carisoprodol was specifically cited in 85 percent of the reports. NFLIS reported 19 carisoprodol crime laboratory cases for the South Florida MSA in 2009.

### **Infectious Diseases Related to Drug Abuse**

As of December 31, 2009, 32,328 cumulative cases of AIDS had been reported in Miami/ Dade County. Among those cases, 15.9 percent identified as injection drug users (IDUs), and an additional 3.9 percent reported the dual risk of men who have sex with men (MSM)/IDU. Approximately 11 percent of the total cases have not been classified by a known risk category.

As of December 31, 2009, 18,825 cumulative cases of AIDS had been reported in Broward County. Among those cases 11.5 percent identified as IDUs, and an additional 3.9 percent reported the dual risk of MSM/IDU. Approximately 19 percent of the total cases have not been classified by a known risk category. Because of the cases not reported by a risk category, the rates of IDU cases are most likely higher for both counties.

*For inquiries regarding this report, contact James N. Hall, Center for the Study and Prevention of Substance Abuse, Nova Southeastern University c/o Up Front, Inc., 13287 S.W. 124th Street, Miami, FL 33186, Phone: 786-242-8222, Fax: 786-242-8759, E-mail: [upfrontin@aol.com](mailto:upfrontin@aol.com).*

**Exhibit 1. DAWN ED Miami/Dade County Sample and Reporting Information: January–June 2009**

Total Eligible Hospitals <sup>1</sup>	No. of Hospitals in DAWN Sample	Total EDs in DAWN Sample <sup>2</sup>	No. of EDs Reporting Month: Completeness of Data (%)			No. of EDs Not Reporting
			90–100%	50–89%	<50%	
21	18	18	8	0	1	9

<sup>1</sup>Short-term, general, non-Federal hospitals with 24-hour emergency departments based on the American Hospital Association Annual Survey.

<sup>2</sup>Some hospitals have more than one emergency department.

SOURCE: DAWN *Live!*, OAS, SAMHSA, updated December 22, 2009

**Exhibit 2. DAWN ED Ft. Lauderdale Division Sample and Reporting Information: January–June 2009**

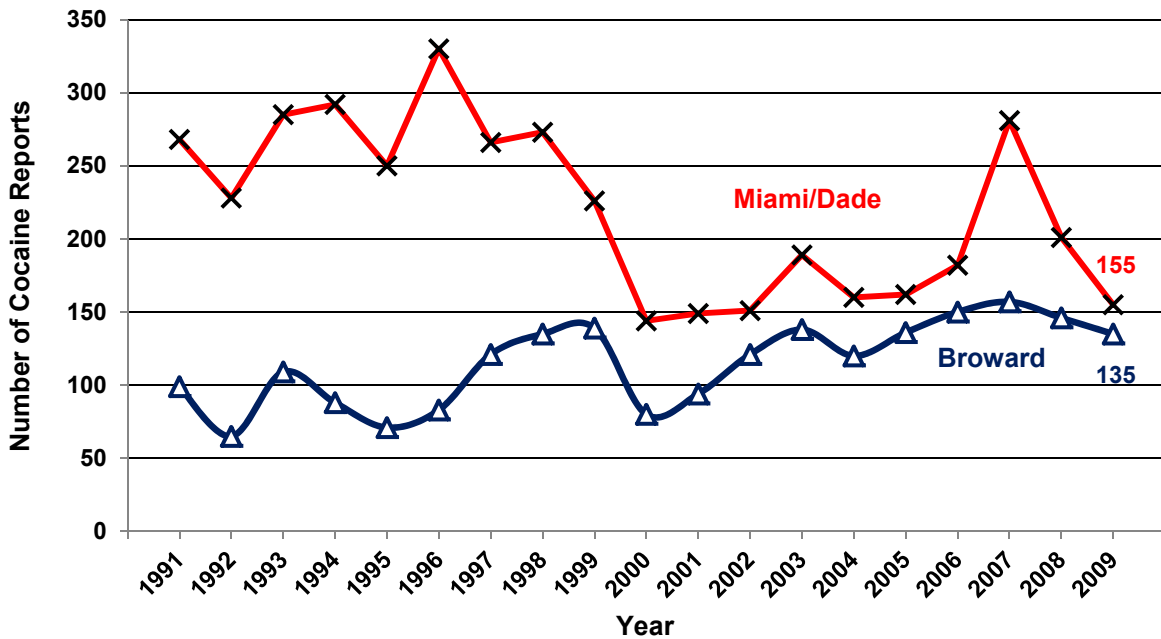
Total Eligible Hospitals <sup>1</sup>	No. of Hospitals in DAWN Sample	Total EDs in DAWN Sample <sup>2</sup>	No. of EDs Reporting Month: Completeness of Data (%)			No. of EDs Not Reporting
			90–100%	50–89%	<50%	
27	21	21	6	1–2	1–2	12

<sup>1</sup>Short-term, general, non-Federal hospitals with 24-hour emergency departments based on the American Hospital Association Annual Survey.

<sup>2</sup>Some hospitals have more than one emergency department.

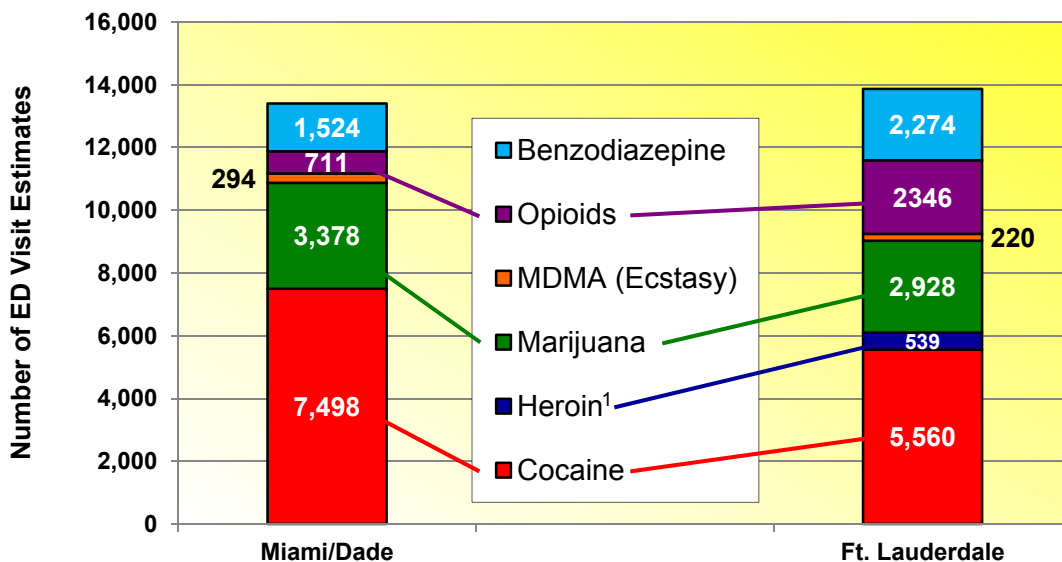
SOURCE: DAWN *Live!*, OAS, SAMHSA, updated December 22, 2009

**Exhibit 3. Number of Cocaine Reports Detected Among Decedents in South Florida: 1991–2009**



SOURCE: Florida Medical Examiners Commission Report 2009

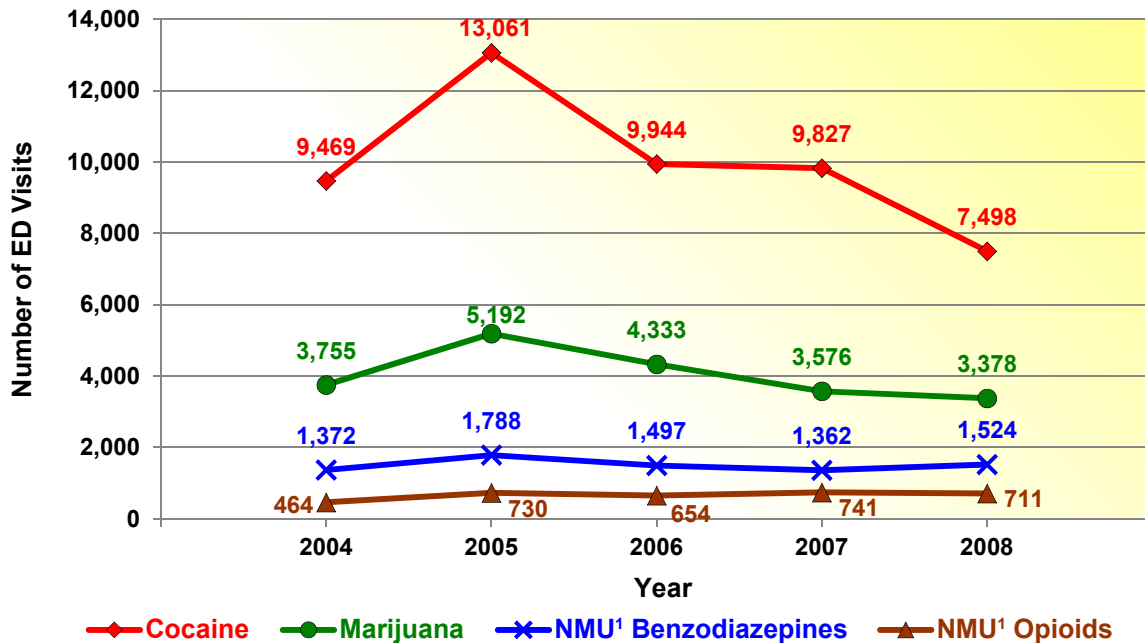
**Exhibit 4. Number of Weighted DAWN ED Visit Estimates, by Drug, Miami/Dade and Ft. Lauderdale Divisions: 2008**



<sup>1</sup>Weighted DAWN visit estimates for heroin were not available for Miami due to inadequate sample numbers.

SOURCE: DAWN, OAS, SAMHSA

**Exhibit 5. Number of Weighted DAWN ED Visit Estimates, by Drug, Miami/Dade County: 2004–2008**

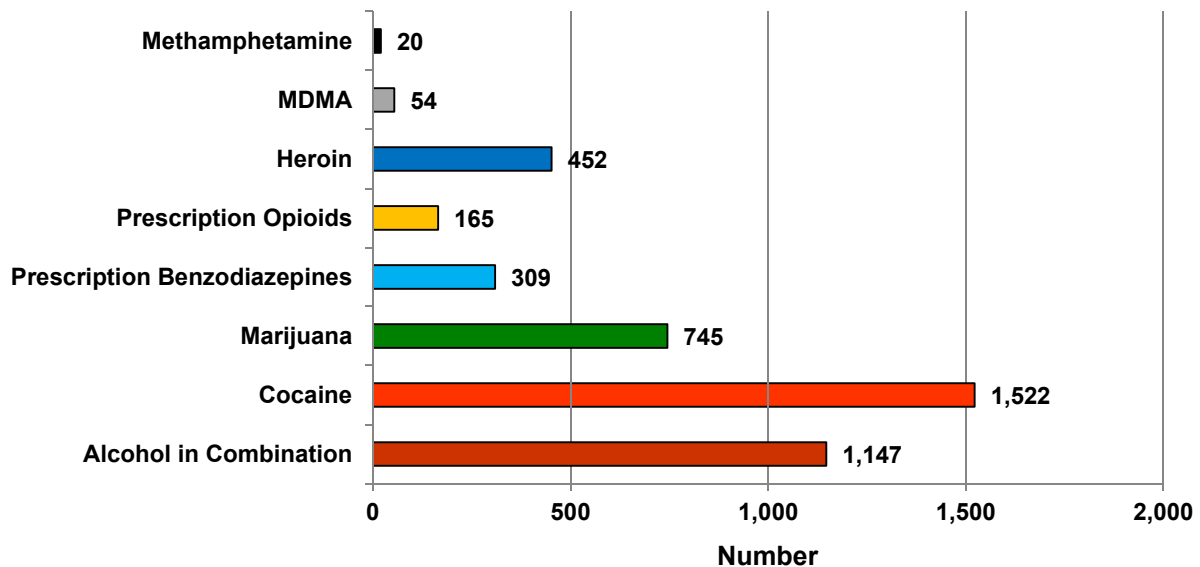


<sup>1</sup>NMU=Nonmedical use.

Note: Opioid visits had a statistically significant increase from 2004 to 2008, although no statistical changes were noted for 2006 and 2007 compared with 2008. No statistically significant changes were noted for 2004, 2006, and 2007 compared with 2008 for the other drugs shown. No significant testing of data for 2005 versus 2008 was available.

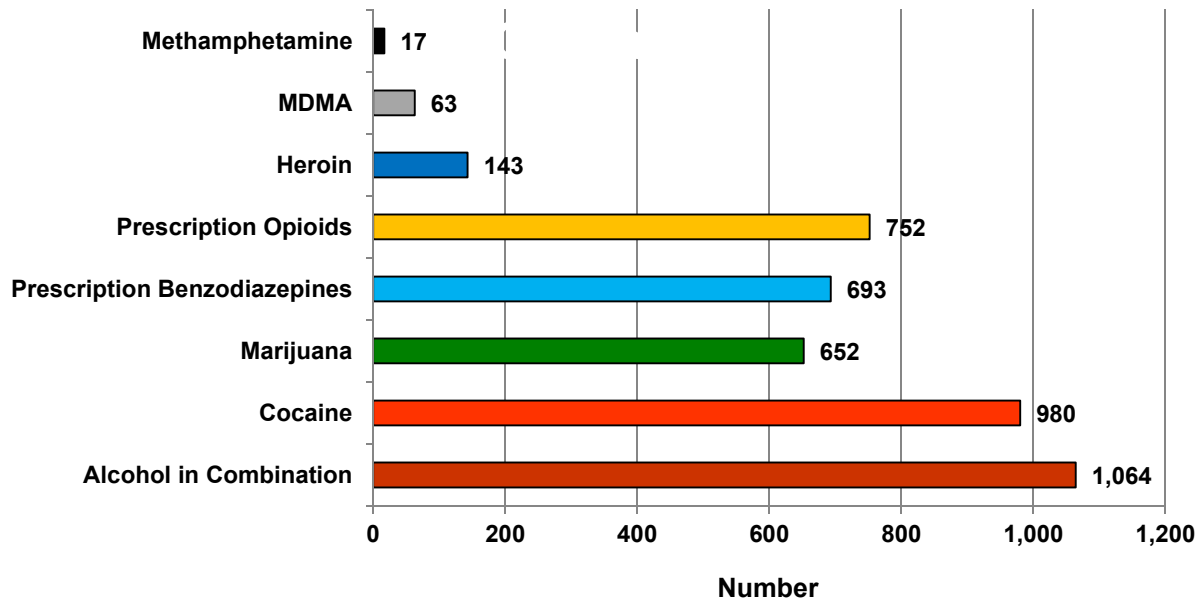
SOURCE: DAWN, OAS, SAMHSA

**Exhibit 6. Number of DAWN ED Unweighted<sup>1</sup> Reports for Selected Drugs in Miami/Dade County, Florida: January–June 2009**



<sup>1</sup>The unweighted data are from eight to nine Miami/Dade EDs reporting to DAWN in 2009. All DAWN cases are reviewed for quality control. Based on this review, cases may be corrected or deleted, and, therefore, are subject to change.

SOURCE: Miami/Dade County Division EDs, DAWN Live!, OAS, SAMHSA, updated December 22, 2009

**Exhibit 7. Number of DAWN ED Unweighted<sup>4</sup> Reports for Selected Drugs in Broward County, Florida: January–June 2009**

<sup>4</sup>The unweighted data are from nine Ft. Lauderdale EDs reporting to DAWN 2009. All DAWN cases are reviewed for quality control. Based on this review, cases may be corrected or deleted, and, therefore, are subject to change.

SOURCE: Miami/Ft. Lauderdale Division EDs DAWN *Live!*, OAS, SAMHSA, updated December 22, 2009

**Exhibit 8. Number of Primary Treatment Admissions, by Substance, in Miami/Dade and Broward Counties: 2009**

Miami/Dade County	Primary Treatment Substance	Broward County
1,289	Alcohol	1,254
867	Crack Cocaine	610
690	Powder Cocaine	159
150	Heroin	105
113	Prescription Opioids	336
2,118	Marijuana	2,030
55	Methamphetamine	20
2	Amphetamine	6
3	MDMA	0
29	PCP	0
1	Benzodiazepine	47
108	All Other Drugs	689
117	Substance Unknown	422
<b>5,542</b>	<b>TOTAL ADMISSIONS</b>	<b>5,258</b>

SOURCE: Florida Department of Children and Families

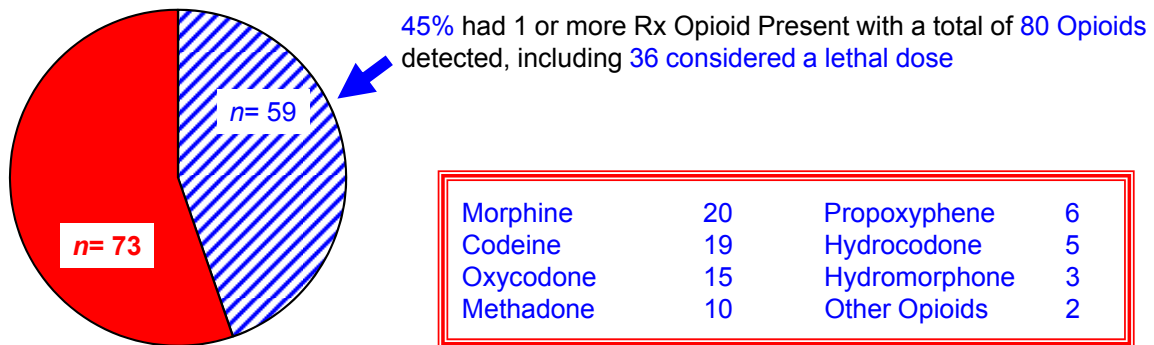
**Exhibit 9. Number and Percent of Top 10 Most Frequently Identified Drugs in South Florida Crime Laboratories: 2009**

Drug	Number	Percent
Cocaine	15,309	61.8
Marijuana/Cannabis	4,699	19.0
Heroin	773	3.1
Alprazolam	568	2.3
Hallucinogen	421	1.7
MDMA	356	1.4
Oxycodone	339	1.4
BZP (1-Benzylpiperazine)	136	0.5
Methamphetamine	110	0.4
Hydrocodone	65	0.3
Other	1,996	8.1
<b>Total</b>	<b>24,772</b>	<b>100</b>

NOTES: Data are for January–December 2009 from the Miami/Ft. Lauderdale/Pompano Beach MSA and include Miami/Dade, Broward, and Palm Beach Counties. Unspecified Controlled Substance represents 1,044 cases and are included in “Other.” Percentage may not sum to the total due to rounding.

SOURCE: NFLIS, DEA, April 24, 2010

**Exhibit 10. Percent of Heroin-Related Deaths With Prescription Opioids Present, in Florida: 2008**

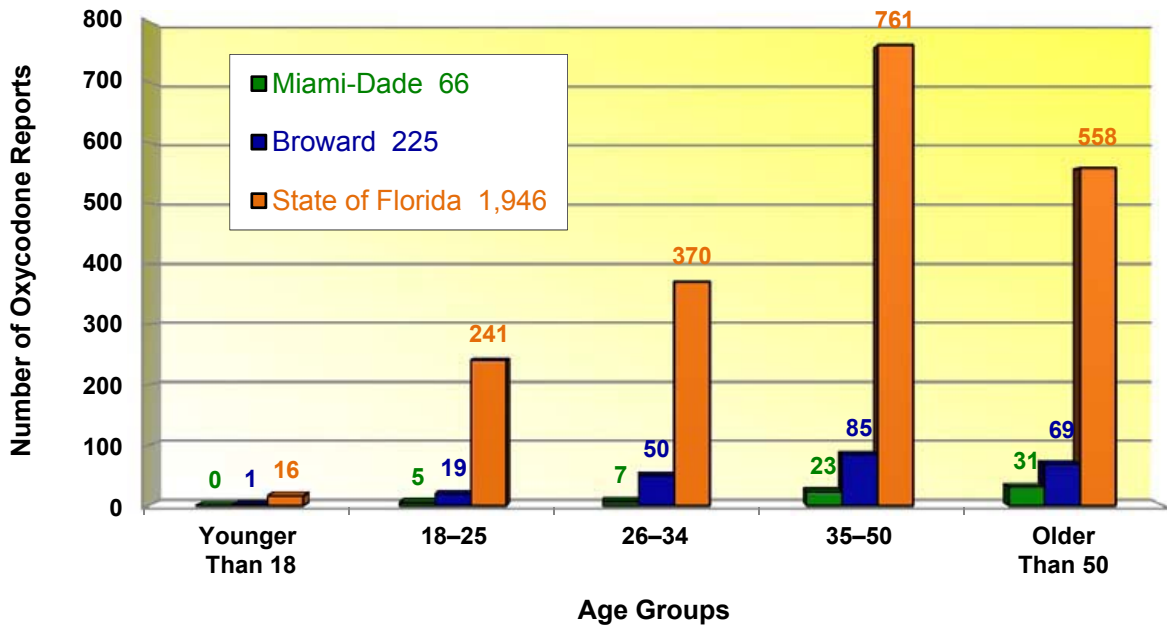


Total N= 132 Heroin Deaths  
(119 Cause of Death)  
(13 Present at Death)

SOURCE: Analysis of Florida Medical Examiners Commission data by the Center for the Study and Prevention of Substance Abuse, Nova Southeastern University

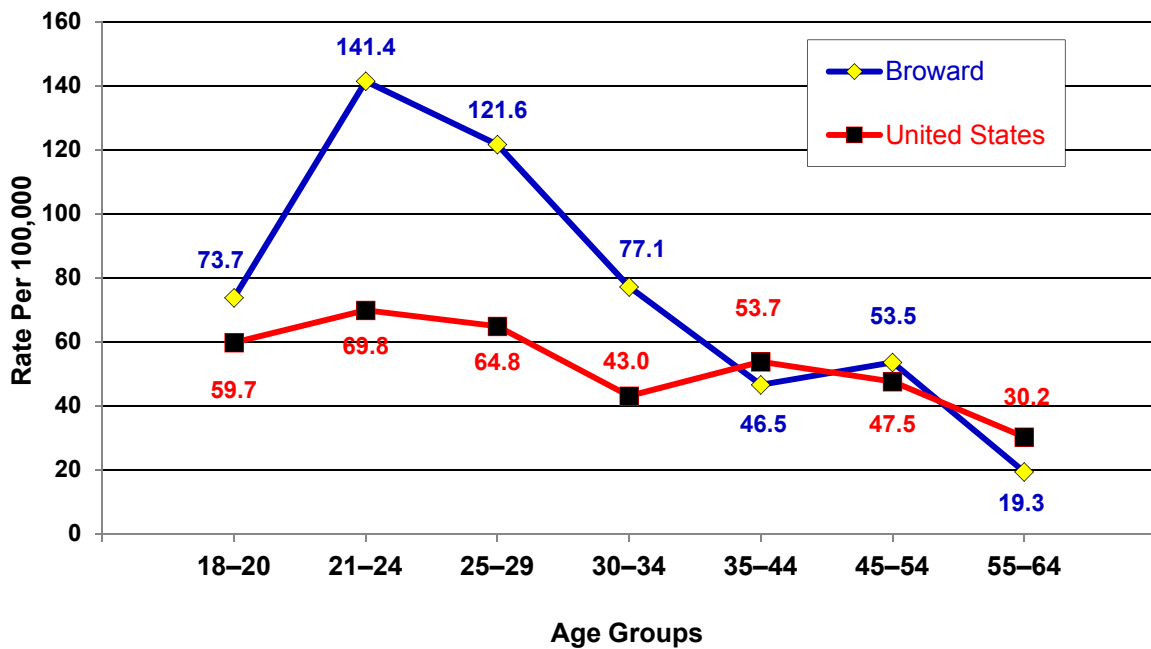


**Exhibit 11. Number of Oxycodone Reports Detected Among Decedents, by Age Groups, in Florida: 2009**



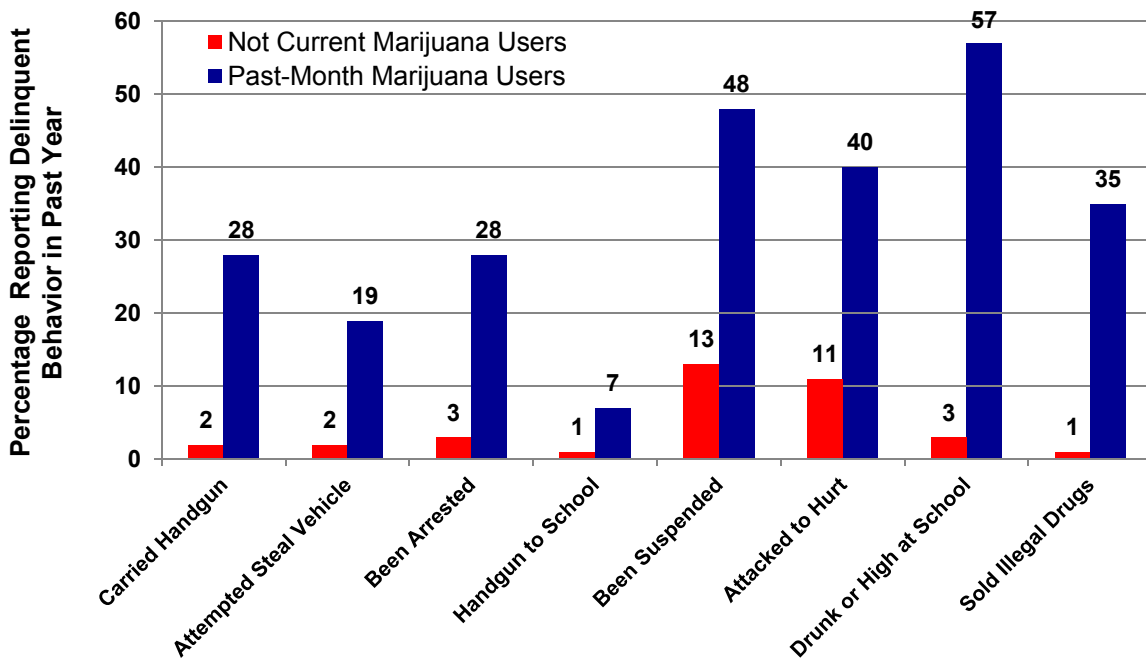
SOURCE: Florida Department of Law Enforcement Florida Medical Examiners Commission Report 2009

**Exhibit 12. DAWN Rates Per 100,000 of Oxycodone Nonmedical Use, ED Reports, by Age Groups, Ft. Lauderdale Division (Broward) Versus United States: 2008**



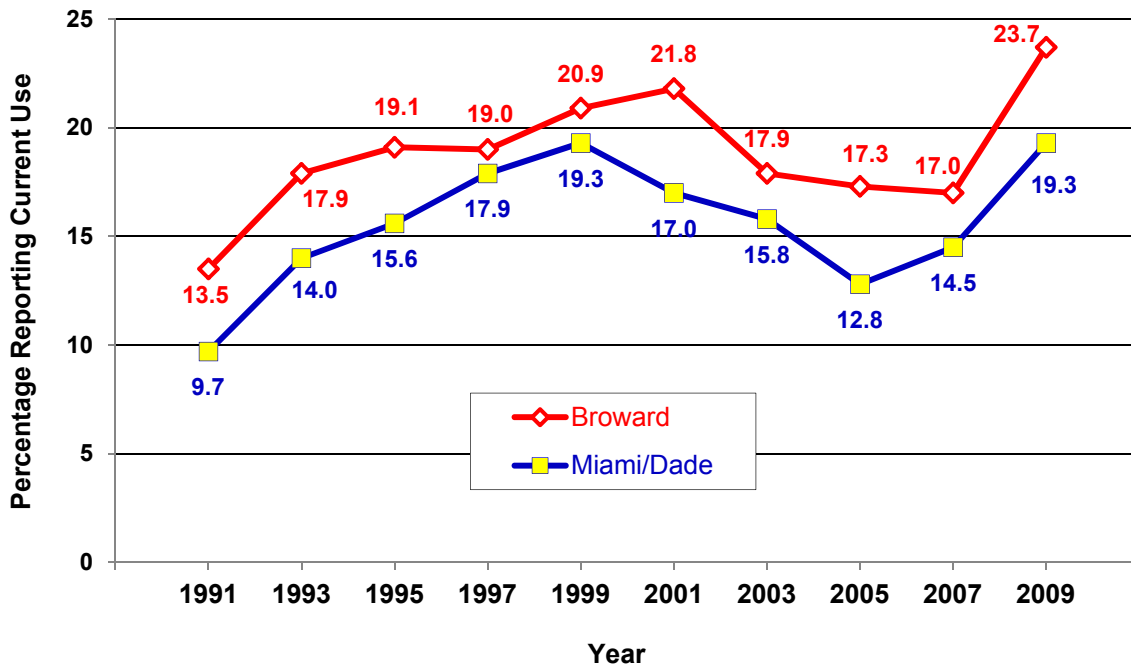
SOURCE: DAWN, OAS, SAMHSA

**Exhibit 13. Percentage of Middle School Students<sup>1</sup> Reporting Delinquent Behaviors by Current (Past-30-Day) and Noncurrent Marijuana Use, Broward County: 2008**



<sup>1</sup>Sample=4,142 Broward Middle School Students.  
SOURCE: 2008 Florida Youth Substance Abuse Survey Broward County

**Exhibit 14. Percentage of High School Students Reporting Any Past-30-Day Marijuana Use, Miami/Dade and Broward Counties: 1991–2009**



Note: The increases from 2007 to 2009 were statistically significant in both Miami/Dade and Broward Counties.  
SOURCE: YRBS, CDC

# Drug Abuse Patterns and Trends, Minneapolis/St. Paul, Minnesota: 2009

Carol Falkowski<sup>†</sup>

## ABSTRACT

*Heroin and other opiate-related indicators continued significant upward trends in the Minneapolis/St. Paul (“Twin Cities”) area in 2009. Treatment admissions for heroin and other opiates combined more than doubled since 2002, and increased by 35.7 percent from 2008 to 2009 alone. Opiates other than heroin, primarily prescription narcotics that were taken orally, accounted for 8.3 percent of total treatment admissions in 2009, compared with only 1.4 percent in 2000. A record high number of 1,722 clients reported other opiates as the primary substance problem in 2009, a fourfold increase since 2002. Arrests and seizures of Mexican heroin increased in the Twin Cities and throughout the State. Cocaine-related treatment admissions declined markedly in 2009 and accounted for only 6.4 percent of total addiction treatment admissions, compared with 9.9 percent in 2008. The actual number of cocaine-related admissions fell 58.4 percent from 2005 to 2009. In Hennepin County, cocaine-related deaths fell sharply, from 59 in 2007, to 21 in 2008, and 10 in 2009. Methamphetamine-related indicators continued to decline in 2009, following significant increases from 2000 through 2005. In 2009, 5.7 percent of admissions to Twin Cities area addiction treatment programs were for methamphetamine, compared with 12 percent in 2005. Marijuana continued to account for more admissions to addiction treatment programs than any other illicit drug, with 3,744*

*admissions in 2009 (18.1 percent of total addiction treatment admissions).*

## INTRODUCTION

This report contains an analysis of patterns and trends in multiple quantitative indicators related to substance abuse and addiction treatment services in the Minneapolis/St. Paul, Minnesota metropolitan area, including comparisons with State and national data. It is produced twice annually for participation in the Community Epidemiology Work Group of the National Institute on Drug Abuse, an epidemiological surveillance network of selected researchers from 22 U.S. metropolitan areas. It is available for download at [http://www.dhs.state.mn.us/main/groups/disabilities/documents/pub/dhs16\\_157631.pdf](http://www.dhs.state.mn.us/main/groups/disabilities/documents/pub/dhs16_157631.pdf).

## Area Description

The Minneapolis/St. Paul metropolitan area includes Minnesota’s largest city, Minneapolis (Hennepin County), the capital city of St. Paul (Ramsey County), and the surrounding counties of Anoka, Dakota, and Washington. Recent estimates of the population of each county are as follows: Anoka, 313,197; Dakota, 375,462; Hennepin, 1,239,837; Ramsey, 515,274; and Washington, 213,395; for a total of 2,557,165, or roughly one-half of the Minnesota State population.

Regarding race/ethnicity in the five-county metropolitan area, 84 percent of the population is White. African-Americans constitute the largest minority group in Hennepin County, while Asians are the largest minority group in Ramsey, Anoka, Dakota, and Washington Counties.

Outside of the Twin Cities metropolitan area, the State is less densely populated and more rural in character. Minnesota shares an international border with Canada, a southern border with Iowa, an eastern border with Wisconsin, and a western border with North Dakota and South Dakota, two of the country’s most sparsely populated States. Illicit drugs are sold and distributed within Minnesota by Mexican drug trafficking organizations, street gangs, independent entrepreneurs, and other criminal organizations. Drugs are typically shipped

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or transported into the Twin Cities area for further distribution throughout the State. Interstate Highway 35 runs north-south throughout Minnesota, and south to the United States–Mexican border.

Relative to addiction treatment capacity in the Twin Cities Metropolitan Statistical Area (MSA), in 2008, 137 facilities offered substance abuse treatment services: 111 facilities offered outpatient care; 52 facilities offered nonhospital residential care; and 6 facilities offered hospital inpatient care. Some facilities offered more than one type of care. Of the 111 outpatient substance abuse treatment facilities, 78 percent provided intensive outpatient services and 32 percent offered day treatment/partial hospitalization. Regular outpatient treatment services were offered by 76 percent of outpatient facilities. Of the 52 residential facilities, 75 percent offered long-term residential treatment (more than 30 days) and 60 percent offered short-term residential treatment (30 days or less).

Opioid treatment programs (OTPs) provide medication-assisted therapy for the treatment of addiction to opiates, such as heroin and prescription narcotics. In 2008, 9 of the 137 treatment facilities (7 percent) in the Twin Cities MSA operated OTPs. On a typical day, 2,534 clients at these OTPs received medication-assisted opioid therapy with methadone or buprenorphine.

Almost one-half (40 percent) of clients in the Twin Cities MSA were self-referred into addiction treatment programs in 2008. Additional sources of referral for these clients were criminal justice (24 percent), community organizations (18 percent), substance abuse providers (9 percent), and health care providers (7 percent) (exhibit 1). In 2008, there were 389 clients age 18 and older in addiction treatment per 100,000 population in Minnesota (exhibit 2). This compares with a high of 938 per 100,000 (Maine), and a low of 185 per 100,000 (Arkansas).

## Data Sources

Information and data used in this report were obtained from the following sources:

- **Addiction treatment data** on client characteristics are from addiction treatment programs

located in the five-county metropolitan area, as reported on the Drug and Alcohol Abuse Normative Evaluation System (DAANES) of the Performance Measurement and Quality Improvement Division, Minnesota Department of Human Services (through December 2009). Additional comparative 2008 treatment data are from the Treatment Episode Data Set (TEDS). TEDS is a compilation of data on the characteristics of clients admitted for substance abuse treatment that is routinely collected by State administrative systems (DAANES), and submitted to the Office of Applied Studies (OAS) of the Substance Abuse and Mental Health Services Administration (SAMHSA) in a standard format to enable cross-jurisdictional comparisons. The main substance abused by a client is known as the “primary substance of abuse.” TEDS data encompass data from addiction treatment programs located in the Twin Cities MSA, a geographic entity defined by the U.S. Office of Management and Budget. The Minneapolis/St. Paul/Bloomington, Minnesota/Wisconsin MSA, also known as the Twin Cities MSA, includes the following counties: Wright, Washington, Sherburne, Scott, Ramsey, Isanti, Hennepin, Dakota, Chisago, Carver, and Anoka in Minnesota; and St. Croix and Pierce Counties in Wisconsin.

- **Addiction treatment facility data** are from the 2008 National Survey of Substance Abuse Treatment Services (N-SSATS). This survey is conducted by the OAS, SAMHSA, and includes information on the number of clients in treatment at each facility on the survey reference date of March 31, 2008. These data are from addiction treatment programs in the entire Twin Cities MSA.

- **Mortality data** on drug-related deaths are provided by the Hennepin County Medical Examiner (through December 2009). Hennepin County cases include those in which drug toxicity was the immediate cause of death, and those in which the recent use of a drug was listed as a significant condition contributing to the death.

- **Crime laboratory data** are from the National Forensic Laboratory Information System (NFLIS).

This system, which began in 1997, is sponsored by the U.S. Drug Enforcement Administration (DEA), and collects solid dosage drug analyses conducted by State and local forensic laboratories across the country on drugs seized by law enforcement (January through December 2009). Data presented here are from the seven-county metropolitan area (Anoka, Dakota, Hennepin, Ramsey, Washington, Scott, and Carver Counties).

- **Heroin seizure and arrest data** are from the various multijurisdictional narcotics task forces that operate throughout the State, compiled by the Office of Justice Programs, Minnesota Department of Public Safety.
- **Data on selected prescription drug manufacture and distribution** by State are from the Automation of Reports and Consolidated Orders System (ARCOS) of the Office of Diversion Control of the U.S. Drug Enforcement Administration (DEA) for 2008.
- **Human immunodeficiency virus (HIV) infection data** for 2009 are from the Acquired Immune Deficiency Syndrome (AIDS)/HIV Surveillance System of the Minnesota Department of Health.
- **Additional information** came from interviews with treatment program staff, narcotics agents, and school-based drug and alcohol specialists, conducted in May 2010.

## DRUG ABUSE PATTERNS AND TRENDS

### Cocaine/Crack

The marked decline in clients receiving addiction treatment services for cocaine addiction continued in 2009. In 2009, cocaine was the primary substance problem for 6.4 percent of total treatment admissions (exhibit 3). This compares with 11.6 percent in 2007 and 14.4 percent in 2005. The actual number of admissions to addiction treatment programs for cocaine declined by 58.4 percent from 2005 to 2009 (exhibit 4). Since 2008, treatment admissions

for heroin and other opiates combined outnumbered the number of admissions for cocaine.

As in past years, most cocaine treatment admissions in 2009 (78.2 percent) were for crack cocaine (exhibit 5). Almost one-half (48.1 percent) were African-American; 37.8 percent were female; and 72.4 percent were age 35 and older.

In Hennepin County, accidental cocaine-related deaths fell, from 59 in 2007 to 21 in 2008 to 10 in 2009 (exhibit 6). Of these decedents in 2009, six were African-American, three were White, and one was Hispanic. Three were female, and the average age was 46.5. The Hennepin County Medical Center recently confirmed three levamisole-related cocaine cases, two of which resulted in death. Decedents were a 57-year-old female and a 58-year-old male. Levamisole is a veterinary deworming medication that is increasingly found as a diluting agent, or adulterant, in cocaine. It has produced darkened, “dead-looking” skin in some instances and is associated with agranulocytosis, which is a shortage of white blood cells.

Cocaine accounted for 22.2 percent of the drug samples reported to NFLIS and analyzed in 2009 (exhibit 7), compared with 28.2 percent in 2008. Gangs in both Minneapolis and St. Paul remained involved in the street-level, retail distribution of crack/cocaine.

### Heroin/Opiates/Opioids

The abuse of and addiction to heroin and other opiates continued to increase in the Twin Cities and throughout Minnesota, with Mexico the primary source of heroin. Increased addiction to prescription narcotics may also increase the likelihood of more prevalent future heroin problems, if those addicted to prescription narcotics can find heroin as a more affordable and available alternative.

Treatment admissions reporting heroin and other opiates as the primary substance problem continued to climb in the Twin Cities, a trend that began in 2000. The number of treatment admissions for heroin and other opiates combined rose 35.8 percent from 2008 to 2009 alone (exhibit 8).

Heroin accounted for 8 percent of total addiction treatment admissions in 2009, compared with

6.7 percent in 2008 and 3.3 percent in 2000. Of the clients admitted to Twin Cities area addiction treatment programs with heroin as the primary substance problem in 2009, very few (0.9 percent) were younger than 18, and injecting was the most common route of administration (62.7 percent). Females accounted for 33.6 percent of clients, Whites for 62.8 percent, and almost one-half (48.5 percent) were 35 and older (exhibit 5).

Opiates other than heroin (“other opiates”) include prescription narcotic analgesics (painkillers). Other opiates were reported as the primary substance problem by a record high number of 1,722 clients in the Twin Cities in 2009. These accounted for 8.3 percent of total treatment admissions in 2009, compared with 6.2 percent in 2008 and 1.4 percent in 2000. The majority of clients were White (80.5 percent); almost one-half were females (45.9 percent); and 41.2 percent were 35 and older (exhibit 5). The most common route of administration was oral (71.7 percent).

Opiate-related deaths in Hennepin County fell slightly to 77 in 2009, compared with 84 in 2008 and 67 in 2007. Of these cases, 21 involved methadone, 8 oxycodone, and 5 fentanyl. Six cases involved the simultaneous use of benzodiazepines, and four involved the simultaneous use of cocaine. Heroin accounted for 4.0 percent of the drug samples analyzed by NFLIS in 2009, compared with 2 percent in 2008. Oxycodone accounted for 2.6 percent (exhibit 7).

All levels of law enforcement reported an increase in the seizures of both heroin and prescription drugs. During 2008, the Minnesota Drug Task Forces made 50 arrests for heroin. In 2009 and the first quarter of 2010, 125 arrests were made statewide, an increase of 150 percent. In 2008, the Minnesota Drug Task Forces seized 371 grams of heroin. In 2009 and the first quarter of 2010, 800 grams were seized, an increase of 116 percent.

Manufacturers and distributors of bulk and/or dosage units of controlled substances must report inventories, acquisitions, and dispositions of all substances in Schedules I and II, and narcotic and GHB (gamma hydroxybutyrate) substances in Schedule III (see [21 CFR §1308](#) Schedule of

Controlled Substances). Nationwide about 1,100 distributors and manufacturers report to ARCOS. These 1,100 are just a small part of the over 1,000,000 registrants in the DEA’s Controlled Substances Act data base. Exhibits 9–12 present the cumulative distribution by State in grams of various prescription narcotics in 2008, including hydrocodone, oxycodone, codeine, and methadone (excluding narcotic treatment programs).

A small portion of Minnesota’s Hmong immigrant population smokes opium. Packages concealing opium continued to be shipped from Asia to the Twin Cities and intercepted by U.S. Customs.

### **Methamphetamine/Other Stimulants**

In the wake of rising consequences related to increased methamphetamine manufacture, abuse, and addiction from 2000 through 2005, notable downward trends continued into 2009.

Methamphetamine-related admissions to addiction treatment programs accounted for 5.7 percent of total treatment admissions in the Twin Cities in 2009 (exhibit 3), compared with 6 percent in 2008, and 12.0 percent in 2005. The actual number of clients in 2009, however, rose slightly (exhibit 13). Of the 1,169 methamphetamine-related treatment admissions in 2009, 85.1 percent were White, and 36.6 percent were females (exhibit 5). Asians and Hispanics accounted for 3.9 percent each. Smoking was the most common route of administration (70.6 percent). In 2009, only 1.5 percent of the methamphetamine clients were younger than 18, compared with a high of 11.5 percent in the first half of 2005.

In 2009 in Hennepin County there were 7 methamphetamine-related deaths in 2009, compared with 10 in 2008. Seizures of methamphetamine by law enforcement accounted for 24.4 percent of the drug samples reported to NFLIS and analyzed in 2009, compared with 26.5 percent in 2008 and 51.0 percent in 2005 (exhibit 7).

Khat, a plant indigenous to East Africa and the Arabian Peninsula and used for its stimulant effects in East Africa and the Middle East, maintained a hidden presence within the Somali immigrant

community in the Twin Cities. Its active ingredients, cathinone and cathine, are controlled substances in the United States. Cathinone (exhibit 7), a Schedule I drug, is present only in the fresh leaves of the flowering plant and converts to the considerably less potent cathine in approximately 48 hours. Users chew the leaves, smoke it, or brew it in tea.

Methylphenidate (Ritalin®), a prescription drug used in the treatment of attention deficit hyperactive disorder, is also abused nonmedically to increase alertness and suppress appetite by some adolescents and young adults. Crushed and snorted or ingested orally, each pill sold for \$5, or was simply shared with fellow middle school, high school, or college students at no cost. It is sometimes known as a “hyper pill” or “the study drug.”

## Marijuana

Marijuana treatment admissions still accounted for more addiction treatment admissions than any other illicit drug in the Twin Cities, with 3,744 admissions in 2009 (18.1 percent of total treatment admissions) (exhibit 3). Of these, 29.1 percent were younger than 18; 38.2 percent were age 18–25; and only 14.0 percent were 35 and older. Only 20.8 percent were female (the lowest percentage of females in any drug category); 54.1 percent were White, 30.5 percent were African-American, 5.8 percent were Hispanic, and 3.3 percent were American Indian/Other (exhibit 5).

Marijuana/cannabis accounted for 27.8 percent of drug samples reported to NFLIS in 2009 (exhibit 7), virtually unchanged from 2008. Marijuana sold for \$5 per joint. Marijuana joints dipped in formaldehyde, which is often mixed with PCP (phencyclidine), are known as “wet sticks,” “water,” or “wet daddies.” Joints containing crack are known as “primos.”

## Club Drugs/Hallucinogens

The drug MDMA (3,4-methylenedioxymethamphetamine), also known as ecstasy, “X,” or “e,” sold for \$20 per pill. MDMA accounted for 4.7 percent of drug samples in 2009 according to NFLIS (exhibit 7), compared with 4.1 percent in 2008.

“K2” is the name of an unregulated, legal, herbal mixture sold in “head shops” as a smokable, mood-altering substance with effects similar to marijuana. In May 2010, several high school students in a northern suburb of the Twin Cities reported adverse effects due to inhalation of K2. One student experienced seizures from the incident according to a local news report.

Salvia divinorum (a plant) and salvinorin A produce short-acting hallucinogenic effects when chewed, smoked, or brewed in tea. These are most often used by adolescents and young adults. Effective August 1, 2010, the sale or possession of these in Minnesota will be a gross misdemeanor.

LSD (lysergic acid diethylamide) or “acid,” a strong, synthetically-produced hallucinogen, typically sold as saturated, tiny pieces of paper known as “blotter acid,” for \$5 to \$10 per dosage unit.

GHB, a concentrated liquid abused for its stupor-like depressant effects, is also used as a predatory, knockout, drug-facilitated rape drug. Ketamine, also known as “Special K,” is a veterinary anesthetic that first appeared as a drug of abuse among young people in Minnesota in 1997. Reports of GHB and ketamine remained very rare in recent years, however.

DXM (dextromethorphan) is the active cough suppressant ingredient in Coricidin HBP Cough and Cold® (known as “Triple Cs”) and Robitusin®. Over-the-counter cough and cold products that contain dextromethorphan continued to be abused sporadically, mostly by adolescents, for their hallucinogenic effects by ingesting doses many times in excess of the recommended amount. Excessive dosages produce long-acting hallucinations, altered time perception, slurred speech, profuse sweating, uncoordinated movements, and high blood pressure.

## Alcohol

Alcohol remained the most widely abused substance in the Twin Cities. Roughly one-half of the total admissions to addiction treatment programs (51.8 percent) reported alcohol as the primary substance problem in 2009. Over one-half (58.2 percent) were 35 and older, 2.4 percent were

younger than 18, and 75.6 percent were White (exhibit 5).

## INFECTIOUS DISEASES RELATED TO DRUG ABUSE

As of December 31, 2009, a cumulative total of 9,163 persons had been diagnosed and reported with HIV infection in Minnesota. Of these, 3,508 had been diagnosed with HIV infection (non-AIDS), 5,655 progressed to AIDS, and 3,056 were known to be deceased. Due to mobility in and out of the State—people who were diagnosed elsewhere and moved to Minnesota, or were diagnosed in Minnesota but subsequently moved away from Minnesota—there were an estimated 6,552 people currently living in Minnesota with HIV/AIDS as of December 31, 2009. Most HIV infections diagnosed in Minnesota in 2009 were in the Minneapolis/St. Paul area (exhibit 14).

There were differences among gender and race/ethnicity groups for Minnesota cases of HIV infection. For example, in 2009, male-to-male sex (MSM) or MSM/injection drug use accounted for an estimated 94 percent of White male cases, but only 64 percent of non-White male cases. The

male cases that identified injection drug use as a risk factor were 17 percent African-Americans, 12 percent Hispanics, and 13 percent American Indians. The comparable percentages among Asian, White, and African-born males were 4, 3, and 1 percent respectively.

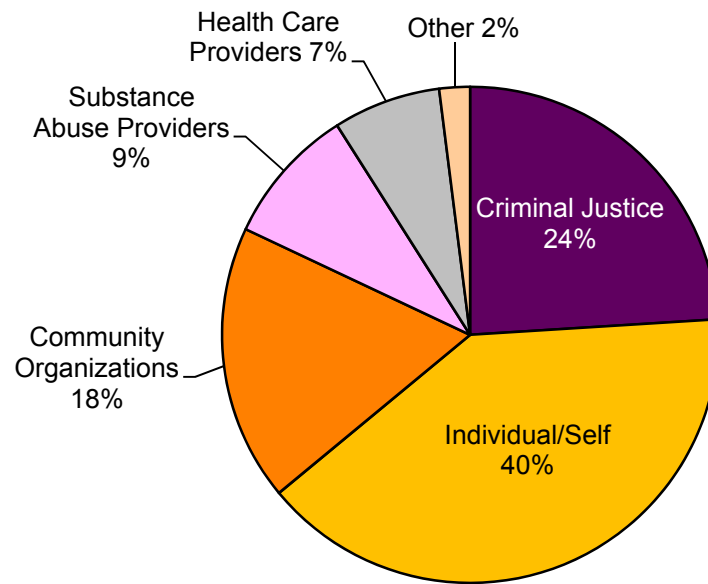
Across all race/ethnicity groups, females most often reported heterosexual contact as the mode of HIV exposure. Injection drug use was reported as a primary mode of exposure in 22 percent of American Indian females, 18 percent of African-American females, 17 percent of White females, 13 percent of Hispanic females, and only 3 percent of Asian females.

The level of hepatitis C virus, a blood-borne liver disease, remained elevated among injection drug abusers.

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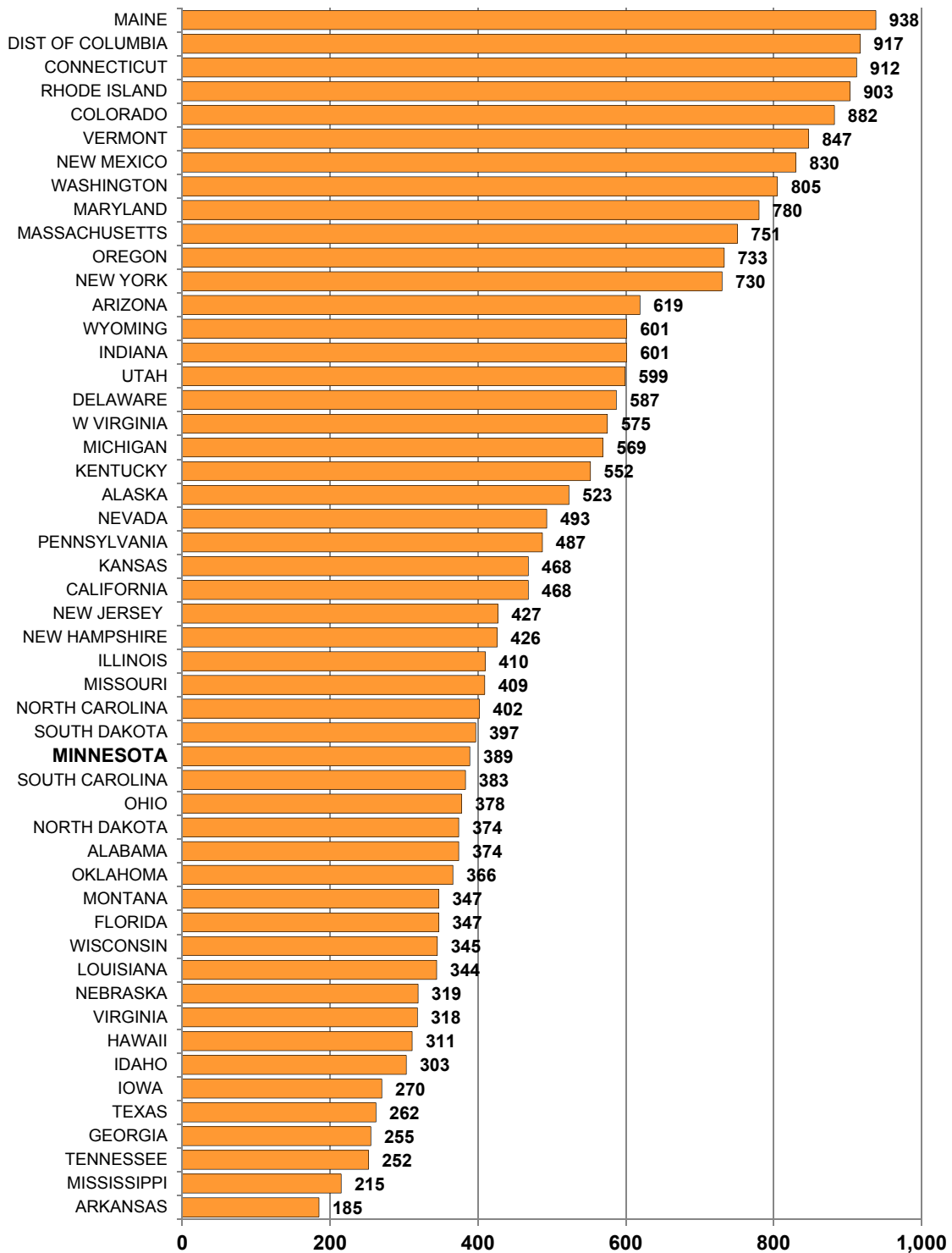


**Exhibit 1. Sources of Referral to Addiction Treatment Services, Minneapolis: 2008**



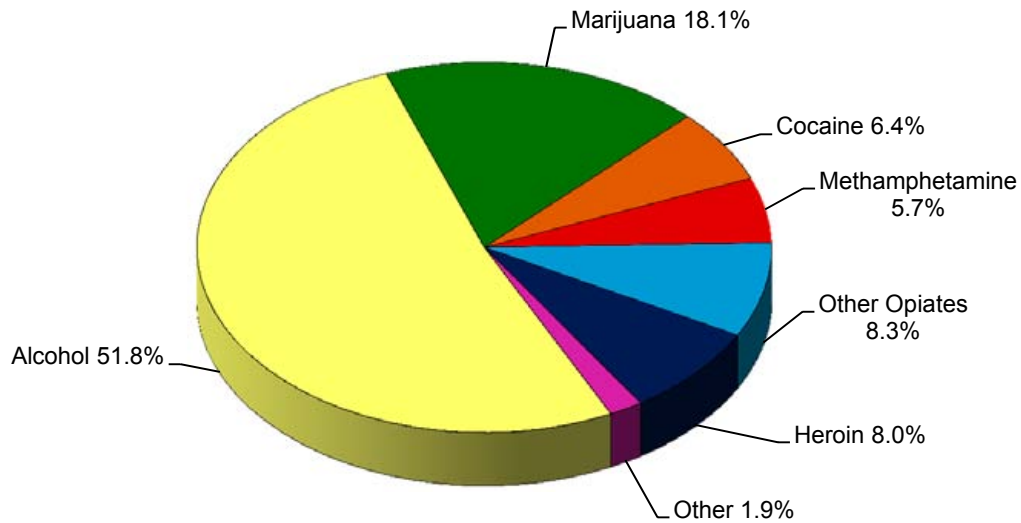
SOURCE: TEDS, OAS, SAMHSA, Metropolitan Brief, Minneapolis, 2010

**Exhibit 2. Clients in Addiction Treatment Programs, Age 18 and Older, per 100,000 Population, by State: 2008**



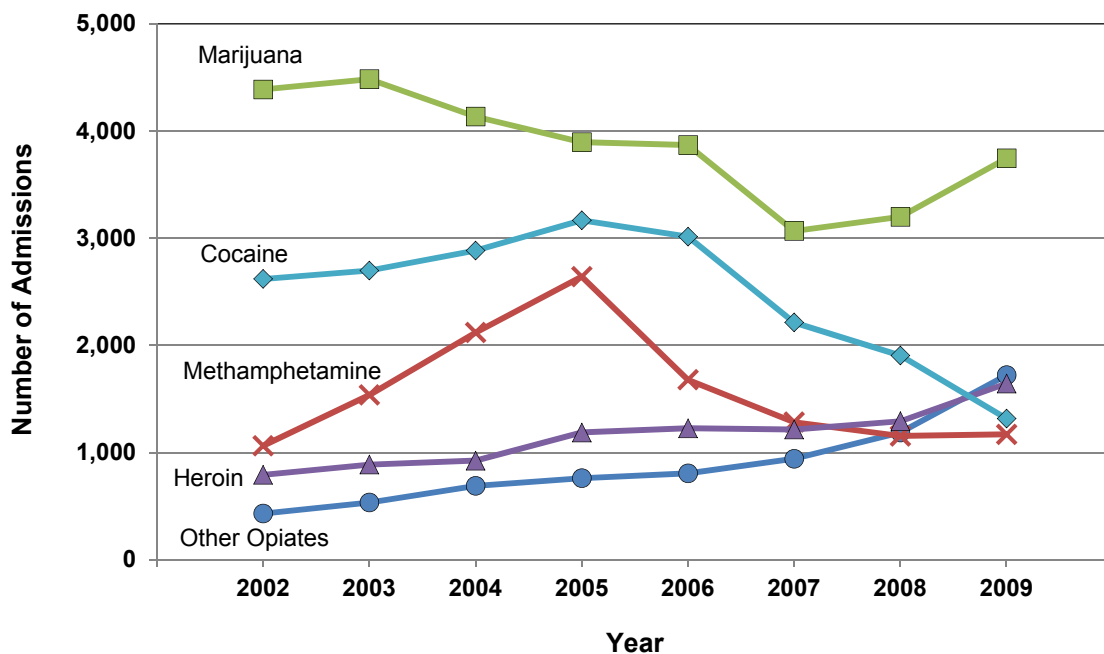
SOURCE: 2008 N-SSATS, OAS, SAMHSA, 2010

**Exhibit 3. Percent of Admissions to Addiction Treatment Programs, by Primary Substance Problem, Twin Cities: 2009**



SOURCE: Minnesota Department of Human Services, Drug and Alcohol Abuse Normative Evaluation System (DAANES), May 2010

**Exhibit 4. Number of Nonalcohol Admissions to Twin Cities Addiction Treatment Programs by Primary Substance Problem: 2002–2009**



SOURCE: Minnesota Department of Human Services, Drug and Alcohol Abuse Normative Evaluation System (DAANES), May 2010

**Exhibit 5. Characteristics of Clients Admitted to Addiction Treatment Programs, by Primary Substance Problem and Percentage<sup>1</sup>, Twin Cities Area: 2009**

Total Admissions (N=20,645)	Alcohol n=10,684 51.8 %	Marijuana n=3,744 18.1 %	Cocaine/ Crack n=1,317 6.4 %	Metham- phetamine <sup>2</sup> n=1,169 5.7 %	Heroin n=1,644 8.0 %
<b>GENDER</b>					
Male	68.9	79.2	62.2	63.4	66.4
Female	31.1	20.8	37.8	36.6	33.6
<b>RACE/ETHNICITY</b>					
White	75.6	54.1	40.6	85.1	62.8
African-American	12.7	30.5	48.1	1.5	27.9
Hispanic	4.5	5.8	3.6	3.9	2.6
American Indian	3.7	3.3	3.8	2.0	4.7
Asian	1.2	1.6	0.5	3.9	0.3
Other	2.3	4.7	3.4	3.5	1.6
<b>AGE</b>					
17 and Younger	2.4	29.1	0.9	1.5	0.9
18–25	17.8	38.2	8.5	26.1	25.5
26–34	21.6	18.8	18.1	34.7	25.1
35 and Older	58.2	14.0	72.4	37.6	48.5
<b>ROUTE OF ADMINISTRATION</b>					
Smoking	-	-	78.2	70.6	4.7
Sniffing	-	-	19.0	6.8	30.7
Injecting	-	-	1.4	14.7	62.7
Oral	-	-	0.0	6.1	0.0
Other/Unknown			1.4	1.9	1.9

<sup>1</sup>Percentages do not add to 100 due to “other” category (2 percent), which is not displayed.

<sup>2</sup>Methamphetamine category includes amphetamines.

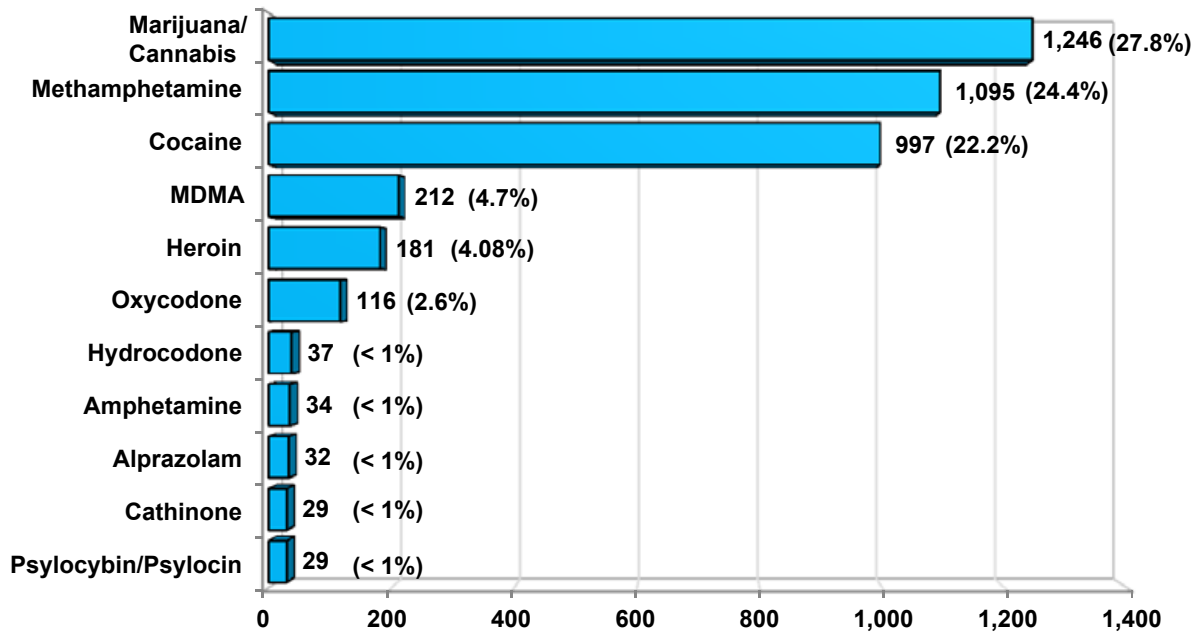
SOURCE: Minnesota Department of Human Services, Drug and Alcohol Abuse Normative Evaluation System (DAANES), May 2010

**Exhibit 6. Drug-Related Deaths, in Hennepin County (Minneapolis): 2000–2009**

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Cocaine	43	37	34	44	39	50	48	59	21	10
Opiates	41	58	59	50	47	60	69	67	84	77
Methamphet- amine	6 (includes 3 MDMA)	8 (includes 1 MDMA)	11 (includes 3 MDMA)	15 (includes 1 MDMA)	19 (includes 8 MDMA)	10 (includes 3 MDMA)	8 (includes 1 MDMA)	6 (includes 2 MDMA)	9 (includes 1 MDMA)	6 (includes 1 MDMA)

SOURCE: Hennepin County Medical Examiner, 2010

**Exhibit 7. Most Frequently Identified Drugs<sup>1</sup> of Total Analyzed Drug Items in the Twin Cities<sup>2</sup>: 2009**

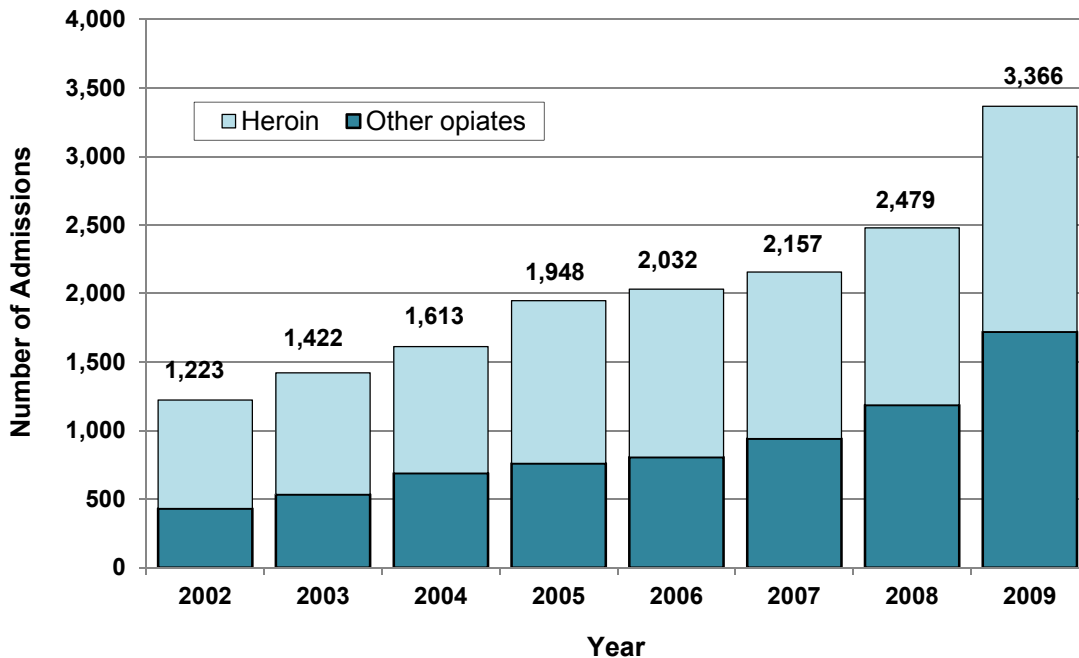


<sup>1</sup>Twin Cities metropolitan area includes the counties of Hennepin, Ramsey, Dakota, Washington, Anoka, Scott, and Carver.

<sup>2</sup>Excludes 475 "other" items.

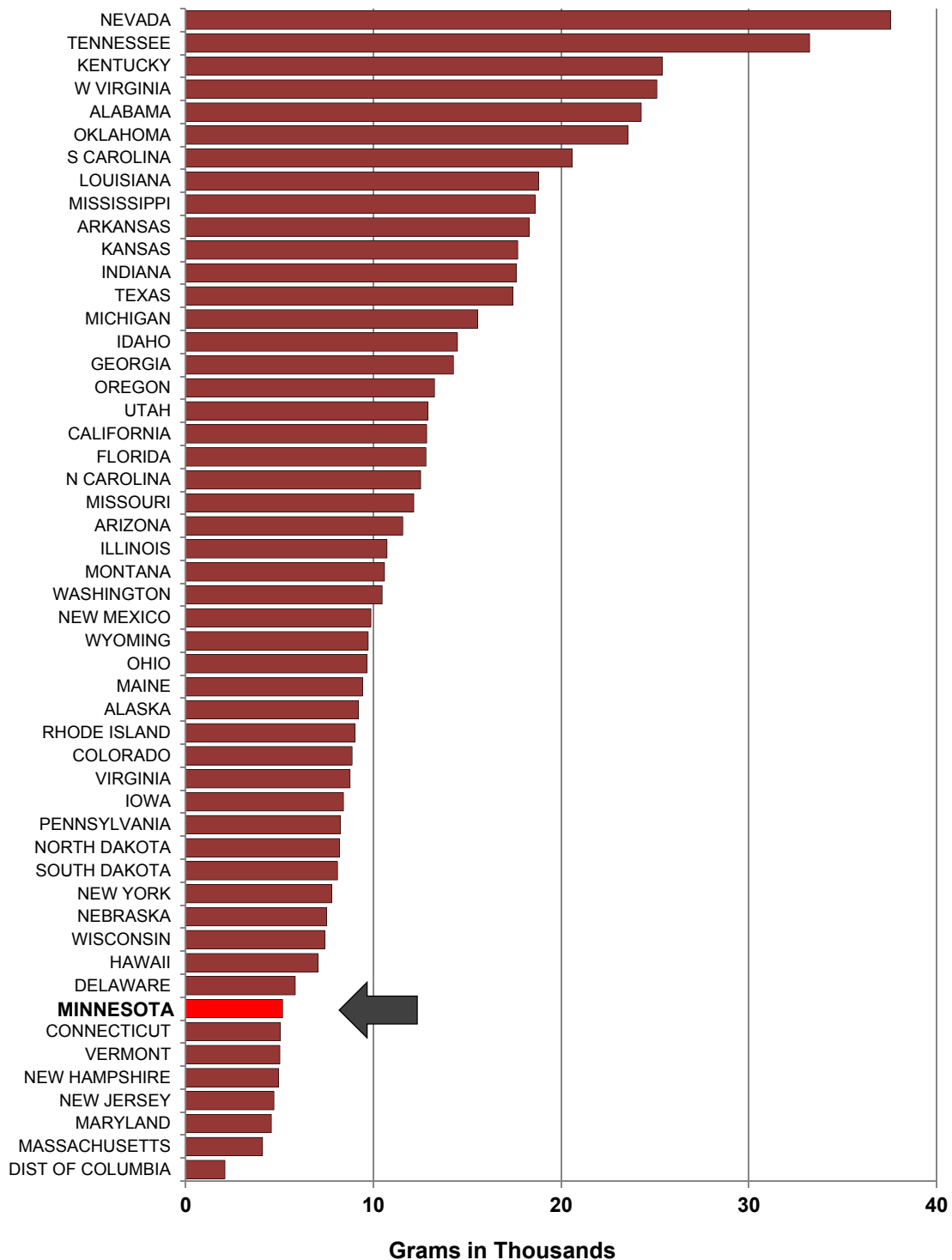
SOURCE: NFLIS, DEA, 2010

**Exhibit 8. Number of Admissions to Addiction Treatment Programs With Heroin and Opiates as the Primary Substance Problem, Twin Cities Area: 2002–2009**



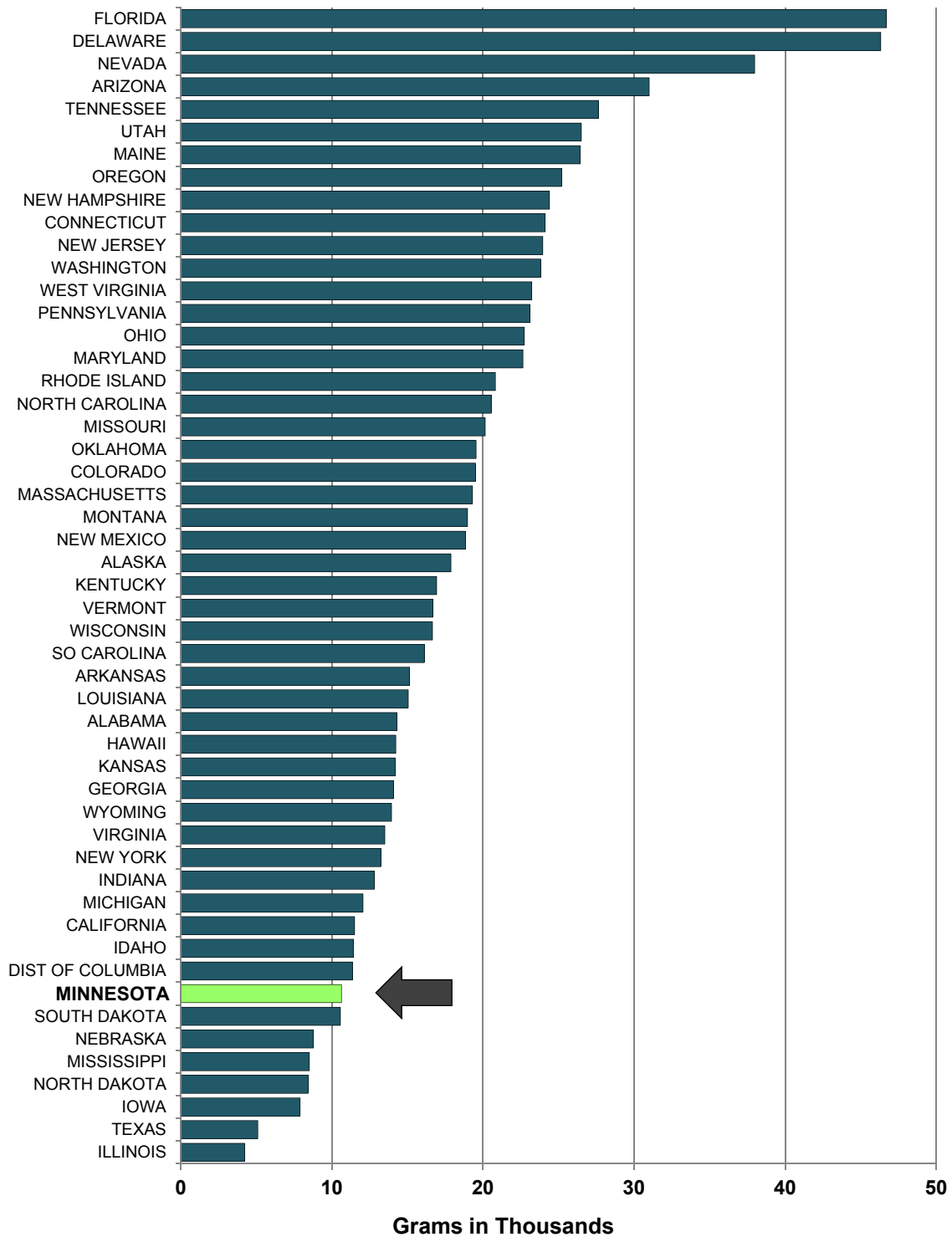
SOURCE: Minnesota Department of Human Services, Drug and Alcohol Abuse Normative Evaluation System (DAANES), May 2010

**Exhibit 9. Cumulative Distribution of Hydrocodone in Grams Per 100,000 Population, by State: 2008**



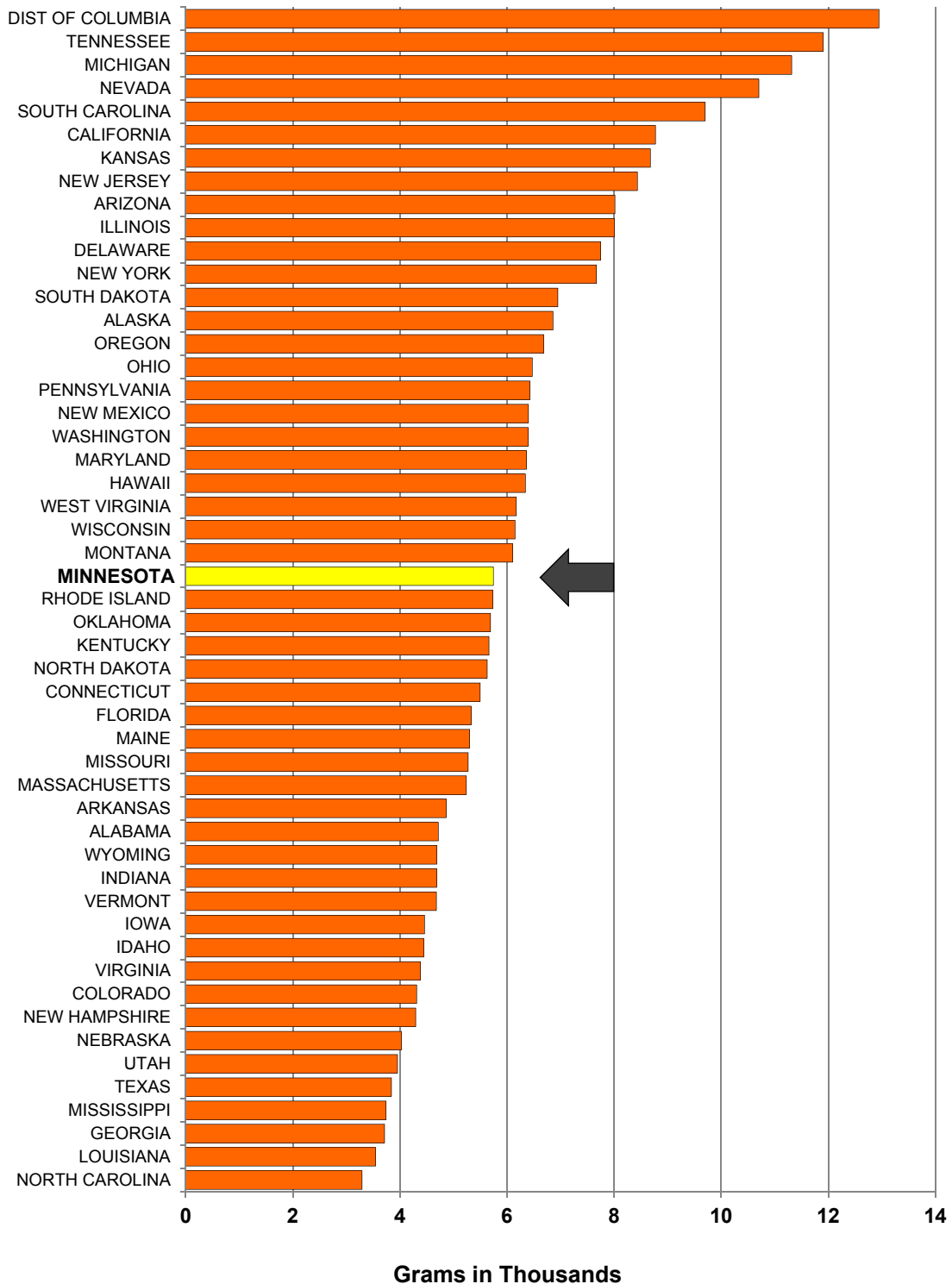
SOURCE: USDOJ, DEA, Office of Diversion Control, ARCOS, run 7/9/2009 (reporting period: 1/1/2008–12/31/2008)

**Exhibit 10. Cumulative Distribution of Oxycodone in Grams Per 100,000 Population, by State: 2008**



SOURCE: USDOJ, DEA, Office of Diversion Control, ARCOS, run 7/9/2009 (reporting period: 1/1/2008–12/31/2008)

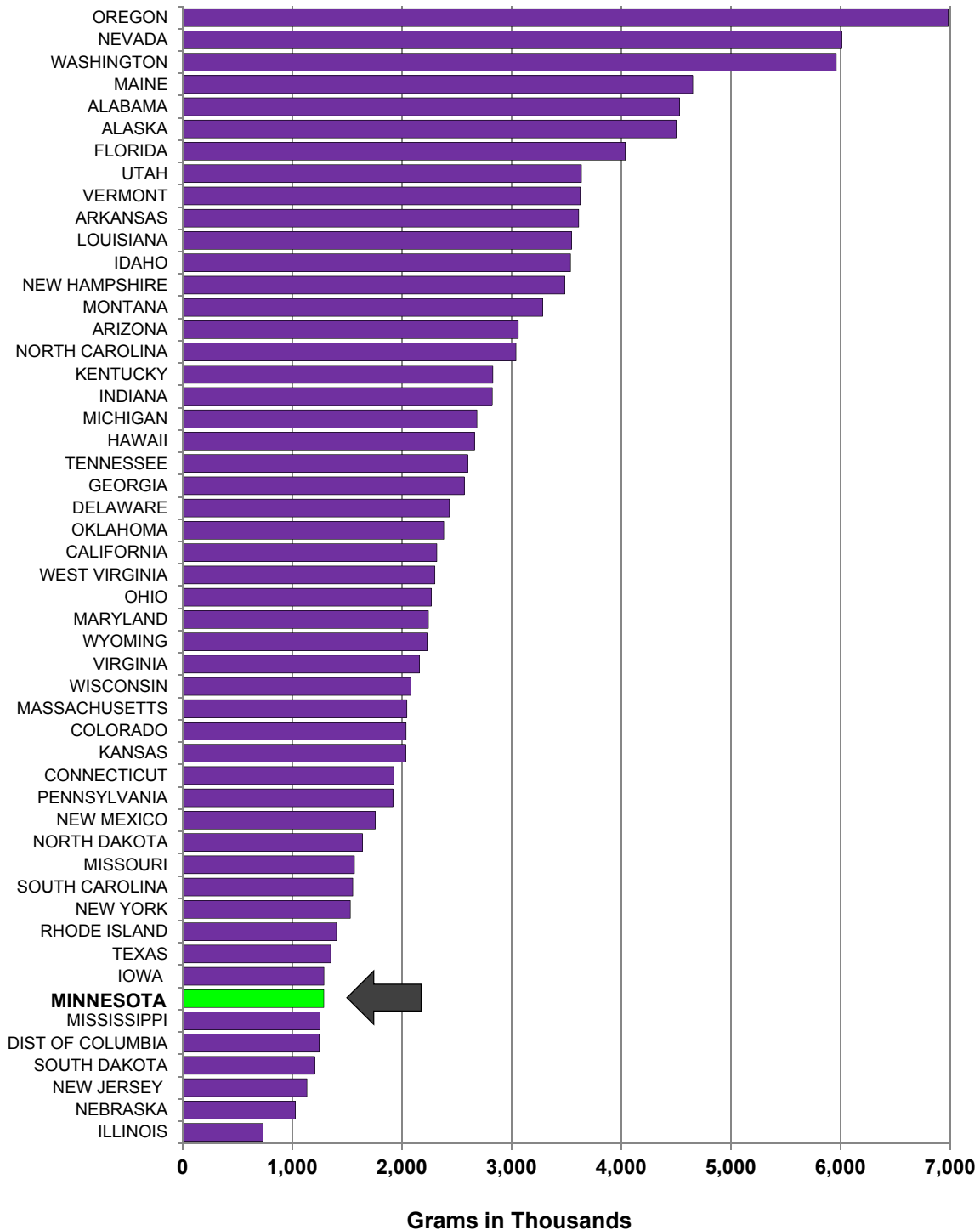
**Exhibit 11. Cumulative Distribution of Codeine in Grams Per 100,000 Population, by State: 2008**



SOURCE: USDOJ, DEA, Office of Diversion Control, ARCOS, run 7/9/2009 (reporting period: 1/1/2008–12/31/2008)

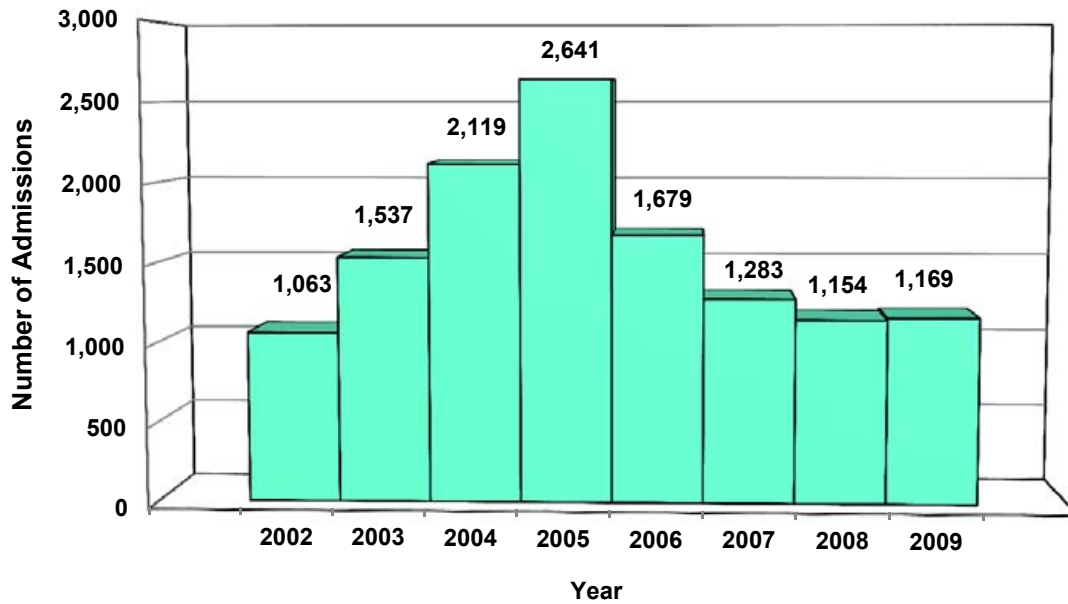


**Exhibit 12. Cumulative Distribution of Methadone in Grams Per 100,000 Population, by State: 2008**



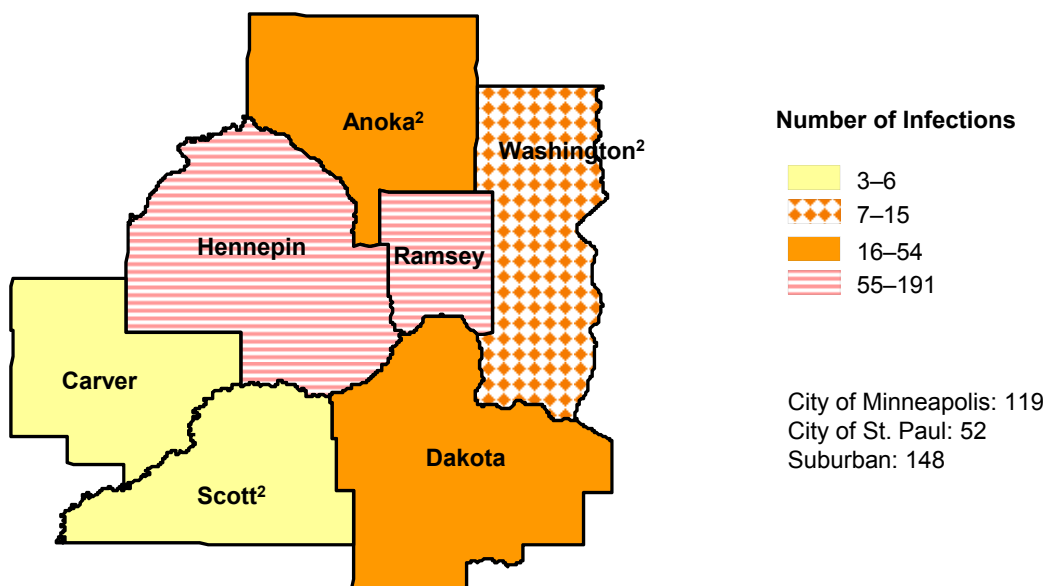
SOURCE: USDOJ, DEA, Office of Diversion Control, ARCOS, run 7/9/2009 (reporting period: 1/1/2008 –12/31/2008); excludes Narcotics Treatment Programs

**Exhibit 13. Number of Admissions to Addiction Treatment Programs With Methamphetamine as the Primary Substance Problem, Twin Cities Area: 2002–2009**



SOURCE: Minnesota Department of Human Services, Drug and Alcohol Abuse Normative Evaluation System (DAANES), May 2010

**Exhibit 14. Twin Cities Area HIV Infections by County of Residence at Diagnosis, Twin Cities Area<sup>1</sup>: 2009**



<sup>1</sup>Seven-county metropolitan area, excluding the cities of Minneapolis and St. Paul.

<sup>2</sup>Counties in which a state correctional facility is located.

SOURCE: Minnesota Department of Health. Minnesota HIV/AIDS Surveillance System, 2010

## Drug Use Trends in New York City: 2009

Rozanne Marel, Ph.D., Robinson B. Smith, M.A., Gregory Rainone, Ph.D., and Raymond Toledo, Ph.D.<sup>†</sup>

### ABSTRACT

*This report describes drug abuse patterns and trends for the five boroughs of New York City in 2009. Cocaine remained a major problem in New York City. Cocaine indicators were mixed for this reporting period, but several showed signs of decreasing. Drug Abuse Warning Network (DAWN) weighted data showed a significant increase in emergency department (ED) visits between 2004 and 2008, but a significant decrease between 2007 and 2008. Primary cocaine treatment admissions declined to the lowest level in more than two decades; nevertheless, more clients in treatment had a primary, secondary, or tertiary problem with cocaine than with any other drug. There were also more National Forensic Laboratory Information System (NFLIS) items for cocaine than for any other drug. Street reports were that cocaine was highly available, although crack may have been of a lower quality. Heroin remained a major problem in New York City, but heroin indicators were mixed. More than one-quarter of all primary treatment admissions were for heroin. Among primary heroin treatment admissions, the percentage of injectors increased to 40 percent. There was no significant change in the DAWN weighted data from 2004 to 2008 for heroin. The average purity of heroin decreased as did the price per milligram pure. Heroin prices fluctuated during this reporting period, showing both substantial increases and decreases. Twelve percent of NFLIS items were heroin. Several indicators continued to point to*

*an increase in heroin and other opiate use and consequences in the suburban area surrounding New York City. Marijuana indicators continued their recent steady increase and remained at a high level. Marijuana primary treatment admissions increased to the highest number ever and represented one-quarter of all treatment admissions. More than one-quarter of NFLIS items analyzed were marijuana. Weighted DAWN data for marijuana ED visits increased 174 percent between 2004 and 2008. Marijuana continued to be of good quality and widely available. Prices were mixed during this reporting period. Street reports suggested that marijuana in a blunt cigar continued to serve as the base to which other drugs are added. Prescription drugs represented only a small fraction of primary admissions to treatment. Despite this, the street studies unit (SSU) continued to report the availability of many kinds of prescription drugs on the street. Furthermore, DAWN weighted data showed significant increases in ED visits between 2004 and 2008 for opiates/opioids as a category, and specifically methadone, oxycodone, and hydrocodone; benzodiazepines as a category also increased, specifically alprazolam. Although prescription drugs represented only a small number of NFLIS items analyzed, the specific drugs that accounted for more than 200 items each were alprazolam, oxycodone, methadone, hydrocodone, clonazepam, and buprenorphine. Methamphetamine indicators remained low. Treatment admissions, DAWN reports, and NFLIS items involving the drug were all at very low levels. According to the SSU, there was little methamphetamine availability or selling activity. MDMA (3,4-methylenedioxymethamphetamine) indicators remained low. MDMA primary treatment admissions represented a very small number. DAWN weighted data for MDMA remained low and did not change significantly between 2004 and 2008. MDMA items analyzed by NFLIS increased in rank from 10th in 2008 to 6th in 2009. BZP (1-benzylpiperazine) rose to 14th on the NFLIS list. Items analyzed and identified as BZP increased from 4 in the first half of 2008 to 250 in 2009. PCP (phencyclidine) ranked*

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*eighth among NFLIS items analyzed and showed significant increases in DAWN data between 2004 and 2008. HIV/AIDS Update: 105,633 New Yorkers were living with human immunodeficiency virus (HIV) or acquired immune deficiency syndrome (AIDS) as of December 31, 2008. Males comprised an increasing proportion of new HIV diagnoses. Minorities continued to be disproportionately affected by HIV. Persons living with HIV or AIDS were aging.*

## INTRODUCTION

### Area Description

New York City, with over 8.3 million people, is the largest city in the United States. It is situated in the southeastern corner of the State on the Atlantic coast and encompasses an area of over 300 square miles. There are more than 26,400 persons per square mile. New York City has nearly 600 miles of waterfront and one of the world's largest harbors.

Historically, New York City has been home to a large multiracial, multiethnic population. New York City is the largest and most racially/ethnically diverse city in the country. As has been true throughout its history, immigration continues to shape the character of New York City. It has contributed to a substantial shift in the racial/ethnic composition of New York. Findings from the 2000 U.S. Census show that the population diversity continues: 35 percent are White; 27 percent are Black; 27 percent are Hispanic of any race; and 10 percent are Asian and Pacific Islander. The five largest Asian groups in New York City are Chinese, Asian Indian, Korean, Filipino, and Pakistani; the five largest groups of Hispanic origin are Dominican, Mexican, Puerto Rican, Colombian, and Ecuadorian. Moreover, New York City includes people who identify with races/ethnicities from all over the world.

More than 3 million New York City residents are foreign born, which represents 37 percent of the resident population, and 48 percent of the population 5 years and older speak a language other than English at home. Approximately 1.2 million

legal immigrants became New York City residents between 1990 and 2000. According to the New York City Department of City Planning, the Dominican Republic remains the city's largest source of immigrants, followed by China, Jamaica, Guyana, and Mexico. The highest percentage of foreign-born New Yorkers resides in Queens (46 percent). It is estimated, for example, that in Queens alone more than 120 languages are spoken. Brooklyn has the next highest percentage of foreign-born residents (38 percent), followed by Manhattan (29 percent), the Bronx (29 percent), and Staten Island (16 percent). According to the New York City Department of Health and Mental Hygiene, foreign-born New Yorkers are less likely than those born in the United States to have insurance and primary care providers, and consequently face barriers to accessing health care and treatment.

New York City remains the economic hub of the Northeast. Its main occupations include management and professional, sales and office, and service. The unemployment rates continued their recent increase in early 2010, compared with 2009. The unemployment rate in New York City for April 2010 was 9.8 percent; the rate for New York State was 8.4 percent. The unemployment rate for the Nation was 9.9 percent. The unemployment figures for April 2009 were 8.9 for New York City; 8.1 for New York State; and 8.9 for the Nation. According to the U.S. Census Bureau, 2006–2008 American Community Survey, the median household income in 2008 was 50,403, and 19 percent were living below the poverty level.

### Data Sources

This report describes current drug abuse trends in New York City from 1995 to 2009, using the data sources summarized below:

- **Emergency department (ED) data** were derived from the Drug Abuse Warning Network (DAWN) administered by the Office of Applied Studies (OAS), Substance Abuse and Mental Health Services Administration (SAMHSA). Weighted ED data for calendar years 2004–2008 data are based on a representative sample of

hospitals in the five boroughs of New York City. The data are presented as estimates or rates per 100,000 population for ED visits for selected drugs with confidence intervals (denoted by CI) indicating the lower and upper bounds of the estimates/rates at the 95 percent confidence level. This report follows the SAMHSA convention of providing confidence intervals when making comparisons based on estimates or rates, and of not reporting estimates when the relative standard error is greater than 50 percent, or the number is less than 30. Only weighted DAWN data released by SAMHSA can be used for trend analysis. A full description of the DAWN system can be found at <http://dawninfo.samhsa.gov/>.

- **Drug abuse-related death data** are from the DAWN, OAS, SAMHSA, 2008: Area Profiles of Drug-Related Mortality. Data from 2007 to 2008 covered the five boroughs of New York City.
- **Treatment admissions data** were provided by the New York State Office of Alcoholism and Substance Abuse Services (OASAS) for 1995 through 2009, and included admissions to both State-funded and nonfunded programs. Demographic data are for 2009.
- **Forensic laboratory testing data** for New York City were provided by the Drug Enforcement Administration (DEA)'s National Forensic Laboratory Information System (NFLIS) for January through December 2009. The data include New York Police Department laboratory data for the five boroughs of New York City as well as data from New York State and DEA laboratories.
- **Drug price, purity, and trafficking data** were provided by the *National Illicit Drug Prices—Mid-Year 2009*, a National Drug Intelligence Center (NDIC) Intelligence Bulletin, February 2010; the DEA *2008 Domestic Monitor Program (DMP), Drug Intelligence Report, October 2009*; and OASAS Street Studies (SSU) reports (the SSU is a street research unit that monitors drug activity on the streets of New York City).
- **Acquired immunodeficiency syndrome (AIDS) and human immunodeficiency virus (HIV) data** were provided by the New York City Department of Health and Mental Hygiene, HIV Epidemiology Program for 1981–2008, including the HIV Epidemiology and Field Services Semiannual Report, Vol. 4, No. 2, January 1, 2008–December 31, 2008.

## DRUG ABUSE PATTERNS AND TRENDS

### Cocaine/Crack

Cocaine indicators were mixed during this reporting period, with several showing signs of decreasing (exhibit 1). Nevertheless, the drug still accounted for major problems in New York City.

Primary cocaine treatment admissions to State-funded and nonfunded programs in New York City had declined from 17,572 in 1998 to 13,744 in 2009, the lowest number in more than two decades. In 2009, cocaine admissions constituted 17 percent of New York City's 83,401 total drug and alcohol treatment admissions. In addition to these primary cocaine admissions, there were 17,984 admissions who reported cocaine as a secondary substance, and 5,095 who reported cocaine as a tertiary substance. Among the 83,401 drug and alcohol treatment admissions in 2009, 35,733 (43 percent) mentioned cocaine as a primary, secondary, or tertiary substance of abuse.

Exhibit 2 shows demographic characteristics of cocaine treatment admissions for 2009 by the two primary modes of use: smoking crack (representing 61 percent of cocaine admissions), and using cocaine intranasally (representing 36 percent). Clients who smoked crack were more likely than intranasal users to be female (36 versus 24 percent), Black (68 versus 42 percent), and without income (37 versus 31 percent). Clients using intranasally were more likely to be Hispanic or White and to have some criminal justice status. For both groups the secondary drugs of abuse tended to be alcohol and marijuana. It should be noted that all admissions for primary cocaine

abuse represented an aging population, and those smoking crack tended to be older than those using cocaine intranasally.

According to data from the DAWN mortality system for the five boroughs of New York City, there were 357 cocaine-related deaths in 2008, compared with 394 in 2007. Weighted DAWN estimates were available for New York City for the years 2004–2008. According to these estimates, there were 31,647 (CI=20,785–42,508) DAWN ED visits for cocaine in 2008 (exhibit 3). Overall, this is a significant change from 2004 when there were an estimated 20,445 visits (CI=13,141–27,749), and represents a 55-percent increase. However, between 2008 and 2007, the number of visits declined by 11 percent from 35,706 (CI=21,931–49,481), which was also significant.

Another data source, the DEA's NFLIS, showed that of the 52,677 drug items analyzed and reported for New York City, from January through December 2009, 21,222 (40 percent) were cocaine.

The NDIC reported that prices for cocaine powder for June 2009 were: \$25,000–\$42,000 per kilogram; mid-level sales of \$700–\$1,500 per ounce; and retail prices of \$100–\$200 per one-eighth ounce, \$26–\$80 per gram, and \$5–\$30 per bag. These prices represent substantial increases at both the wholesale and mid-level, and a mix of increases and decreases at the retail level since the end of 2008. The NDIC reported that crack sold for \$23,000–\$40,000 per kilogram; \$650–\$1,600 per ounce; \$100–\$200 per one-eighth gram; \$30–\$100 per gram; \$5–\$15 per rock; and \$10–\$30 per vial. These represent substantial increases at all levels since the end of 2008.

According to the SSU, cocaine hydrochloride (HCl) continued to be readily available. Although cocaine continued to be sold primarily from indoor venues, there were reports of small amounts of powder cocaine being sold on the street. Cocaine prices can fluctuate, as sellers vary the purity of the product and offer several different size packages. Dominicans and Colombians continued to dominate as cocaine distributors in New York City.

Cocaine HCl continued to be packaged using various methods, including vials, nail-size plastic bags, aluminum foil, glassine bags, light plastic wrap knotted at both ends, cellophane, folded paper, magazine pages, and balloons. Of these, the most frequently used methods were plastic wrap and aluminum foil.

Of all the basic selling methods used in marketing cocaine, the techno-method or virtual connection method continued to be increasingly utilized. A buyer makes a connection with a seller through the use of a beeper, Internet, or cell phone, including text messaging. After cell phone or text message contact, the seller may set up a meeting, where he arranges for the delivery of the ordered goods which are dropped off at a customer's office, home, or other location, such as a nearby fast-food or take-out restaurant.

Cocaine sellers typically work out of their own apartments or ones belonging to relatives. Cocaine selling on the street, however, continued to be popular among sellers who primarily sold small amounts of cocaine with prices under \$50.

Street sources reported that crack continued to be available throughout the city, but that the quality had declined. Crack selling techniques were becoming more covert with a substantial decline in "open-air" market activity. Crack sales were being performed less by individuals and more by organized groups of young males, possibly gangs. Field workers also reported that crack users appeared to be older.

While at any given selling location there is only one standard price, SSU staff found crack being sold for various prices throughout the city, usually ranging from \$5 to \$20. The most common price continued to be \$10, which represents approximately 0.1 grams. There have been reports of crack available for as little as \$3, probably reflecting the economy. Another indication of the poor economy is the fact that some drug dealers in the city also sell phone cards, cigarettes, or other products that will help generate income.

There are three basic packaging methods associated with crack in New York City. These are the plastic vial, thumb-nail-size plastic bag, and glassine

bag. The thumb-nail-size bag continued to be the most common packaging method used by sellers.

## Heroin

Heroin continued to be a major drug problem in New York City (exhibit 4). For example, over one-quarter of New York City's primary treatment admissions in 2009 were for heroin. Over the last several years, there has been a marked change in the price and purity of heroin, with a substantial decrease in purity and increase in price.

Primary heroin admissions to treatment programs in New York City gradually increased between 1995 and 2004, from 18,287 to 23,802, a 30-percent increase (exhibit 4). However, the number of admissions has remained stable for the last several years, and numbered 21,931 in 2009, constituting 26 percent of New York City's 83,401 drug treatment admissions. In addition to these 21,931 primary heroin admissions, heroin was reported as a secondary substance of abuse for 2,672 admissions, and a tertiary drug for 1,101 admissions. Heroin was identified as the primary substance for most treatment admissions with heroin as a substance of abuse. This contrasts with cocaine-related admissions where for over 60 percent it was reported as a secondary or tertiary drug of abuse.

Intranasal heroin use may have peaked in the second half of 1998, with 62 percent of heroin admissions to all New York City drug treatment programs reporting this as their primary route of administration. Since then, the proportions reporting intranasal use declined slightly, and ranged from 58 to 61 percent. In 2009, the proportion using intranasally was 58 percent. Meanwhile, heroin injection increased among heroin admissions, from 32 percent in the second half of 1998 to 40 percent in 2009. This is the first year since 1997 that at least 40 percent of heroin admissions reported injecting as their primary route of administration.

Exhibit 5 highlights general demographic characteristics of heroin abusers admitted to all New York City treatment programs in 2009 by mode of use. In general, primary heroin admissions were overwhelmingly male (78 percent); 35 and older

(76 percent); more likely to be Hispanic (48 percent) than Black (25 percent) or White (21 percent); and likely to have cocaine identified as a secondary drug of abuse (41 percent). Compared with heroin injectors, intranasal users were more likely to be Black (34 versus 12 percent) and have some criminal justice status (30 versus 20 percent). In contrast, primary heroin injectors were more likely than intranasal users to be White (33 versus 13 percent), to have cocaine identified as a secondary drug of abuse (47 versus 37 percent), and to have started use before reaching age 20 (55 versus 42 percent).

In addition to heroin admissions to traditional treatment programs, heroin admissions for detoxification or crisis services in New York City have become sizable in number. These special services are usually short term, provided in a hospital or community-based setting, and medically supervised. In 1995, 4,503 such admissions were reported for heroin abuse. In 2009, the number of heroin admissions was 14,548, essentially the same as the previous year.

According to data from the DAWN mortality system, for the five boroughs of New York City, there appeared to be an increase in heroin-related deaths with 155 deaths in 2008, compared with 96 in 2007.

For the five boroughs of New York City, weighted DAWN data for 2004 through 2008 showed that in 2004 there were 13,383 (CI=8,541–18,225) estimated heroin ED visits, while in 2008, there were 16,084 (CI=10,404–21,765). However, the only significant change was between 2006 and 2008, where the number of visits declined by 10 percent from 17,892 (CI=11,241–24,543).

NFLIS data showed that 12 percent of the 52,677 drug items analyzed for New York City in 2009 ( $n=6,297$ ) contained heroin. According to the NDIC, prices in June 2009 were \$45,000–\$80,000 per kilogram for South American heroin, and \$90,000 for 750 grams of Southwest Asian heroin. Mid-level prices were \$1,100–\$3,100 per ounce of South American. Retail prices for South American heroin were \$40–\$85 per gram, \$90–\$200 per bundle, and \$10–\$20 per bag. These prices represent increases at the wholesale and retail levels, but

decreases at the low end and increases at the high end of mid-level. According to the DEA Domestic Monitor Program, the purity of heroin in 2008 fell slightly to 47.1 percent. From 1992 to 2000 the purity was generally greater than 60 percent, but since 2004 it has remained below 50 percent. Interestingly, the price per milligram pure also fell from \$0.79 in 2007 to \$0.66 in 2008.

While many indicators for heroin in New York City remained stable or showed slight decreases, it should be noted that several indicators (including treatment admissions, death data, and preliminary DAWN *Live!* unweighted ED data) point to a substantial increase in heroin and other opiate use and consequences in the suburban area surrounding New York City. Street researchers have also reported an increase in the number of young White buyers from suburban New York and New Jersey at “copping sites” in New York City.

According to the SSU field staff, heroin in New York City continued to be highly available, and the demand for heroin remained high. Despite the wide availability of heroin, however, there appeared to be fewer heroin sellers operating in public than marijuana or crack sellers. Most users reported that the potency was good. According to various street contacts, the majority of the heroin available in the city came from South America, and the distribution was controlled by Colombian/Dominican organized crime groups.

The majority of heroin coping sites are indoor or off-the-street operations. The most popular packaging method is the glassine bag, which varies by color to denote a given area or dealer. In addition, brand names are sometimes used, but this practice is not as common as it once was. Although most heroin users described themselves as snorters, they continued to report that they knew of more and more users using needles. This is particularly true for young users (those younger than 30).

### Other Opiates/Narcotics

Treatment admissions for other opiates/narcotics represented only 1 percent of admissions in New York City in 2009, but they have increased in both

New York City and other areas of New York State. According to data from the DAWN mortality system for New York City, there were 186 methadone-related deaths in 2008, the same number as 2007. For other opiate/opioid-related deaths (not including heroin or methadone) the numbers were 239 in 2007 and 286 in 2008.

DAWN weighted estimates for 2008 revealed an estimated 7,984 (CI=6,282–9,687) ED visits for opiates/opioids (exhibit 3). This represents a 121-percent increase since 2004 when there were 3,615 (CI=2,657–4,573). For the narcotic analgesics, most were for methadone, with an estimated 4,526 (CI=3,554–5,498) ED visits in 2008, which represented a 98-percent increase from the estimated 2,288 (CI=1,580–2,996) visits in 2004. There were also an estimated 872 (CI=716–1,028) oxycodone/combinations visits in 2008, representing an increase of 237 percent and 424 (CI=345–503) hydrocodone/combinations visits, representing an increase of 50 percent.

According to the SSU, prescription opiates were available and popular on the street. OxyContin® was sold on the street for \$15–\$17 for a 40-milligram tablet. Other prices for opiates on the street were Vicodin® selling for \$5–\$10 per dosage unit, and Percocet® selling for \$8–\$15 per dosage unit. SSU staff also reported that OxyContin® continued to be used to cut heroin or to boost methadone. Other medications being used to cut heroin included Vicodin®, Percocet®, Dilaudid®, Klonopin®, and Tylenol® with codeine (#4). Field workers continued to report that Suboxone® was available on the street. Buprenorphine moved from 15th place in NFLIS items analyzed in the first half of 2008 to 11th place in 2009.

### Benzodiazepines/Barbiturates

Psychoactive prescription drugs continued to be widely available and popular in 2009. The SSU continued to report a variety of drugs readily available on the street. According to data from DAWN Drug-Related Mortality for New York City, there were 192 benzodiazepine-related deaths in 2008, compared with 146 in 2007.



In 2008, for the five boroughs of New York City, there were an estimated 3,828 (CI=2,826–4,830) benzodiazepine DAWN ED visits (exhibit 3). This is a significant increase (73 percent) since 2004 when there were an estimated 2,213 visits (CI=1,677–2,748). Among the benzodiazepines, the specific drugs with the most reports in 2008 were alprazolam (1,703, CI=1,215–2,191), which increased by 79 percent in the 4 years; clonazepam (919, CI=624–1,213); diazepam (252, CI=181–324); and lorazepam (280, CI=187–373).

According to the SSU, the three most popular or commonly sold pharmaceuticals on the street in this category were alprazolam (Xanax®), amitriptyline (Elavil®), and clonidine (Catapres®). Xanax® was sold on the street for \$2–\$7 per 2-milligram pill, and Valium® was sold for \$3. Most of these medications came in a variety of strengths, and not all strengths were found on the street.

### **Methamphetamine/Amphetamines**

Although methamphetamine was popular in other parts of the Nation, there were relatively few arrests, ED reports, deaths, or treatment admissions related to the drug in New York City in 2009. In New York City, there were an estimated 377 weighted DAWN ED visits for stimulants in 2008, including 295 (CI=116–474) for methamphetamine (exhibit 3). NFLIS data showed that less than 1 percent of the 52,677 drug items analyzed for New York City in 2009 contained methamphetamine.

According to the NDIC, the wholesale price of methamphetamine in June 2009 was \$21,000–\$26,000 per pound for Mexican “ice,” the lower end being a substantial increase since December 2008. At the mid-level the range was \$1,900–\$2,300 per ounce for Mexican ice, a substantial increase at the low end and a substantial decrease at the high end. Street researchers continued to report that the general demand for crystal methamphetamine in New York City remained low, and there was little availability or selling activity. The use of crystal methamphetamine was still primarily limited to the gay/male community.

Some informants indicated that methamphetamine could be found, but the quality was poor and the price was high.

### **Marijuana**

In New York City, marijuana indicators, which had recently increased steadily, remained at a high level. Primary marijuana admissions to all treatment programs increased steadily over the past several years. Overall, the number increased more than fourteen-fold between 1991 and 2009, from 1,374 to 20,876, the highest annual number (exhibit 6). In 1991, primary marijuana admissions represented less than 5 percent of all treatment admissions; by 2009, these admissions represented 25 percent of admissions to all New York City treatment programs.

Exhibit 7 shows demographic characteristics of primary marijuana admissions to all New York City treatment programs in 2009. The vast majority were male (80 percent), and 47 percent were 25 and younger. More than one-half (57 percent) were Black; about one-third (29 percent) were Hispanic; and 7 percent were White. Alcohol was the secondary drug of abuse for 35 percent of the marijuana admissions, and 61 percent had some criminal justice status.

For 2004 to 2008, the weighted DAWN estimates for the five boroughs of New York City are as follows. In 2004, there were 5,920 estimated visits (CI=4,246–7,593). That increased to 10,192 in 2005 (CI=7,171–13,214); 12,938 (CI=9,111–16,765) in 2006; 14,500 (CI=10,351–18,649) in 2007; and 16,204 (CI=11,994–20,414) in 2008. That increase of 174 percent between 2004 and 2008 is significant (exhibit 3). DAWN visits increased significantly for all age groups between 12 and 64. For 55–64-year-olds, the increase was especially noticeable at 330 percent.

According to NFLIS data, 33 percent of the drug items analyzed for New York City in 2009 ( $n=17,372$ ) contained marijuana/cannabis. According to the NDIC, marijuana prices in mid-2009 ranged from \$200 to \$2,500 per pound wholesale for commercial grade, a substantial decrease at the low end, and a substantial increase at the high end. The price for hydroponic marijuana ranged from

\$300 to \$1,200 per ounce, the high end being a substantial increase.

According to the SSU, marijuana continued to be widely available and in high demand. Field researchers continued to report the current tendency by drug users to mix and combine multiple drugs for simultaneous use, and marijuana in a blunt cigar as the base to which other drugs are added. The quality of marijuana varied greatly by seller and location. Usually street sales involved thumb-nail-size plastic zip-lock bags.

### Club Drugs

Club drugs are a collection of various synthetic chemical compounds that are often abused by young people in social settings, such as dance clubs, after-hour clubs, and other special events. Club drugs include MDMA (3,4-methylenedioxymethamphetamine), GHB (gamma hydroxybutyrate), and ketamine. All-night parties are about endurance and sensory overstimulation, and, not surprisingly, many of the club drugs have stimulant or hallucinogenic properties.

According to the weighted DAWN ED data for the five boroughs of New York City, there were an estimated 372 (CI=257–488) visits for MDMA in 2004 (exhibit 3). The estimate in 2008 was 478 (CI=358–598). This was not a significant change.

According to NFLIS data, 910 items analyzed in 2009 were MDMA. This may signal an increase, since MDMA ranked 6th during this reporting period, compared with 10th in 2008. According to the NDIC for June 2009, a dose sold for \$5–\$30 per tablet retail, a substantial increase at the lower level from the end of 2008. Street sources reported that while MDMA continued to be available in some parts of the city, there were other areas where MDMA was not easy to obtain.

LSD (lysergic acid diethylamide) is a strong hallucinogen that has not been a major problem in New York City since the late 1960s and early 1970s. However, according to DAWN ED data for New York City, there were an estimated 132 (CI=70–193) visits for LSD in 2008, a 72-percent increase since 2004, and a 91-percent increase since 2006.

### PCP (Phencyclidine)

PCP (“angel dust”) continued to be available in some areas of New York City. For the five boroughs of New York City, there were an estimated 935 (CI=764–1,106) DAWN ED visits for PCP in 2008, representing a significant 107-percent increase from the 451 (CI=335–567) visits in 2004. PCP-involved DAWN visits represented the most for any illicit drug other than cocaine, heroin, and marijuana (exhibit 3). PCP ranked eighth ( $n=609$ ) among NFLIS items analyzed in New York City.

### Other Drugs

BZP (1-benzylpiperazine), an illegal synthetic stimulant, appeared in New York City indicators for the first time in 2009. BZP moved up to 14th on the list of items analyzed by NFLIS, increasing from 4 items in the first half of 2008 to 250 items in 2009.

## INFECTIOUS DISEASES RELATED TO DRUG ABUSE

The AIDS epidemic, with its impact on injection drug users (IDUs), has played a crucial role in shaping the New York City drug scene over the last two decades. HIV first entered New York City in the mid- to late-1970s. AIDS reporting was mandated in 1983, but reporting of HIV infection began in June 2000.

As of December 31, 2008, 105,633 New Yorkers had been diagnosed with HIV or AIDS; 41,177 (39 percent) were living with HIV (non-AIDS), and 64,456 (61 percent) were living with AIDS. According to the New York City Department of Health and Mental Hygiene, the true number of persons living with HIV/AIDS (PLWHA) was actually higher, since they estimate that one-quarter of persons living with HIV have never been tested and do not know that they are infected. In 2008, there were 1,920 deaths among persons with HIV/AIDS in New York City.

Of the 105,633 PLWHA in New York City as of December 31, 2008, 70 percent were male and 30 percent were female. In terms of race/ethnicity,

45 percent were Black; 32 percent were Hispanic; and 21 percent were White. For transmission risk factors, 32 percent (33,907) were men who have sex with men; 20 percent (21,212) had an injection drug use history; 19 percent reported a heterosexual transmission factor; 2 percent had a perinatal transmission risk factor; less than 1 percent had another risk factor; and 27 percent had an unknown risk factor or were under investigation.

According to the New York City Department of Health and Mental Hygiene *HIV Epidemiology Program 2nd Semiannual Report*, important trends include the following. Males comprised an increasing proportion of new HIV diagnoses. The proportion of new diagnoses rose from 68 percent in 2003 to 75 percent in 2008. Among

males age 13–29, new diagnoses increased by 27 percent between 2003 and 2008. Minorities continued to be disproportionately affected by HIV/AIDS; more than 80 percent of new diagnoses were among Blacks and Hispanics. PLWHA were aging; the proportion age 50 and older rose from 25 percent in 2003 to 37 percent in 2008.

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**Exhibit 1. Trends in Selected Indicator Data for Cocaine in New York City: 1995–2009  
(Semiannual and Annual)**

Year	Semiannual/ Annual Periods	Deaths Involving Cocaine <sup>1</sup>	Cocaine- Involved ED Estimated Visits <sup>2</sup>	Treatment Admissions: Cocaine as Primary Drug of Abuse <sup>3</sup>	Cocaine Arrests <sup>4</sup>	Births to Women Using Cocaine <sup>5</sup>
1995	1H			8,371		
	2H			7,836		
	<b>Total</b>			<b>16,207</b>	<b>40,846</b>	<b>1,059</b>
1996	1H			8,561		
	2H			8,817		
	<b>Total</b>			<b>17,378</b>	<b>38,813</b>	<b>1,005</b>
1997	1H			9,048		
	2H			8,401		
	<b>Total</b>			<b>17,449</b>	<b>35,431</b>	<b>864</b>
1998	1H			8,999		
	2H			8,573		
	<b>Total</b>			<b>17,572</b>	<b>35,577</b>	<b>742</b>
1999	1H			8,346		
	2H			7,567		
	<b>Total</b>			<b>15,913</b>	<b>31,781</b>	<b>626</b>
2000	1H			7,337		
	2H			6,722		
	<b>Total</b>			<b>14,059</b>	<b>31,919</b>	<b>490</b>
2001	1H			7,343		
	2H			7,032		
	<b>Total</b>			<b>14,375</b>	<b>23,498</b>	<b>438</b>
2002	1H			7,736		
	2H			7,872		
	<b>Total</b>			<b>15,608</b>	<b>26,773</b>	<b>363</b>
2003	1H			8,203		
	2H			7,911		
	<b>Total</b>			<b>16,114</b>	<b>25,868</b>	<b>354</b>
2004	1H			8,410		
	2H			8,301		
	<b>Total</b>		<b>20,445</b>	<b>16,711</b>	<b>27,963</b>	<b>337</b>
2005	1H			8,215		
	2H			7,741		
	<b>Total</b>		<b>30,478</b>	<b>15,956</b>	<b>26,773</b>	<b>301</b>
2006	1H			8,582		
	2H			8,868		
	<b>Total</b>		<b>36,791</b>	<b>17,450</b>	<b>27,992</b>	<b>298</b>
2007	1H			8,618		
	2H			7,988		
	<b>Total</b>	<b>394</b>	<b>35,706</b>	<b>16,606</b>		
2008	1H			8,180		
	2H			7,568		
	<b>Total</b>	<b>357</b>	<b>31,647</b>	<b>15,748</b>		
2009	1H			6,978		
	2H			6,766		
	<b>Total</b>			<b>13,744</b>		

<sup>1</sup>DAWN, OAS, SAMHSA, Drug-Related Mortality, 2008 for the five boroughs of New York City.

<sup>2</sup>DAWN, OAS, SAMHSA, updated 9/2009.

<sup>3</sup>New York State Office of Alcoholism and Substance Abuse Services (OASAS)-funded and nonfunded treatment admissions.

<sup>4</sup>New York City Police Department.

<sup>5</sup>New York City Department of Health and Mental Hygiene.

SOURCES: DAWN, OAS, SAMHSA, Drug-Related Mortality, 2008; DAWN, OAS, SAMHSA, updated 9/2009; New York State Office of Alcoholism and Substance Abuse Services (OASAS); New York City Police Department; and New York City Department of Health and Mental Hygiene

**Exhibit 2. Characteristics of Primary Cocaine Admissions<sup>1</sup> to State-Funded<sup>2</sup> and Nonfunded<sup>3</sup> Treatment Programs, by Route of Administration and Percent, in New York City: 2009**

Demographic Characteristic	Percent Total (N=13,744)	Percent Smoking Crack (n=8,390)	Percent Using Cocaine Intranasally (n=4,927)
<b>Gender</b>			
Male	69	64	76
Female	31	36	24
<b>Age at Admission</b>			
25 and younger	5	4	8
26–34	15	12	19
35 and older	79	84	72
(Average age)	(41.9)	(42.8)	(40.5)
<b>Race</b>			
Black	57	68	42
Hispanic	25	18	35
White	14	11	18
No Source of Income <sup>4</sup>	35	37	31
Some Criminal Justice Status	37	33	45
Readmissions	82	86	75
<b>Age of First Use</b>			
14 and younger	7	5	9
15–19	30	26	38
20–29	43	47	38
30 and older	20	23	15
<b>Secondary Drug of Abuse</b>			
Alcohol	37	39	34
Marijuana	22	21	25
Heroin	8	8	8

<sup>1</sup>Figures on this table may differ somewhat from figures cited on other tables, because computer runs may have been executed at different times and files are being updated continuously.

<sup>2</sup>State-funded programs receive some or all funding through the New York State Office of Alcoholism and Substance Abuse Services (OASAS).

<sup>3</sup>Nonfunded programs receive funding through sources other than OASAS, including Medicaid and private insurance reimbursements and patient fees (self-pay).

<sup>4</sup>Defined as not earning income, not receiving support from family or significant others, and not receiving any public assistance.

SOURCE: New York State Office of Alcoholism and Substance Abuse Services (OASAS)

**Exhibit 3. Estimated Drug-Related Emergency Department (ED) Visits in New York City for Selected Illicit, Psychotherapeutic, and CNS Drugs of Abuse, with Relative Standard Errors and Confidence Intervals<sup>1</sup>: 2008**

Selected Drugs	Estimated Numbers of Visits <sup>2</sup>	Relative Standard Error (RSE) as Percent	Lower 95% Confidence Limit <sup>1</sup>	Upper 95% Confidence Limit <sup>1</sup>
<b>Nonalcohol Illicit Drugs</b>	<b>77,670</b>	<b>12.6</b>	<b>58,458</b>	<b>96,882</b>
Cocaine	31,647	17.5	20,785	42,508
Heroin	16,084	18.0	10,404	21,765
Marijuana	16,204	13.3	11,994	20,414
Methamphetamine	295	30.9	116	474
MDMA	478	12.8	358	598
PCP	935	9.3	764	1,106
<b>Nonmedical Use of Pharmaceuticals</b>	<b>21,834</b>	<b>8.6</b>	<b>18,171</b>	<b>25,497</b>
Psychotherapeutic Agents				
Benzodiazepines	3,828	13.4	2,826	4,830
Selected CNS Agents				
Opiates/Opioids	7,984	10.9	6,282	9,687
Narcotic Analgesics	6,167	8.4	5,146	7,188
Fentanyl	... <sup>3</sup>	...	...	...
Hydrocodone	424	9.5	345	503
Methadone	4,526	11.0	3,554	5,498
Morphine	174	13.7	127	221
Oxycodone	872	9.1	716	1,028

<sup>1</sup>Confidence intervals showing the lower and upper bounds at 95 percent confidence level.

<sup>2</sup>Summing or combining visits produces incorrect and inflated counts.

<sup>3</sup>Dots (...) indicate that an estimate with a relative standard error of greater than 50 percent has been suppressed or the estimated quantity was less than 30.

SOURCE: Site-specific data obtained by request from DAWN, OAS, SAMHSA, updated 9/2009

**Exhibit 4. Trends in Selected Indicator Data for Heroin in New York City: 1995–2009 (Semiannual and Annual)**

Year	Semiannual/ Annual Period	Deaths Involving Heroin <sup>1</sup>	Heroin/Morphine ED Estimated Visits <sup>2</sup>	Treatment Admissions: Heroin as Primary Drug of Abuse <sup>3</sup>	Heroin Arrests <sup>4</sup>	Average Purity of Street Heroin (%) <sup>5</sup>
1995	1H			9,286		
	2H			9,001		
	<b>Total</b>			<b>18,287</b>	<b>38,131</b>	<b>(69.4)</b>
1996	1H			9,161		
	2H			9,617		
	<b>Total</b>			<b>18,778</b>	<b>37,901</b>	<b>(56.3)</b>
1997	1H			10,276		
	2H			10,431		
	<b>Total</b>			<b>20,707</b>	<b>35,325</b>	<b>(62.5)</b>
1998	1H			10,793		
	2H			10,203		
	<b>Total</b>			<b>20,996</b>	<b>37,483</b>	<b>63.6</b>
1999	1H			10,690		
	2H			10,189		
	<b>Total</b>			<b>20,879</b>	<b>32,949</b>	<b>(61.8)</b>
2000	1H			10,944		
	2H			10,672		
	<b>Total</b>			<b>21,616</b>	<b>33,665</b>	<b>(62.9)</b>
2001	1H			11,324		
	2H			11,455		
	<b>Total</b>			<b>22,779</b>	<b>27,863</b>	<b>(56.0)</b>
2002	1H			11,357		
	2H			11,157		
	<b>Total</b>			<b>22,514</b>	<b>34,098</b>	<b>(61.4)</b>
2003	1H			11,540		
	2H			12,023		
	<b>Total</b>			<b>23,563</b>		<b>(53.5)</b>
2004	1H			12,059		
	2H			11,743		
	<b>Total</b>		<b>13,383</b>	<b>23,802</b>		<b>(43.3)</b>
2005	1H			11,127		
	2H			10,665		
	<b>Total</b>		<b>18,179</b>	<b>21,792</b>		<b>(49.4)</b>
2006	1H			11,189		
	2H			11,055		
	<b>Total</b>		<b>17,892</b>	<b>22,244</b>		<b>(44.5)</b>
2007	1H			11,356		
	2H			11,256		
	<b>Total</b>	<b>96</b>	<b>16,884</b>	<b>22,612</b>		<b>(49.0)</b>
2008	1H			11,024		
	2H			11,700		
	<b>Total</b>	<b>155</b>	<b>16,084</b>	<b>22,724</b>		<b>(47.1)</b>
2009	1H			10,689		
	2H			11,242		
	<b>Total</b>			<b>21,931</b>		

<sup>1</sup>DAWN, OAS, SAMHSA, Drug-Related Mortality, 2008 for the five boroughs of New York City.

<sup>2</sup>DAWN, OAS, SAMHSA, updated 9/2009.

<sup>3</sup>New York State Office of Alcoholism and Substance Abuse Services (OASAS)-funded and nonfunded treatment admissions.

<sup>4</sup>New York City Police Department.

<sup>5</sup>DEA.

SOURCES: DAWN, OAS, SAMHSA, Drug-Related Mortality, 2008. DAWN, OAS, SAMHSA, updated 9/2009; New York State Office of Alcoholism and Substance Abuse Services (OASAS); New York City Police Department; and DEA

**Exhibit 5. Characteristics of Primary Heroin Admissions<sup>1</sup> to State-Funded<sup>2</sup> and Nonfunded<sup>3</sup> Treatment Programs by Route of Administration and Percent, in New York City: 2009**

Demographic Characteristic	Percent Total (N=21,931)	Percent Using Heroin Intranasally (n=12,722)	Percent Injecting Heroin (n=8,849)
<b>Gender</b>			
Male	78	78	78
Female	22	22	22
<b>Age at Admission</b>			
25 and younger	6	3	9
26–34	18	13	25
35 and older	76	84	65
(Average age)	(41.9)	(43.5)	(39.7)
<b>Race</b>			
Black	25	34	12
Hispanic	48	48	49
White	21	13	33
<b>No Source of Income<sup>4</sup></b>	33	33	33
<b>Some Criminal Justice Status</b>	26	30	20
<b>Readmissions</b>	85	84	87
<b>Age of First Use</b>			
14 and younger	12	10	14
15–19	36	32	41
20–29	36	37	35
30 and older	16	21	10
<b>Secondary Drug of Abuse</b>			
Alcohol	12	12	10
Marijuana	9	10	8
Cocaine	41	37	47

<sup>1</sup>Figures on this table may differ somewhat from figures cited on other tables, because computer runs may have been executed at different times and files are being updated continuously.

<sup>2</sup>State-funded programs receive some or all funding through the New York State Office of Alcoholism and Substance Abuse Services (OASAS).

<sup>3</sup>Nonfunded programs receive funding through sources other than OASAS, including Medicaid and private insurance reimbursements and patient fees (self-pay).

<sup>4</sup>Defined as not earning income, not receiving support from family or significant others, and not receiving any public assistance.

SOURCE: New York State Office of Alcoholism and Substance Abuse Services



**Exhibit 6. Trends in Selected Indicator Data for Marijuana in New York City: 1995–2009  
(Semiannual and Annual)**

Year	Semiannual/ Annual Period	Marijuana-Involved ED Estimated Visits <sup>1</sup>	Treatment Admissions: Marijuana as Primary Drug of Abuse <sup>2</sup>	Marijuana/ Cannabis Arrests <sup>3</sup>
1995	1H		2,171	
	2H		2,159	
	<b>Total</b>		<b>4,330</b>	<b>12,357</b>
1996	1H		2,845	
	2H		3,185	
	<b>Total</b>		<b>6,030</b>	<b>18,991</b>
1997	1H		3,794	
	2H		3,657	
	<b>Total</b>		<b>7,451</b>	<b>27,531</b>
1998	1H		4,554	
	2H		4,473	
	<b>Total</b>		<b>9,027</b>	<b>42,030</b>
1999	1H		5,119	
	2H		5,100	
	<b>Total</b>		<b>10,219</b>	<b>43,122</b>
2000	1H		5,664	
	2H		5,487	
	<b>Total</b>		<b>11,151</b>	<b>60,455</b>
2001	1H		6,677	
	2H		6,593	
	<b>Total</b>		<b>13,270</b>	<b>47,651</b>
2002	1H		7,512	
	2H		6,798	
	<b>Total</b>		<b>14,310</b>	<b>47,250</b>
2003	1H		6,844	
	2H		6,627	
	<b>Total</b>		<b>13,471</b>	
2004	1H		6,835	
	2H		6,468	
	<b>Total</b>	<b>5,920</b>	<b>13,303</b>	
2005	1H		7,161	
	2H		6,954	
	<b>Total</b>	<b>10,192</b>	<b>14,115</b>	
2006	1H		8,158	
	2H		8,128	
	<b>Total</b>	<b>12,938</b>	<b>16,286</b>	
2007	1H		8,809	
	2H		8,514	
	<b>Total</b>	<b>14,500</b>	<b>17,323</b>	
2008	1H		9,836	
	2H		9,821	
	<b>Total</b>	<b>16,204</b>	<b>19,657</b>	
2009	1H		9,977	
	2H		10,899	
	<b>Total</b>		<b>20,876</b>	

<sup>1</sup>DAWN, OAS, SAMHSA, updated 9/2009.

<sup>2</sup>New York State Office of Alcoholism and Substance Abuse Services (OASAS)-funded and nonfunded treatment admissions.

<sup>3</sup>New York City Police Department.

SOURCES: DAWN, OAS, SAMHSA, updated 9/2009, New York State Office of Alcoholism and Substance Abuse Services (OASAS), and New York City Police Department

**Exhibit 7. Characteristics of Primary Marijuana Admissions<sup>1</sup> to State-Funded<sup>2</sup> and Nonfunded<sup>3</sup> Treatment Programs by Percent in New York City: 2009**

Demographic Characteristic	Percent of Total (N=20,876)
<b>Gender</b>	
Male	80
Female	20
<b>Age at Admission</b>	
17 and younger	10
18–25	37
26–34	30
35 and older	23
(Average Age)	(28.1)
<b>Race</b>	
Black	57
Hispanic	29
White	7
<b>No Source of Income<sup>4</sup></b>	29
<b>Some Criminal Justice Status</b>	61
<b>Readmissions</b>	57
<b>Age of First Use</b>	
14 and younger	48
15–19	44
20–29	7
30 and older	1
<b>Secondary Drug of Abuse</b>	
Alcohol	35
Cocaine	10

<sup>1</sup>Figures on this table may differ somewhat from figures cited on other tables, because computer runs may have been executed at different times and files are being updated continuously.

<sup>2</sup>State-funded programs receive some or all funding through the New York State Office of Alcoholism and Substance Abuse Services (OASAS).

<sup>3</sup>Nonfunded programs receive funding through sources other than OASAS, including Medicaid and private insurance reimbursements and patient fees (self-pay).

<sup>4</sup>Defined as not earning income, not receiving support from family or significant others, and not receiving any public assistance.

SOURCE: New York State Office of Alcoholism and Substance Abuse Services (OASAS)

## Drug Use in Philadelphia, Pennsylvania: 2009

Samuel J. Cutler, Marvin F. Levine, M.S.W., and Roland C. Lamb, M.A.<sup>†</sup>

### ABSTRACT

*Each drug or drug group below is commented on in descending order of impact or ranking when compared with other drugs. During 2008, indicator data pointed to a shift from cocaine to marijuana as the leading drug in Philadelphia; this shift continued in 2009. Marijuana constituted the plurality of primary treatment admissions, National Forensic Laboratory Information System (NFLIS) drug counts, and Adult Probation/Parole Department (APPD) urine/drug screens. Street prices were stable. Marijuana use was common by itself or in combination with PCP (phencyclidine) or cocaine. Alcohol was the second most frequently mentioned drug in treatment admissions data. Alcohol in combination with other drugs detected in mortality cases ranked second. Alcohol ranked seventh in the APPD study. It was most commonly reported as used along with or after cocaine and/or marijuana. Indications of the decline of cocaine occurred in several areas—proportion of treatment admissions, the aging of those entering treatment, number of mortality cases, and the proportion of APPD urine/drug screens. Cocaine was most commonly*

*used in combination with marijuana, heroin, or any opioid. Crack smoking continued as the preferred route of administration of cocaine. The street-level purity of heroin, at 55 percent in 2008, continued to be among the highest in the Nation. The standard bag prices remained stable, but the upper end of the price range for a bundle (10 bags) decreased. In 2009, heroin continued to rank fourth in treatment admissions, moved from second to third in deaths with the presence of drugs, and was third in the NFLIS data. In the APPD data, the increasing trend in “percent positive for total opioids” continued in 2009. Heroin was reported as most commonly used in combination with cocaine or any prescription opioid in 2009. Within the category other opioids, use was at medium levels with mixed indicator results, depending on the drug and the data source. In 2008, there were 136 treatment admissions for other opioids, but there were 513 admissions in 2009. “Any prescription opioid” was the plurality group at 39.3 percent of all deaths with presence of drugs in 2009, even though there were declines from 2008 in individual drugs in this group. The 2009 NFLIS data revealed increases in oxycodone, codeine, and hydrocodone items. Use of benzodiazepines, while lower than use of drugs discussed above, remained as an adjunct drug according to trend data. Indications of abuse appeared to be mixed in 2009. As a group, benzodiazepines ranked second in the mortality data, but 2009 was the first full year of implementation of increased testing for benzodiazepines by the Medical Examiner (ME)’s Office. Alprazolam was clearly the benzodiazepine of choice and ranked fifth in ME toxicology reports and in the NFLIS data. Benzodiazepines were most commonly used in combination with marijuana or prescription opioids in 2009. PCP indicators reflected medium levels of use and mixed trend data. Treatment admissions and APPD urinalysis positivity increased, while deaths with the presence of PCP declined. The most common cause of death with the presence of PCP changed to drug intoxication in 2009. PCP continued to rank sixth in NFLIS data. ME toxicology tests*

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*revealed the increased presence of antidepressant drugs in 2009, returning to the level reached in 2007. Treatment admissions for methamphetamine were rare and very low for other amphetamines in 2009.*

## INTRODUCTION

### Area Description

Philadelphia, the largest city in the State, is located in the southeastern corner of Pennsylvania. The 2000 U.S. census count of 1,517,550 Philadelphia residents was updated in July 2008 at 1,447,395, a decline of 4.6 percent (or more than 70,000 persons). The population is 53.2 percent female, 47.5 percent White only, 44.8 percent Black/African-American only, 5.7 percent Asian only, 0.6 other race only, and 1.4 percent two or more races. Persons identified as being of Hispanic or Latino origin (of any race) were estimated at 11.3 percent of the population. These demographic data are provided to assist the reader in understanding the comparative impact of substance use by various groups.

### Data Sources

This report focuses primarily on the city/county of Philadelphia and includes data from the sources shown below (unless otherwise noted, fiscal year [FY] refers to a year starting July 1 and ending the following June 30):

- **Treatment admissions data** for residents of Philadelphia County were provided by the Behavioral Health Special Initiative Client Data System (BHSI/CDS). The data represent mentions of use of different drugs by clients admitted to treatment from 2005 through 2009. This database covers the uninsured population in the treatment provider network.
- **Mortality data** were provided by the Philadelphia Medical Examiner (ME)'s Office. These data cover mortality cases with toxicology reports indicating the detection of drugs in persons who died in Philadelphia from January 1,

2000, through December 31, 2009. Cause of death designations changed effective January 1, 2009. The cases include persons who died from drug intoxication of one or multiple drugs, as well as persons who exhibited some substance presence but died from other causes. Alcohol cases are only reported in combination with one or more other drugs. The ME does not test for the presence of marijuana/THC (tetrahydrocannabinol)/cannabis.

- **Crime laboratory drug analysis data** came from National Forensic Laboratory Information System (NFLIS); data include analysis of drug samples tested by the Philadelphia Police Department Forensic Science Laboratory from 2007 through 2009.
- **Criminal justice urinalysis data** for adults who are in probation or parole status were derived from reports from the First Judicial District of Pennsylvania, Adult Probation/Parole Department (APPD), from January 1, 2006, through December 31, 2009. Data represent the first time persons were tested when placed in probation or parole status.
- **Heroin purity and price data** were provided by the Drug Enforcement Administration (DEA), Domestic Monitor Program (DMP), through 2008.
- **Drug prices** were provided by the U.S. Department of Justice, *National Drug Intelligence Center (NDIC), Mid-Year 2009 Report*. The NDIC report indicated that price information was derived from undercover purchases and informants.
- **Acquired immunodeficiency syndrome (AIDS) data** were provided by the Philadelphia Department of Public Health's AIDS Activities Coordinating Office on AIDS cases reported from November 1, 1981, to December 31, 2008.

In addition to these sources, this report draws on focus group discussions and conversations with former drug users currently enrolled in treatment programs and with current substance abusers.

## DRUG ABUSE PATTERNS AND TRENDS

Data collected relative to 2009 continued to reflect the declining use of cocaine that became evident in 2008. Marijuana has emerged as the most commonly used illicit drug. The four drugs of highest concern continued to be marijuana, alcohol, cocaine, and heroin. Together, these drugs constituted 84 percent of primary drug treatment admissions in 2009 (exhibit 1) and 81.7 percent of the secondary drugs of abuse (exhibit 2). These data indicate that most clients entering treatment are multiple drug users and that many frequently have difficulty identifying the primary drug. Drug use consequence data for 2009 also showed the increased impact of prescription opioids.

Following marijuana, alcohol, cocaine, and heroin, the drugs that have less use and “medium” impact included prescription opioids, benzodiazepines (particularly alprazolam), and PCP (phencyclidine). Drugs whose use was considered at low or very low levels included antidepressants, antipsychotics, and the “speed-type” drugs (amphetamines, MDMA [3,4-methylenedioxymethamphetamine], and methamphetamine).

The demographic characteristics of clients who entered treatment in 2009 revealed the overrepresentation of males, Blacks, and, to a lesser degree, Hispanics (exhibit 3a). Exhibit 3b shows a decrease in treatment admissions for clients younger than 21 for all admissions except alcohol from 2005 to 2009.

Exhibit 4a shows that in 2009, the average number of drugs detected in decedents with drug-positive toxicology reports was the lowest since 2003. Single-drug deaths remained relatively uncommon (exhibit 4b). In 2009, cocaine continued to be the most frequently detected single drug among decedents, but the leading drug group was “any prescription opioid” (exhibit 4c).

Exhibit 5 shows that the leading cause of death with the presence of drugs was drug intoxication and that this cause of death represented the highest average number of drugs per decedent.

In 2009, White male decedents ( $n=395$ ) outnumbered Black male decedents ( $n=326$ ), while White female decedents ( $n=155$ ) outnumbered Black female decedents ( $n=123$ ). Overall, Whites accounted for 53.7 percent of the deaths, and Blacks constituted 43.8 percent. Asians and others accounted for the remaining 2.4 percent.

The total number of drugs analyzed by the Philadelphia Police Forensic Science Laboratory and reported through the NFLIS was 34,929 (exhibit 6). By far, the two leading drugs identified were marijuana (37.5 percent,  $n=13,083$ ) and cocaine (33.5 percent,  $n=11,691$ ). Philadelphia will be looking more closely at certain drugs that appeared in the 2009 NFLIS data but had not yet appeared in other indicators as of this writing. One is buprenorphine (0.3 percent,  $n=121$ ), ranked 10th. The other is BZP (1-benzylpiperazine) (0.1 percent,  $n=51$ ), ranked 15th.

The Philadelphia APPD analyzed urine specimens from clients placed in probation or parole status. Results of the first testing of each client from 2005 through 2009 were close to 50 percent positive for any drug in the 10-drug panel (exhibit 7); females were slightly more likely to test positive than males.

### Marijuana

Within the last 2 years, marijuana has emerged as the leading illicit drug. Marijuana ranked first in primary drugs mentioned at admission to treatment (exhibit 1). The proportion of treatment admissions that was male in 2009 (82.9 percent) was fairly stable from 2007 (81.7). Blacks accounted for 76.9 percent of marijuana treatment mentions in 2009, followed by Whites (20.7 percent) and Asians and others (2.5 percent). Hispanics of any race represented 14.1 percent. Marijuana ranked second among secondary drugs of abuse mentioned at admission to treatment (exhibit 2) and constituted a combined 35.8 percent of all treatment admissions as either the primary or secondary drug of abuse. Clients who entered treatment for marijuana use/abuse were somewhat younger in 2009, as compared with 2005 (exhibit 3b).

Primary marijuana admissions constituted the majority of treatment admissions for clients younger than 21 (55.1 percent) and the plurality of treatment admissions for 21–30-year-olds (32.1 percent) and 31–40-year-olds (24 percent). Among clients older than 40, marijuana admissions (15.2 percent of this group) were third, behind cocaine (33.5 percent) and alcohol (31.8 percent).

NFLIS data revealed that marijuana/cannabis was detected in the highest number of laboratory tests in 2008 ( $n=11,420$ ) and in 2009 ( $n=13,083$ ) (exhibit 6). APPD urinalysis data, the first tests of adults placed on probation or parole, continued to detect the presence of marijuana in more samples than any other drug, with 60.2 percent of the tests that were positive for any drug having been positive for marijuana in 2009 (exhibit 7).

The NDIC reported the following prices for marijuana, as of June 30, 2009: \$800–\$5,000 per pound mid-level and \$100–\$400 per ounce and \$10–\$20 per 0.05–0.25 gram retail. No wholesale data were available. These prices were unchanged from the report from 6 months earlier.

Clients entering treatment for marijuana abuse/dependence most commonly reported the use of cocaine or PCP, either of which had been used along with marijuana in a blunt or separately. Comments by users continued to underscore the common practice of multiple drug use, either simultaneously or sequentially.

## Alcohol

Treatment admissions data (exhibit 1) revealed that alcohol ranked second from 2005 through 2007, third in 2008, then second in 2009. The proportion that was male in 2009 (79.0 percent) was stable from 2007 (77.8). Blacks accounted for 71.5 percent of alcohol treatment mentions in 2009, followed by Whites (25.7 percent) and Asians and others (2.8 percent). Hispanics of any race accounted for 11.1 percent. Alcohol ranked fifth among secondary drugs of abuse mentioned at admission to treatment (exhibit 2) and constituted a combined 25.1 percent of all treatment admissions as either the primary or secondary drug of abuse. Clients who entered treatment for alcohol use/abuse were

somewhat younger in 2009, as compared with 2005 (exhibit 3b). Primary alcohol was the second most common reason to enter treatment for clients younger than 21 (16.1 percent), 21–30-year-olds (18.5 percent), and clients older than 40 (31.8 percent). Alcohol ranked third among admissions of 31–40-year-olds (22.2 percent).

The number of deaths with the presence of alcohol in combination declined from 264 in 2007 to 223 in 2008 but increased slightly to 227, or 22.2 percent of all drug-positive decedents, in 2009 (exhibit 4a). This was the second lowest percentage since at least 1996.

APPD urinalysis data of adults on probation or parole in 2009 revealed the relatively low presence of alcohol at 4.8 percent of all positive test results (exhibit 7). Alcohol continued to rank seventh in the 10-drug APPD panel.

Clients entering treatment for alcohol abuse/dependence most commonly reported the use of marijuana and cocaine; among decedents, cocaine was most commonly detected along with alcohol.

## Cocaine/Crack

Although cocaine was unquestionably a significantly problematic drug of abuse in Philadelphia, the declines in several indicators of use and abuse that were noted in 2008 continued in 2009. Treatment admissions data (exhibit 1) shows cocaine as ranking first from 2004 through 2007, second in 2008, and third in 2009, behind marijuana and alcohol. The proportion that was male in 2009 (70.8 percent) was similar to what it was in 2007, 71.7 percent. Blacks accounted for 67.2 percent of cocaine treatment mentions in 2009, followed by Whites (29.0 percent) and Asians and others (3.9 percent). Hispanics of any race constituted 13.6 percent. Cocaine ranked first among secondary drugs of abuse mentioned at admission to treatment (exhibit 2) and represented a combined 32 percent of all treatment admissions as either the primary or secondary drug of abuse. The population entering treatment has been increasingly older than 40 since 2006, with 44.7 percent of all cocaine admissions being older than 40 in 2008 and 48.6 percent in 2009 (exhibit 3b).

While deaths with the presence of cocaine continued to rank first in 2009, the numbers of annual cases have been declining since 2006 (exhibit 4a). ME data show that cocaine was present in 311 of the 1,024 decedents in 2009 (30.4 percent of all drug-positive cases). This was the lowest percentage since at least 1996, with cocaine being detected in each of those years in no less than 40 percent of the cases, with the exception of 2003 (38.8 percent). When the cause of death was deemed drug intoxication, cocaine ranked third, at 62.7 percent of the cases (exhibit 8).

NFLIS data revealed that cocaine was detected in the second highest number of laboratory tests ( $n=11,304$ ) in 2008, accounting for 37.4 percent of all tests (exhibit 6). APPD urinalysis data of adults on probation or parole in 2009 revealed the presence of cocaine in 24.9 percent of all drug-positive tests, which reflected the continued decline of cocaine positivity (exhibit 7). Cocaine continued to rank second in the 10-drug APPD panel.

The NDIC reported the following prices for crack, as of June 30, 2009: \$800–\$1,500 per ounce wholesale and \$100 per gram and \$5–\$20 per rock retail. No mid-level price data for crack were available. The wholesale and retail prices for crack were unchanged from those reported for the previous 6 months. For cocaine hydrochloride (HCl) (powder), the NDIC reported prices of \$25,000–\$40,000 per kilogram wholesale and \$14,000–\$18,000 per pound at mid-level. Prices at both ends of the wholesale range increased more than 10 percent over the prior 6 months. Retail prices were \$10–\$20 per 0.1 gram, \$70–\$100 per gram, and \$650–\$1,200 per ounce. At the lower end of the retail range for an ounce of powder cocaine, the price decreased by more than 10 percent from the prior 6 months.

The most commonly reported drugs used in combination with cocaine were marijuana and heroin (as reported by clients entering treatment) and heroin or any prescription opioid (as detected along with cocaine in decedents).

## Heroin/Morphine

According to DEA DMP data, the average street-level purity of heroin in Philadelphia declined every year from 2000 (73.0 percent) through 2004 (51.6 percent) and stood at 55 percent in 2008 (exhibit 9). All of these purity levels were among the highest in the United States for many years. The price per milligram pure was reportedly \$0.71.

Treatment admissions data (exhibit 1) revealed that heroin consistently ranked fourth from 2005 (17.7 percent) through 2009 (13.4 percent). The proportion that was male in 2009 (70.5 percent) reflected a decline from 2007 (73.3 percent). Whites accounted for 65.2 percent of heroin treatment mentions in 2009, followed by Blacks (28 percent) and Asians and others (6.7 percent). Hispanics of any race constituted 17.9 percent. Heroin ranked third among secondary drugs of abuse mentioned at admission to treatment and represented a combined 15.8 percent of all treatment admissions as either the primary or secondary drug of abuse. At 41.4 percent in 2009, clients age 21–30 continued as the largest age group entering treatment for heroin, with all age groups remaining relatively stable since 2005 (exhibit 3b).

In 2009, deaths with the presence of heroin/morphine ( $n=221$ ) decreased by 10 percent from 2008 ( $n=246$ ) and ranked third behind cocaine and alcohol in combination (exhibit 4a). When the cause of death with drugs present was deemed drug intoxication, heroin/morphine ranked first among all drugs at 68.3 percent of such cases (exhibit 8).

NFLIS data revealed that heroin was detected in the third highest number of laboratory tests ( $n=4,187$ ) in 2009, representing 12.0 percent of the total sample (exhibit 6).

The NDIC reported the following wholesale prices for heroin, as of June 30, 2009: \$60,000–\$70,000 per kilogram. At the mid-level, heroin was priced at \$45,000–\$55,000 per pound and \$2,100–\$3,500 per ounce. Retail prices were \$10–\$20 per bag/glassine, \$70–\$130 per bundle of 10 bags/glassines, and \$60–\$150 per gram. The only price change reported for heroin was that the upper end of

the range for a retail bundle decreased by more than 10 percent from the price reported 6 months earlier.

APPD urinalysis data of adults on probation or parole do not distinguish heroin from all opiates/opioids. In 2009, opiates/opioids were detected in 13.6 percent of all positive tests, an increase over 2007 (10.4 percent) and 2008 (12.8 percent) (exhibit 6). Opiates/opioids ranked third in the APPD data in 2009.

Clients entering treatment for heroin abuse/dependence most commonly reported the use of cocaine; among decedents, any opioid was most commonly detected along with heroin.

### Other Opioids/Opiates

The nonmedical use of pharmaceutically produced opioid products continued to be reported by individuals entering treatment. Mentions of “Other Opiates/Synthetics” by clients admitted to treatment programs were comparatively low from 2006 to 2008 (a combined 0.7 percent), but they increased to 3.5 percent of all admissions ( $n=513$ ) in 2009 (exhibit 1). Of the 513 treatment admissions, 75.8 percent were male ( $n=389$ ), 68 percent were White, 27.7 percent were Black, 4.3 percent were Asians/others, and 10.5 percent were of Hispanic ethnicity. Most of the clients who mentioned other opiates/synthetics upon treatment entry were age 21–30 (exhibit 3b).

Clients entering treatment for abuse or dependence of other opioids/opiates most commonly reported benzodiazepines use. Opioid-positive decedents were most likely to have benzodiazepines in their systems. Deaths with the presence of “any opioid” exceeded all other drug groups in 2009 (exhibit 4c).

### Oxycodone

Oxycodone was detected in 1,090 decedents from 2000 through 2009, the fifth most frequently detected drug during that time period (exhibit 4a). The 2009 annual total, 159, was the second highest since 2000. In 2009, oxycodone was present in 15.5 percent of all drug-positive deaths.

The 2009 NFLIS data revealed that oxycodone was detected in the fourth highest number of labo-

ratory tests ( $n=1,391$ ), accounting for 4.0 percent of the drug-positive samples (exhibit 6).

Beginning in the latter half of 2009, focus group participants revealed the preference for lower dose oxycodone products over the higher dose ones due to users’ greater flexibility to manage the effects of these drugs and to conserve costs.

### Methadone

The reader is cautioned in interpreting data in this section. Among all information sources, it was uncertain whether methadone was used as directed by a physician for the management of pain, as a prescribed adjunctive measure in addictions treatment, and/or in an abusive or recreational manner.

The ME detected methadone in 113 or more cases in each year from 2004 to 2008 but in only 104 cases in 2009 (exhibit 4a). Deaths with the presence of methadone ranked seventh since 2000.

APPD urinalysis data of adults on probation or parole revealed a gradual decline in the percent positive for methadone, from 9.0 percent in 2005 to 7.0 percent in 2009 (exhibit 7). Some clients on probation or parole were enrolled in medication assisted treatment programs.

### Hydrocodone

Since 2005, the average annual number of detections of hydrocodone in mortality cases has been 62, ranging from 46 in 2007 to 69 in 2008; there were 64 such cases in 2009. Hydrocodone detections ranked 14th among all deaths with positive toxicology reports in the 16-year period 1994–2009; hydrocodone-positive cases ranked 18th in 2009. The 2009 NFLIS data revealed that hydrocodone was detected in the ninth highest number of drugs seized and analyzed by the Philadelphia laboratory ( $n=223$ ) (exhibit 6).

### Codeine

Medications that contain codeine were also commonly abused in Philadelphia. The ME detected codeine in at least 120 cases in each year from 2003 through 2008. There were only 93 codeine-positive cases in 2009 (exhibit 4a). Codeine



detections ranked 5th among all deaths with positive toxicology reports in the 16-year period 1994–2009; codeine-positive cases ranked 10th in 2009.

### *Propoxyphene*

Propoxyphene detections ranked 12th among all deaths with positive toxicology reports in the 16-year period 1994–2009; propoxyphene-positive cases ranked 27th in 2009.

## **Benzodiazepines**

Benzodiazepines, particularly alprazolam, continued to be used in combination with other drugs. Annual treatment admissions data declined from 1,165 in 2004 to 272 in 2007, but such admissions increased to 512 in 2008 and 694 in 2009, ranking fifth in treatment admissions at 4.7 percent of all drug mentions (exhibit 1). As a secondary drug of abuse, benzodiazepines ranked fourth (exhibit 2), and as either the primary or secondary drug of abuse, benzodiazepines were mentioned by 6.4 percent of all clients in 2009. Blacks accounted for 52.1 percent of primary treatment admissions in 2009, followed by Whites (43.8 percent) and Asians/others (4.1 percent). Hispanics of any race constituted 14.3 percent. In 2009, 59.5 percent of those entering treatment for benzodiazepines were age 21–30, an increase from 47.9 percent in 2005 (exhibit 3b).

The ME detected the presence of “any benzodiazepine” in 34.3 percent of all drug-positive decedents in 2009. Comparisons to earlier periods cannot be made because of increased testing protocols by the ME during 2008.

APPD urinalysis data of adults on probation or parole in 2009 revealed the presence of benzodiazepines in 12.7 percent of all drug-positive tests, slightly lower than 13.9 percent of the tests conducted in 2008 (exhibit 7).

Benzodiazepine abuse was reported by focus group participants as common among users of marijuana, while mortality data revealed the presence of benzodiazepines in combination with any opioid.

### *Alprazolam*

Among users of benzodiazepines, alprazolam has been the preferred drug since 2001. Alprazolam was detected in 200 decedents in 2009, making it the fifth most frequently detected drug (exhibit 4a). When the cause of death with drugs present was deemed drug intoxication, alprazolam ranked second among all drugs at 65 percent of such cases (exhibit 8). NFLIS data for 2009 revealed that alprazolam was detected in the fifth highest number of laboratory tests ( $n=1,238$ ), accounting for 3.5 percent (exhibit 6).

### *Diazepam*

Diazepam was detected in 118 decedents in 2009, making it the seventh most frequently detected drug during that time period (exhibit 4a). NFLIS data for 2009 revealed that diazepam was detected in the 11th highest number of laboratory tests ( $n=112$ ), accounting for 0.3 percent.

### *Clonazepam*

Clonazepam was detected in 40 decedents in 2009. NFLIS data for 2009 revealed that clonazepam was detected in the eighth highest number of laboratory tests ( $n=238$ ), accounting for 0.7 percent (exhibit 6).

## **PCP**

PCP (phencyclidine) is most commonly used as an additive to marijuana blunts. Mentions of PCP at admission to treatment increased from 2 percent of all admissions in 2005 and 2006 to 3.9 percent in 2009 (exhibit 1). The proportion that was male in 2009 (81.5 percent) reflected an increase from 78 percent in 2007. Blacks accounted for 70 percent of PCP treatment mentions in 2009, followed by Whites (22.9 percent) and Asians and others (7.1 percent). Hispanics of any race constituted 24.4 percent. PCP ranked sixth among secondary drugs of abuse mentioned at admission to treatment and accounted for a combined 5.2 percent of all treatment admissions as either the primary or secondary drug of abuse. In 2009, PCP users who entered treatment were less likely to be age 30 or younger

than in 2005 and more likely to enter when age 31–40 (exhibit 3b).

In the 10-year period 2000 through 2009, PCP was detected in 528 decedents, making it the 10th most frequently detected drug (exhibit 4a). In 2009, the primary cause of death among the 51 decedents was drug intoxication ( $n=22$ , 43.1 percent) (exhibit 8).

NFLIS data revealed that PCP was detected in the sixth highest number of laboratory tests in 2009 ( $n=907$ ), accounting for 2.6 percent of the total (exhibit 6). APPD urinalysis data of adults on probation or parole in 2009 revealed the presence of PCP in 11.3 percent of the drug-positive tests, continuing a slowly increasing proportion since 2006 (exhibit 7). PCP positivity continued to rank sixth in the 10-drug APPD panel.

### Antidepressants

In 2009, 26.1 percent of all deaths with the presence of drugs ( $n=267$ ) tested positive for at least one antidepressant. When the cause of death was drug intoxication, only two cases were single-drug deaths. The antidepressants that were most frequently detected by the ME were citalopram ( $n=99$ ), mirtazapine ( $n=36$ ), and nortriptyline ( $n=29$ ).

### Antipsychotics

ME toxicology reports revealed the presence of antipsychotic drugs. Although such cases sometimes included illicit substances, the relatively rare presence of more than one antipsychotic in a decedent leads to the hypothesis that these drugs are not abused. Rather, they have been taken as prescribed by dually diagnosed individuals. Exhibit 10 shows the relationships between the numbers of different antipsychotic drugs that were detected in a slightly more than equal number of decedents. Antipsychotics have not been identified as “street drugs.” The three drugs most frequently detected from 2005 through 2009 were quetiapine ( $n=156$ ), olanzapine ( $n=103$ ), and clozapine ( $n=27$ ). In 2009, the average number of drugs per antipsychotic drug-positive decedent was 5.32 drugs.

### Methamphetamine, Amphetamines, and MDMA

Methamphetamine and amphetamines remained a relatively minor problem in Philadelphia. Use of these drugs appeared to be confined to a small portion of the population. Treatment admissions data revealed a miniscule proportion of methamphetamine (0.01 percent) and amphetamine mentions (0.2 percent) in 2009 (exhibit 1).

ME data revealed that from 2006 through 2009, there were 49 detections of methamphetamine, 58 detections of (other) amphetamines, 32 detections of MDMA, and 31 detections of MDA (3,4-methylenedioxyamphetamine) in 111 decedents. In the 16-year period 1994 through 2009, the detection of these drugs ranked as follows: methamphetamine, 48th; amphetamine, 50th; MDMA, 65th; and MDA, 67th.

NFLIS data for 2009 revealed that out of 34,929 drug-positive results, MDMA ranked 13th ( $n=79$ ), methamphetamine ranked 14th ( $n=53$ ), amphetamine ranked 17th ( $n=35$ ), and MDA ranked 29th ( $n=5$ ). Together, these detections accounted for less than 0.5 percent of the NFLIS results.

APPD urinalysis data of adults on probation or parole in 2009 revealed the presence of amphetamines in 0.8 percent of the tests, which continues to place such drugs last in the 10-drug APPD panel (exhibit 7).

The NDIC reported the following prices for methamphetamine (“ice”), as of June 30, 2009: \$1,500–\$2,500 per ounce wholesale, \$350–\$500 per 0.125 ounce (an “eighth”) mid-level, and \$100 per gram retail. For methamphetamine powder, the prices were \$8,000–\$20,000 per pound wholesale, \$700–\$1,200 per ounce at mid-level, and \$125–\$175 per 0.125 ounce (an “eighth”) retail. MDMA sold for \$3 per tablet wholesale and \$8–\$30 per tablet retail. No mid-level price data were available for MDMA. All of the stimulant prices noted above were unchanged from the previous 6 months.

## **INFECTIOUS DISEASES RELATED TO DRUG ABUSE**

As of December 31, 2008, Philadelphia recorded 19,172 cumulative AIDS cases among adults. Among those cases, 16.8 percent involved injection drug users and sharers of infected needles. The rate of HIV diagnosis associated with sharing infected needles has been declining (exhibit 11).

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**Exhibit 1. Number of Primary Drugs of Abuse Mentioned at Admission to Treatment by Uninsured Persons, in Philadelphia: 2005 Through 2009**

<b>Drugs Mentioned</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>
Marijuana	3,120	3,647	3,384	3,592	3,826
Cocaine	5,151	4,701	3,859	3,439	3,182
Alcohol	3,835	3,893	3,406	3,378	3,489
Heroin	3,107	3,578	2,775	2,503	1,994
Benzodiazepines	626	307	272	512	694
Other Sedatives/Hypnotics	489	968	692	463	290
PCP (Phencyclidine)	347	368	325	458	583
Other Hallucinogens	106	261	192	169	163
Other Opiates/Synthetics	483	105	87	136	513
Other Amphetamines	29	79	49	46	33
Inhalants	9	10	11	8	3
Barbiturates	26	1	1	3	21
Methamphetamine	33	2	2	2	16
Other Tranquilizers	14	1	1	0	10
Over-the-Counter	3	--	5	--	3
Other (Not Listed)	160	140	84	32	44
<b>Total</b>	<b>17,538</b>	<b>18,061</b>	<b>15,145</b>	<b>14,741</b>	<b>14,864</b>

SOURCE: Behavioral Health Special Initiative Client Data System

**Exhibit 2. Number of Secondary Drugs of Abuse Mentioned at Admission to Treatment by Uninsured Persons, in Philadelphia: 2009**

<b>Drugs Mentioned</b>	<b>2009</b>
Cocaine	1,586
Marijuana	1,500
Heroin	360
Benzodiazepines	266
Alcohol	232
PCP (Phencyclidine)	200
Other Sedatives/Hypnotics	130
Percocet®/Percodan®	74
Other Hallucinogens	60
Oxycodone/OxyContin®	46
Barbiturates	11
Prescription Methadone	9
Amphetamines	7
Designer/Club Drugs	6
Nonprescription Methadone	5
All Others	8
<b>Total</b>	<b>4,500</b>

SOURCE: Behavioral Health Special Initiative Client Data System

Exhibit 3a. Profiles of Clients Who Entered Treatment, in Philadelphia: 2009

	Number of Treatment Admissions	Percent of Treatment Admissions	Percent Representation According to the Census
<b>Gender</b>			
Male	11,442	<b>77.0</b>	46.8
Female	3,422	23.0	53.2
<b>Race/Ethnicity</b>			
Black	9,230	<b>62.1</b>	44.8
White	5,054	34.0	47.5
Asian/Other Race(s)	580	3.9	7.7
Unknown/Unrecorded	0	--	
Hispanic (Any Race)	2,096	<b>14.1</b>	11.3
<b>Age</b>			
Younger than 21	604	4.1	28.7 (under 20)
21–25	3,120	<b>21.0</b>	7.5 (20-24)
26–30	2,811	<b>18.9</b>	6.4 (25-29)
31–35	1,944	<b>13.1</b>	6.4 (30-34)
36–40	1,766	<b>11.9</b>	7.0 (35-39)
41–45	1,930	<b>13.0</b>	7.1 (40-44)
46 and Older	2,689	18.1	36.9 (45 or older )
<b>Route of Administration</b>			
Smoking	6,631	44.6	
Oral/Other/Multiple	5,006	33.7	
Injection/Skin Popping	955	6.4	
Intranasal	526	3.5	
Not Reported	1,746	11.7	

Note: Overrepresented populations are in bold.

SOURCE: Behavioral Health Special Initiative Client Data System

**Exhibit 3b. Percentage of Treatment Admissions Among Uninsured Persons, by Drug and Age Group, in Philadelphia: 2005<sup>d</sup> and 2009**

Drug		<21	21–30	31–40	>40
Marijuana	2005	9	44	27	19
	2009	8.7	49.7	23.3	18.3
Alcohol	2005	2	25	32	42
	2009	2.8	31.5	23.6	42.1
Cocaine	2005	2	23	36	38
	2009	1.2	22.7	27.5	48.6
Heroin	2005	4	42	29	25
	2009	1.9	41.4	27.6	29.1
Other Opiates/Synthetics <sup>d</sup>	2009	4.1	61.4	20.3	14.2
Benzodiazepines	2005	9.2	47.9	27.6	15.2
	2009	5.0	59.5	21.2	14.3
PCP (Phencyclidine)	2005	8.6	66.3	17.6	7.5
	2009	3.4	59.7	30.0	6.9

<sup>d</sup>For other opiates, 2005 data were not available.

SOURCE: Behavioral Health Special Initiative Client Data System

**Exhibit 4a. Mortality Cases with the Presence of the 10 Most Frequently Detected Drugs by the Medical Examiner, in Philadelphia: 2000 Through 2009**

ME-Identified Drugs	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	Total
Cocaine	321	300	270	326	399	423	552	389	338	311	3,629
Heroin/Morphine	332	316	275	208	214	215	337	228	246	221	2,592
Alcohol in combination	197	185	153	290	219	323	386	264	223	227	2,467
Diphenhydramine	33	53	42	116	129	113	179	170	172	201	1,208
Oxycodone	49	53	68	81	103	119	148	127	183	159	1,090
Codeine	19	45	57	120	120	139	191	153	152	93	1,089
Methadone	36	46	55	79	132	113	139	116	120	104	940
Alprazolam <sup>d</sup>	16	31	27	45	72	68	129	121	172	200	881
Diazepam <sup>d</sup>	46	56	28	66	88	77	117	89	120	118	805
PCP	48	45	51	58	28	42	74	70	61	51	528
<b>Total Deaths with the Presence of Drugs</b>	<b>680</b>	<b>661</b>	<b>593</b>	<b>841</b>	<b>888</b>	<b>904</b>	<b>1153</b>	<b>964</b>	<b>1,040</b>	<b>1,024</b>	<b>8,748</b>
<b>Total Drugs Mentioned</b>	<b>1,637</b>	<b>1,857</b>	<b>1,589</b>	<b>2,672</b>	<b>3,330</b>	<b>3,336</b>	<b>4,797</b>	<b>3,531</b>	<b>3,908</b>	<b>3,735</b>	<b>30,392</b>
<b>Avg. Number of Drugs per Death</b>	<b>2.41</b>	<b>2.81</b>	<b>2.68</b>	<b>3.18</b>	<b>3.75</b>	<b>3.69</b>	<b>4.16</b>	<b>3.66</b>	<b>3.76</b>	<b>3.65</b>	<b>3.47</b>

<sup>d</sup>Increased testing protocols for benzodiazepines were instituted July 2008.

SOURCE: Philadelphia Medical Examiner's Office

**Exhibit 4b. Number and Proportion of Single-Drug Mortality Cases Detected by the Medical Examiner, in Philadelphia: 2003–2009**

	2003	2004	2005	2006	2007	2008	2009
Single-Drug Deaths	126	114	102	133	158	160	145
Percent of All Deaths	15.0	12.8	11.3	11.5	16.4	15.4	14.2

SOURCE: Philadelphia Medical Examiner's Office

**Exhibit 4c. Nine Most Commonly Detected Substances/Drug Categories Among Mortality Cases, as Reported by the Medical Examiner, by Percent, in Philadelphia: 2009**

Substance/Drug Category	Percent Present Among All Cases
Any Prescription Opioid	39.3
Any Benzodiazepine	34.3
Cocaine	30.4
Any Antidepressant	26.1
Alcohol in combination	22.2
Heroin/Morphine	21.6
Any Antipsychotic	5.7
PCP (Phencyclidine)	5.0
Any Speed-Type Drug	3.7

SOURCE: Philadelphia Medical Examiner's Office

**Exhibit 5. Percent of Deaths with Positive Toxicology Reports for Drugs by Cause and Average Number of Drugs Detected by Cause, as Determined by the Medical Examiner (ME), in Philadelphia: 2009<sup>†</sup>**

ME-Identified Cause	Percent	Average Number of Drugs
Drug intoxication	39.5	4.74
Homicide	13.3	2.46
Suicide	7.4	2.78
Natural	29.7	3.23
Accidental	10.2	2.84
<b>Total</b>		<b>3.65</b>

<sup>†</sup>The cause of death designations were changed, effective 1/1/2010. Comparisons to earlier periods cannot be made.

SOURCE: Philadelphia Medical Examiner's Office

**Exhibit 6. Top 10 Drugs Detected by NFLIS, in Philadelphia: 2009**

<b>Drug</b>	<b>Count</b>	<b>Percent</b>
Marijuana	13,083	37.5
Cocaine	11,691	33.5
Heroin	4,187	12.0
Oxycodone	1,391	4.0
Alprazolam	1,238	3.5
PCP (Phencyclidine)	907	2.6
Codeine	251	0.7
Clonazepam	238	0.7
Hydrocodone	223	0.6
Buprenorphine	121	0.3
All others	1,599	4.6
<b>Total Count</b>	<b>34,929</b>	<b>100.0</b>

SOURCE: NFLIS, DEA

**Exhibit 7. Number of Drug-Positive Urinalysis Results of Adults in Probation or Parole Status Who Were Tested for the First Time and Percent Positive for any Drug, in Philadelphia: 2005 Through 2009**

<b>Drug/Drug Group</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>
Marijuana	1,437	1,487	1,741	1,904	1,406
Cocaine	1,072	1,091	1,176	1,148	581
Benzodiazepines	297	285	338	477	296
Methadone	243	222	239	258	164
Opioids	340	300	325	441	317
PCP (Phencyclidine)	178	208	301	354	263
Alcohol	145	152	169	189	113
Barbiturates	53	44	30	50	27
Amphetamines	19	13	23	35	18
Propoxyphene	0	0	0	12	26
<b>Total persons tested</b>	<b>5,663</b>	<b>5,702</b>	<b>6,077</b>	<b>6,835</b>	<b>4,752</b>
<b>Total positive persons</b>	<b>2,704</b>	<b>2,757</b>	<b>3,133</b>	<b>3,437</b>	<b>2,337</b>
<b>Percent that tested positive</b>	<b>47.7</b>	<b>48.4</b>	<b>51.6</b>	<b>50.3</b>	<b>49.2</b>

Note: Some people tested positive for more than one drug.

SOURCE: Adult Probation and Parole Department, First Judicial District, Philadelphia



**Exhibit 8. Number and Percent of the Presence of Selected Drugs in Decedents Whose Cause of Death Was Drug Intoxication as Determined by the Philadelphia Medical Examiner, in Philadelphia: 2009**

Drug	All Causes N	Drug Intoxication N	Drug Intoxication Percent
Heroin/morphine	221	151	68.3
Alprazolam	200	130	65.0
Cocaine	311	195	62.7
Oxycodone	159	94	59.1
Methadone	104	61	58.7
Quetiapine	40	19	47.5
PCP (Phencyclidine)	51	22	43.1
Alcohol in combination	227	89	39.2
Citalopram	99	38	38.4

SOURCE: Philadelphia Medical Examiner's Office

**Exhibit 9. Average Percentage<sup>1</sup> of Purity of Street-Level Heroin in Philadelphia: 1998 Through 2008**

Year	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Purity	71	72	73	71	66	60	52	55	55	56	55

<sup>1</sup>Percentages rounded.

SOURCE: Drug Enforcement Administration, Domestic Monitor Program

**Exhibit 10. Number of Antipsychotic Drugs Detected in Decedents Versus Unique Cases with at Least One Antipsychotic Drug, in Philadelphia: 2005 Through 2009**

	2005	2006	2007	2008	2009	Total
Quetiapine	16	25	29	49	37	156
Olanzapine	34	22	19	19	9	103
Clozapine	9	5	5	2	6	27
Haloperidol	5	3	2	2	1	13
All others	2	7	5	3	8	25
<b>Total detections</b>	<b>66</b>	<b>62</b>	<b>60</b>	<b>75</b>	<b>61</b>	<b>324</b>
<b>Unique cases</b>	<b>62</b>	<b>59</b>	<b>57</b>	<b>74</b>	<b>58</b>	<b>310</b>

SOURCE: Philadelphia Medical Examiner's Office

**Exhibit 11. Percent, by Exposure Category, of HIV and AIDS Diagnoses, in Philadelphia: 2006 Through 2008**

	HIV			AIDS		
	2006	2007	2008	2006	2007	2008
IDU <sup>1</sup>	19.3	16.9	11.7	23	21.9	16.8
MSM <sup>2</sup> and IDU	1.9	2.1	1.2	2.1	1.2	1.9
MSM	26.8	30.1	30.7	26.1	27.5	26.9
Heterosexual Contact	51.5	50.4	53.5	48.4	49.1	52.7
No Identified Risk	0.1	0.1	1.9	0.2	0.1	0.8
Pediatric	0.1	0	0.9	0	0	0.9
<b>Total Adult Cases</b>	<b>1,275</b>	<b>1,253</b>	<b>1,163</b>	<b>750</b>	<b>725</b>	<b>497</b>

<sup>1</sup>IDU=injection drug user.

<sup>2</sup>MSM=men who have sex with men.

SOURCE: Philadelphia Department of Public Health, AIDS Activities Coordinating Office

# Drug Abuse Patterns and Trends in Phoenix and Arizona: 2009

James K. Cunningham, Ph.D.<sup>†</sup>

## ABSTRACT

*Maricopa County (Phoenix area) cocaine-related hospital admissions decreased in 2009, continuing a decline that began in 2007. Declines also occurred in cocaine treatment admissions, cocaine-positive urinalysis tests of arrestees, and counts of cocaine items submitted to the National Forensic Laboratory Information System (NFLIS). Amphetamine-related hospital admissions were flat during 2008 and the first half of 2009, but rose slightly in the second half of 2009 (most amphetamine-related hospital admissions are probably related to methamphetamine, a type of amphetamine). Declines also occurred in methamphetamine treatment admissions, methamphetamine-positive urinalysis tests of arrestees, and counts of methamphetamine items submitted to NFLIS. In contrast to cocaine- and amphetamine-related hospital admissions, heroin/opioid-related hospital admissions rose in 2009, extending an upward trend that has continued since 2000 (heroin/opioid-related hospital admissions include admissions related to heroin and other opioids). Heroin treatment admissions and counts of heroin items submitted to NFLIS also increased. In keeping with hospital admission patterns in Maricopa County, cocaine-related hospital admissions declined and heroin/opioid-related hospital admissions increased in Pima County (Tucson area) and Arizona's rural counties. However, in contrast to Maricopa County, Pima County and Arizona's rural counties experienced slight declines in amphetamine-related*

*hospital admissions during the latter half of 2009. In the State of Arizona during 2005–2009, the median age of cocaine-, amphetamine-, and heroin/opioid-related hospital admissions for American Indians was lower than that for Latinos, Whites, and African-Americans. Among Latino, White, and African-American cocaine-related hospital admissions, males outnumbered females by about 2:1, but American Indian males and females were approximately evenly represented. Among Latino, White, and African-American amphetamine-related admissions, males outnumbered females, but the opposite was the case for American Indians. Heroin seizures outside Arizona but traced back to Phoenix indicated that white heroin was being trafficked through Phoenix (however, there is no indication it was sold there at the retail level). Signature analysis of “Phoenix-traced” white heroin has been classified as either “South American” or “Unknown.” The Unknown classification suggests that some white heroin traced back to Phoenix may be Mexican produced. However, black tar heroin from Mexico remains the dominant form of heroin used in Arizona. MDMA (3,4-methylenedioxymethamphetamine) indicators were low. Emergent human immunodeficiency virus (HIV)/acquired immunodeficiency syndrome (AIDS) rates related to injection drug use appeared to have declined slowly but steadily over the past several years.*

## INTRODUCTION

### Area Description

Arizona's population increased 28.6 percent from 2000 to 2009, from 5,130,607 persons to 6,595,778 (U.S. Census). Maricopa County, which includes the State's capital, Phoenix, is Arizona's primary population center, with an estimated 4,023,132 residents in 2009, an increase of 31.0 percent since 2000. It ranks fourth in population among all U.S. counties. In Maricopa County in 2008, 58.8 percent of the population were White (non-Latino), 31.0 percent were Latino, 4.9 percent were African-American, 3.0 percent were Asian, and 2.2 percent were American Indian/Alaska

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Native. Maricopa County is located in the central part of the State and includes more than 20 cities/towns, as well as multiple Indian reservations, the largest of which are the Salt River Pima Maricopa Indian Community and the Gila River Indian Community.

Pima County—which is located south of Phoenix, borders Mexico, and includes Tucson—is the second largest population center in Arizona (population estimate: 1,020,200 in 2009). In this report, counties other than Maricopa and Pima are grouped together and referred to as the Arizona rural counties.

### Data Sources

This report is based on the most recent available data obtained from the following sources:

- **Treatment admissions data** came from the Arizona Department of Health Services (ADHS), Division of Behavioral Health Services (DBHS), Division of Clinical Recovery Services, Bureau of Grants Management, Training and Administration, Evaluation Unit. Treatment data include data for clients age 18 and older.
- **Hospital admissions (inpatient) data** came from analyses conducted by the University of Arizona, Department of Family and Community Medicine, using hospital discharge records from the Arizona Hospital Discharge Data System operated by the Arizona Department of Health Services.
- **Mortality data** were obtained from the Drug Abuse Warning Network (DAWN).
- **Law enforcement data**, including price information and drug trafficking patterns, were obtained from the Drug Enforcement Administration (DEA) Phoenix Field Division.
- **Self-reported youth drug use data** were obtained from the Center for Disease Control's Youth Behavioral Risk Surveillance System (YBRSS).
- **Forensic drug analysis data** were obtained

from the National Forensic Laboratory Information System (NFLIS), DEA.

- **Arrestee data** were provided by the Arizona Arrestee Reporting Network.
- **Human immunodeficiency virus (HIV) and acquired immunodeficiency syndrome (AIDS) data** were obtained from the ADHS, Bureau of Epidemiology and Disease Control, Office of HIV/ STD Services, *HIV/AIDS Annual Report, February 2010*.
- **Population data** were obtained from the U.S. Census Bureau.

## DRUG ABUSE PATTERNS AND TRENDS

### Cocaine/Crack

In Maricopa County from 2007 to 2009, cocaine treatment episodes declined as a percentage of total drug treatment episodes (exhibit 1). Cocaine-related inpatient hospital admissions in Maricopa County (Phoenix area) also declined from 2007 to 2009, from 3,055 in 2007 to 1,901 in 2009, a decrease of 37.8 percent (exhibit 2). In 2009, cocaine-related hospitalizations were substantially lower than heroin/opioid-related and amphetamine-related admissions (most amphetamine-related hospital admissions involve methamphetamine, a type of amphetamine).

Declines also occurred in cocaine-positive urinalysis tests of arrestees (exhibits 3 and 4), and in counts of cocaine items submitted to NFLIS (exhibit 5). Cocaine was the third most common item reported by NFLIS for Maricopa County. Cocaine mentions among drug-related deaths decreased in 2008, but nevertheless cocaine was still one of the three most common drugs mentioned in such deaths (exhibit 6).

In 2009, approximately 11.5 percent of high school students in Arizona reported using cocaine sometime during their lifetime (exhibit 7). Reported lifetime use of cocaine among high school students declined in 2009, from 14.4 percent in 2007, a statistically significant decline.

Cocaine-related inpatient hospital admissions declined from 2007 to 2009 in Pima County (Tucson area), from 3,071 in 2007 to 1,881 in 2009, a decrease of 38.7 percent (exhibit 8). Cocaine-related hospital admissions declined during 2007–2009 in Arizona’s rural counties as well, from 220 in 2007 to 128 in 2009, a decrease of 41.8 percent (exhibit 9).

In the State of Arizona during 2005–2009, the median age of American Indians hospitalized for cocaine-related problems was lower than that of Latinos, Whites, and African-Americans (exhibit 10). Among cocaine-related hospital admissions, Latino, White, and African-American males outnumbered females by about 2:1, but American Indian males and females were approximately evenly represented (exhibit 11).

The price for an ounce of powder cocaine was approximately \$600; the price for an ounce of crack cocaine was approximately \$600–\$800. Price estimates in this report are based on relatively small numbers of seizures/acquisitions and should be considered with caution.

Historically, one method of smuggling cocaine into Arizona has been by loads of frozen shrimp. In March 2009, there was a ban on shrimp fishing in the waters off the Sinaloan and Sonoran coasts. The ban, however, was lifted in September 2009. There is evidence that some passenger vehicles in Phoenix have been loaded with cocaine, then placed on car haulers and transported to port areas in Florida, California, or Texas. At the ports, the vehicles are placed in shipping containers for delivery to Germany, and then on to Bulgaria.

## Heroin

ADHS/DBHS data indicated that primary heroin treatment episodes, as a percentage of total treatment admissions, increased from 10 percent in 2007, to 14 percent in 2008, to 17 percent in 2009 (exhibit 1). Heroin/opioid-related hospital admissions in Maricopa County increased in 2009, extending an upward trend that has generally continued since 2000 (exhibit 2). There were 4,871 heroin/opioid hospital admissions in 2009, compared with 3,981 admissions in 2007, an increase of 22.4 percent. Heroin/opioid admissions included admissions

related to heroin and admissions related to other opioids, for example, oxycodone and hydrocodone. Hospital data coding is such that specific types of opioids cannot be separated for analysis.

The number of heroin items reported to NFLIS increased in 2009 (exhibit 5). Heroin was the fourth most common drug submitted to NFLIS.

In Arizona during 2005–2009, the median age of American Indians hospitalized for heroin/opioid-related problems was lower than that of Latinos, Whites, and African-Americans (exhibit 12). In Arizona during 2005–2009, White males and females were evenly represented among heroin/opioid-related hospital admissions (exhibit 13). In contrast, males outnumbered females among Latinos, American Indians, and African-Americans.

Heroin/opioid-related hospital admissions rose from 2007 to 2009 in Pima County, from 1,938 in 2007 to 2,274 in 2009, an increase of 17.3 percent (exhibit 8). Heroin/opioid-related hospital admissions also rose from 2007 to 2009 in Arizona’s rural counties, from 699 in 2007 to 836 in 2009, an increase of 19.6 percent (exhibit 9).

The price of an ounce of heroin was about \$800. Heroin seizures outside Arizona but traced back to Phoenix indicated that white heroin was being trafficked through Phoenix (there is no indication it was sold there at the retail level). Signature analysis of “Phoenix-traced” white heroin has been classified as either “South American” or “Unknown.” The Unknown classification suggests that some white heroin traced back to Phoenix may be Mexican produced. However, black tar heroin from Mexico remained the dominant form of heroin used in Arizona.

## Other Opiates/Narcotics

In 2009, approximately 4 percent of the treatment episodes in Maricopa County had opioids other than heroin/morphine identified as the primary drug of abuse (exhibit 1). In 2009, oxycodone and hydrocodone were the fifth and sixth most common items, respectively, reported to NFLIS (exhibit 14). The street price of OxyContin® pills ranged from \$15 to \$80 per tablet. The street price of hydrocodone pills ranged from \$2 to \$5 per tablet.

## Methamphetamine/Amphetamines

The percentage of treatment episodes associated with methamphetamine declined from 29 percent in 2007, to 25 percent in 2008, to 21 percent in 2009 (exhibit 1). However, methamphetamine treatment admissions outnumbered those associated with any of the other illicit drugs, including cocaine, marijuana, and heroin/ morphine.

After declining in 2007 and again in the first half of 2008, amphetamine-related hospital admissions remained flat for a year and then rose slightly in the second half of 2009 (exhibit 2). Despite this late rise, total amphetamine-related hospital admissions in 2009 ( $n=3,213$ ) were lower than in 2007 ( $n=3,737$ ) by 14.0 percent (most amphetamine-related hospital admissions involved methamphetamine, a type of amphetamine). Declines also occurred in methamphetamine treatment admissions (exhibit 1) and in counts of methamphetamine items submitted to NFLIS (exhibit 5). Methamphetamine-positive urine tests of arrestees changed little in 2009, compared with 2008, but were lower than those in 2007 (exhibits 3 and 4).

Methamphetamine was the second most common drug item submitted to NFLIS (exhibit 5). Stimulants (including methamphetamine but excluding cocaine) were one of the five most common drugs mentioned in drug-related deaths (exhibit 6). In the second half of 2009, the price of an ounce of methamphetamine was estimated to be approximately \$850–\$1200.

Amphetamine-related hospital admissions declined during 2007–2009 in Pima County, from 1102 in 2007 to 979 in 2009, a decrease of 11.2 percent (exhibit 8). Amphetamine-related hospital admissions declined during 2007–2009 in Arizona's rural counties as well, from 870 in 2007 to 568 in 2009, a decrease of 34.7 percent (exhibit 9).

Approximately 5.7 percent of high school students in Arizona reported in 2009 using methamphetamine sometime during their lifetime, a decrease compared with surveys in previous years. Declines from 2003 (10.6 percent), 2005 (8.8 percent), and 2007 (8.6 percent) were all statistically significant (exhibit 7).

In Arizona during 2005–2009, the median age of amphetamine-related admissions was lower for American Indians than for Latinos, Whites, and African-Americans (exhibit 15). Among these latter three ethnic groups, male admissions outnumbered female admissions; but the opposite was the case for American Indians (exhibit 16)

Clandestine laboratory incidents in Arizona reported to the National Clandestine Laboratory Database declined sharply from 2001 through 2007, and then remained relatively low and flat through 2009 (exhibit 17). There were reports that pseudoephedrine (a precursor chemical used to produce methamphetamine) was being acquired through “smurfing” operations in the Phoenix metropolitan area and then transported to California laboratories for methamphetamine production. The smurfers are paid in part with the finished product.

## Marijuana

Fifteen percent of treatment episodes in 2009 were associated with marijuana, making it the fourth most common drug associated with treatment (exhibit 1). Approximately 42.8 percent of high school students in Arizona in 2009 reported using marijuana sometime during their lifetime, an amount similar to that reported in 2005 and 2007 (exhibit 7). Marijuana/cannabis was the most common drug item submitted to NFLIS in 2009 (exhibit 5). The retail price of an ounce of marijuana was about \$60 during the second half of 2009.

## Club Drugs

Treatment admissions associated with MDMA/ecstasy (3,4-methylenedioxymethamphetamine) and LSD (lysergic acid diethylamide) were relatively uncommon among treatment admissions in 2009 (such admissions were included in the “other” category of exhibit 1). Ninety-one items containing MDMA were reported to NFLIS in 2009 (exhibit 14), an increase over the previous 2 years. Three identified as LSD were submitted to NFLIS in 2009; no LSD items were identified in 2008.

## PCP

Indicators for PCP (phencyclidine) were low—only 10 items containing PCP were reported to NFLIS in 2009, down from 19 in 2008 (note that PCP items are not shown in exhibit 5). Among drug deaths, PCP was grouped with LSD and miscellaneous hallucinogens in a category labeled “Hallucinogens.” Seven deaths were reported for this category in 2007; no deaths were reported in 2008.

## Benzodiazepines/Barbiturates

Benzodiazepines were the fourth most common drug mentioned in drug-related deaths (exhibit 6). Only three barbiturates (butalbital) were reported to NFLIS in 2009.

## Other Drugs

No BZP (1-benzylpiperazine) items were reported to NFLIS in 2007. Eleven BZP items were reported in 2008, and 18 were reported in 2009 (exhibit 14).

Forty-seven items containing carisoprodol were reported to NFLIS in 2008; 63 were reported in 2009.

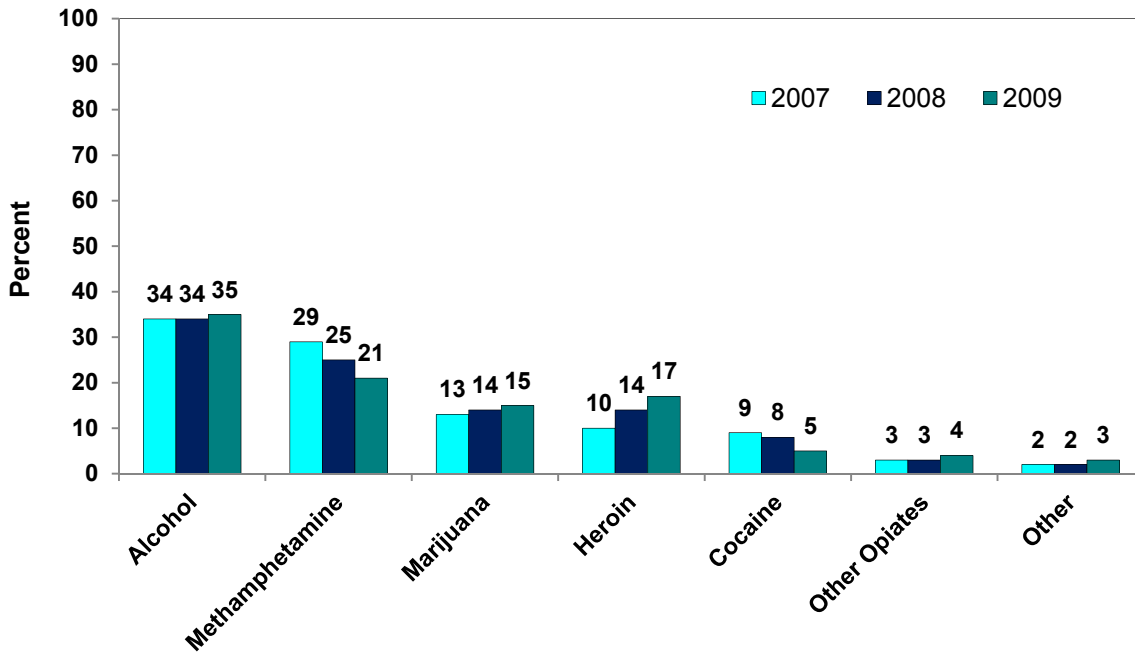
## INFECTIOUS DISEASES RELATED TO DRUG ABUSE

### HIV/AIDS

In Arizona, 5-year emergent HIV/AIDS rates (per 100,000 per year) related to injection drug use appeared to have declined slowly but steadily over the past several years (exhibit 18).

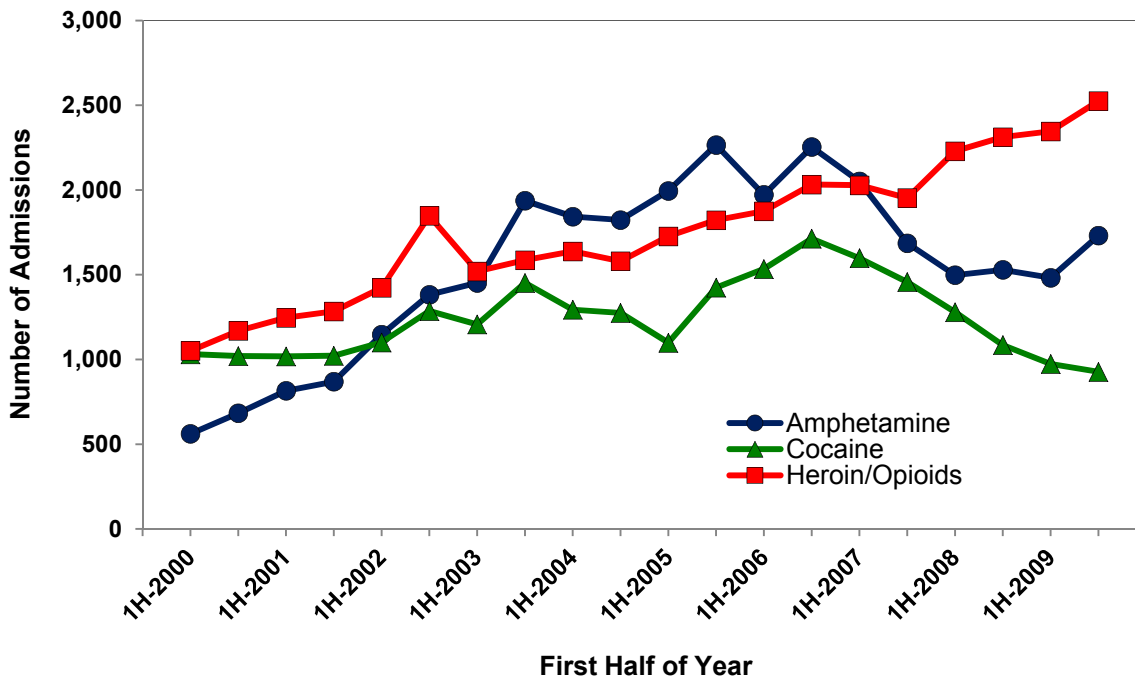
*For inquiries concerning this report, contact James K. Cunningham, Ph.D., Department of Family and Community Medicine, College of Medicine, The University of Arizona, 1450 N. Cherry Avenue, Tucson, AZ 85719, Phone: 520-615-5080, Fax: 520-577-1864, E-mail: [jkcun-nin@email.arizona.edu](mailto:jkcun-nin@email.arizona.edu).*

**Exhibit 1. Treatment Episodes by Primary Substance Used, by Percentage, Maricopa County (Phoenix Area): 2007–2009**



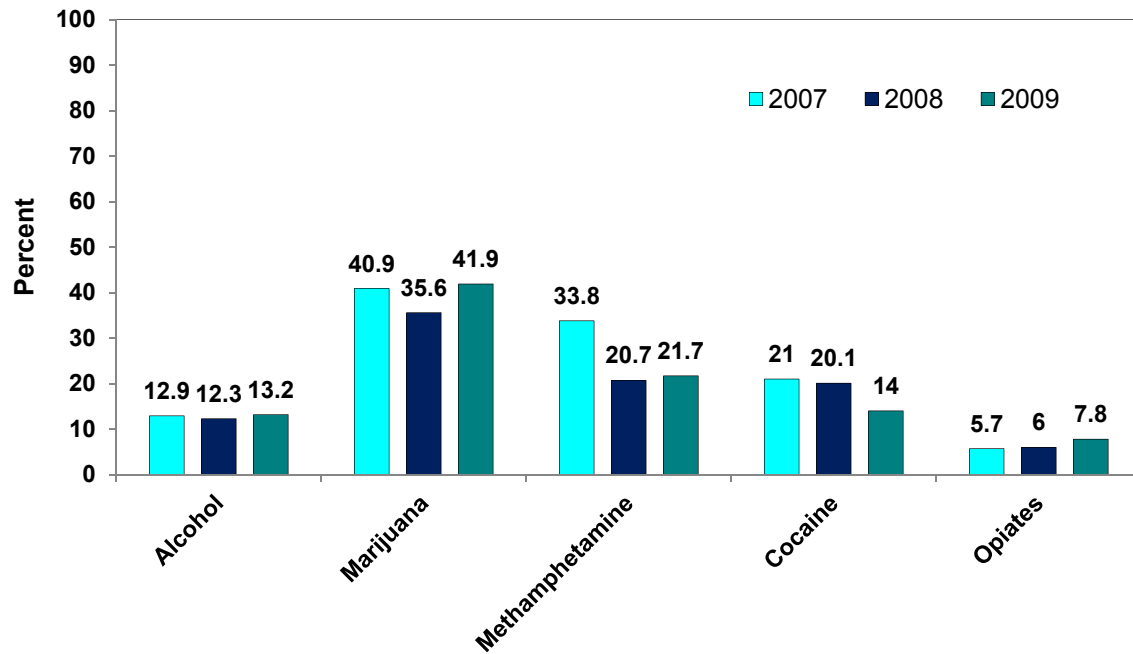
SOURCE: Arizona Department of Health Services

**Exhibit 2. Number of Amphetamine, Cocaine, and Heroin/Opioid-Related Hospital Admissions, Maricopa County (Phoenix Area): First Half of Year (1H) Only, 2000–2009**

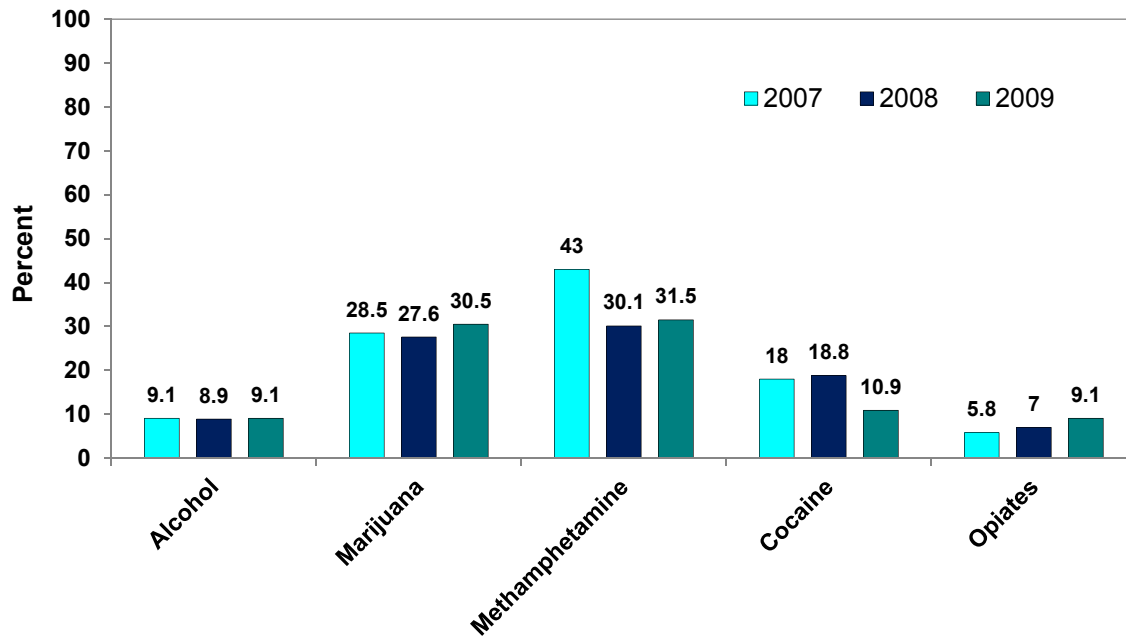


SOURCE: Arizona Hospital Discharge Data System, Arizona Department of Health Services, analysis by the University of Arizona Department of Family and Community Medicine



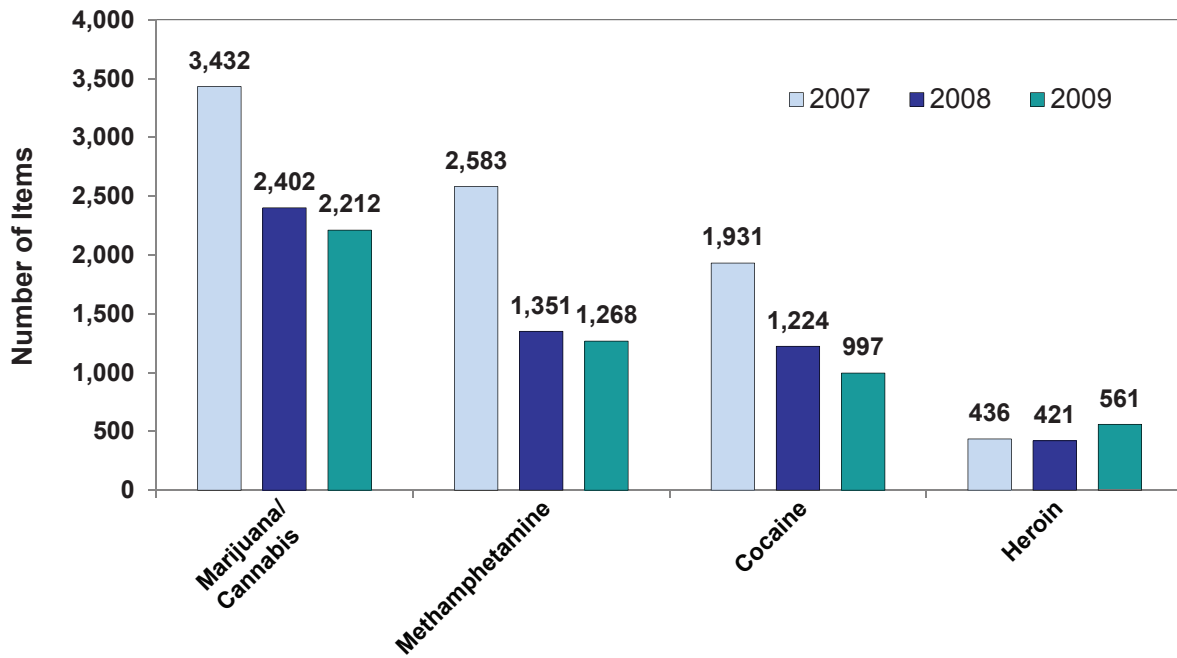
**Exhibit 3. Percent Positive Drug Urine Tests, Male Arrestees, Phoenix: 2007–2009**

SOURCE: Arizona Arrestee Reporting Network

**Exhibit 4. Percent Positive Drug Urine Tests, Female Arrestees, Phoenix: 2007–2009**

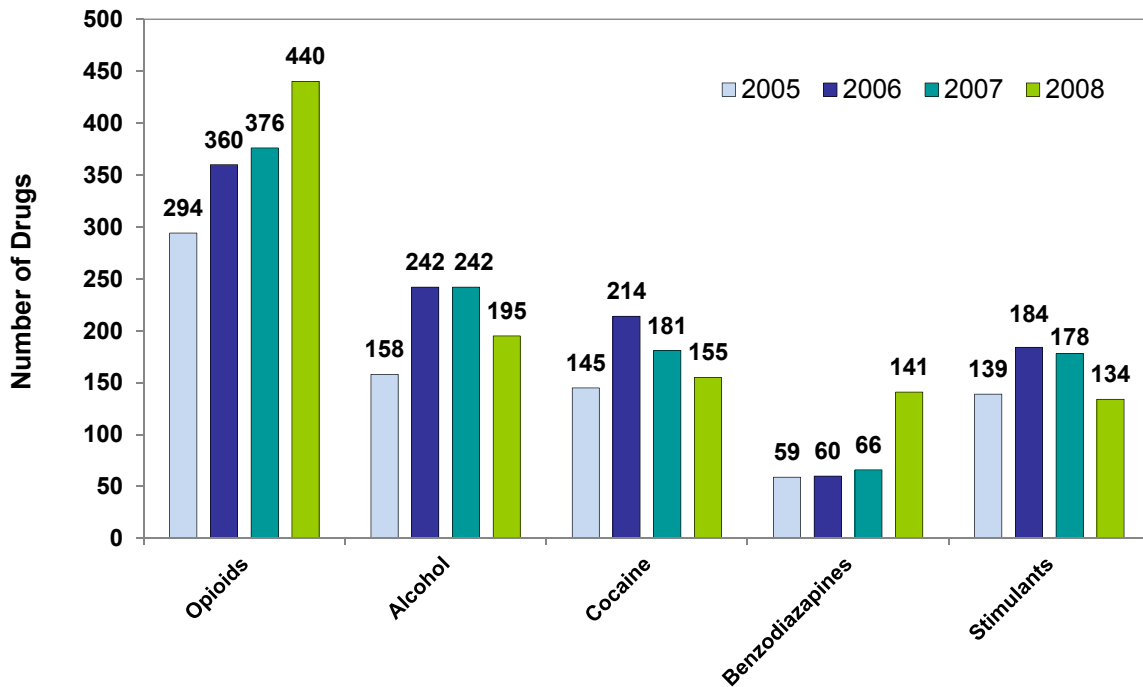
SOURCE: Arizona Arrestee Reporting Network

**Exhibit 5. Number of Marijuana/Cannabis, Methamphetamine, Cocaine, and Heroin Drug Items Identified by Forensic Laboratories, Maricopa County (Phoenix Area): 2007–2009**



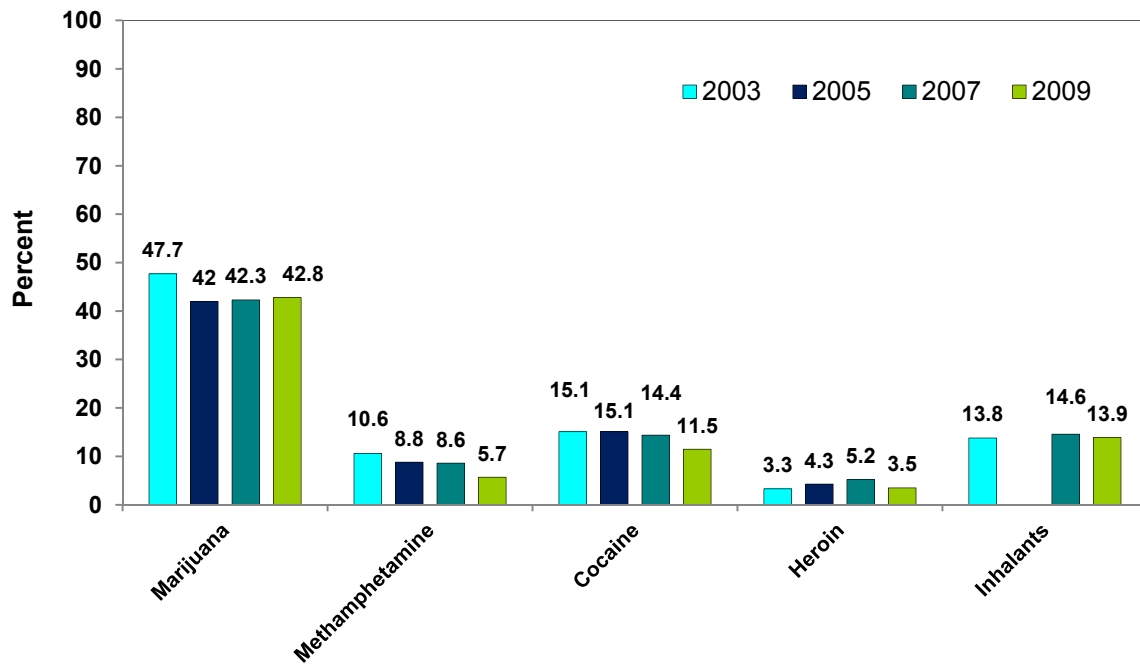
SOURCE: NFLIS, DEA

**Exhibit 6. Number of Drugs Mentioned in Drug Misuse Deaths, Maricopa County (Phoenix): 2005–2008**



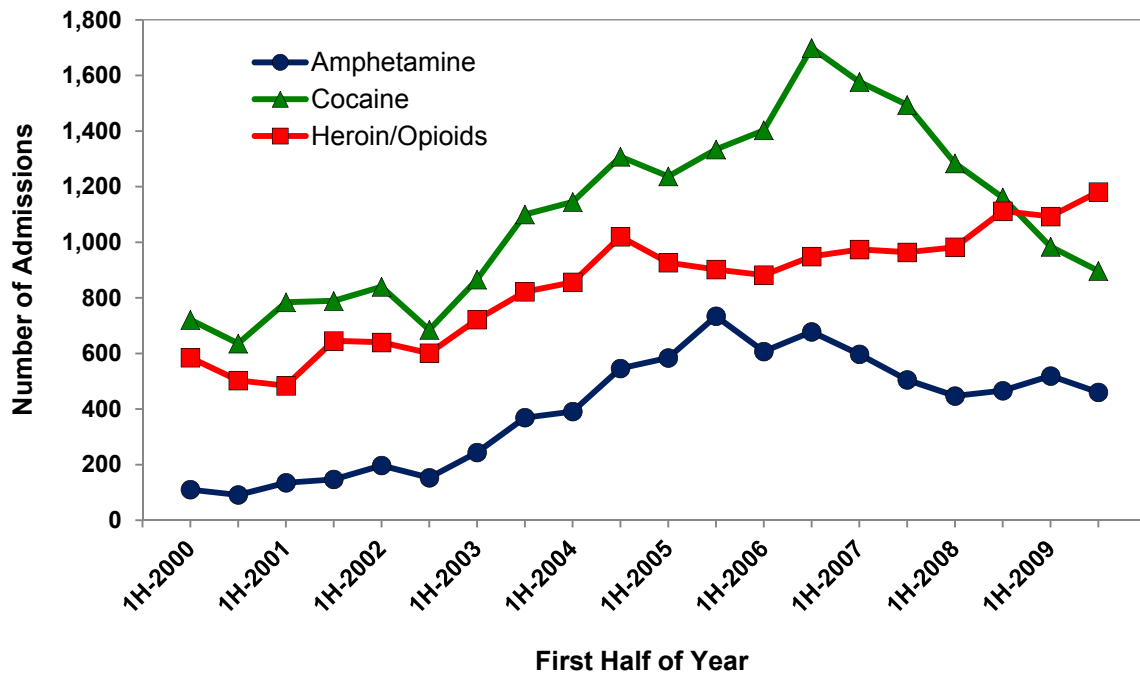
SOURCE: DAWN, OAS, SAMHSA

**Exhibit 7. Use of Drugs During Lifetime, High School Students, by Percent, in Arizona: 2003–2009**



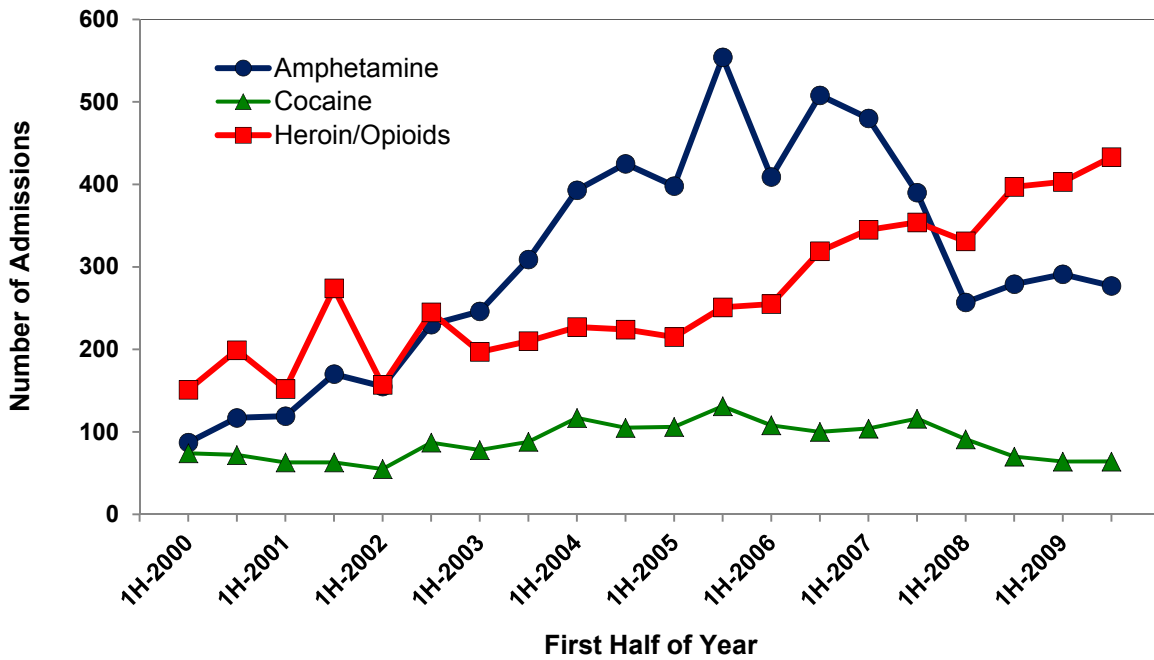
Note: Cocaine and methamphetamine showed statistically significant decreases from 2003 to 2009 and from 2005 to 2009; decreases from 2007 to 2009 were statistically significant for cocaine, heroin, and methamphetamine.  
 SOURCE: YRBS, CDC

**Exhibit 8. Number of Amphetamine, Cocaine, and Heroin/Opioid-Related Hospital Admissions, Pima County (Tucson Area): First Half of Year (1H) Only, 2000–2009**



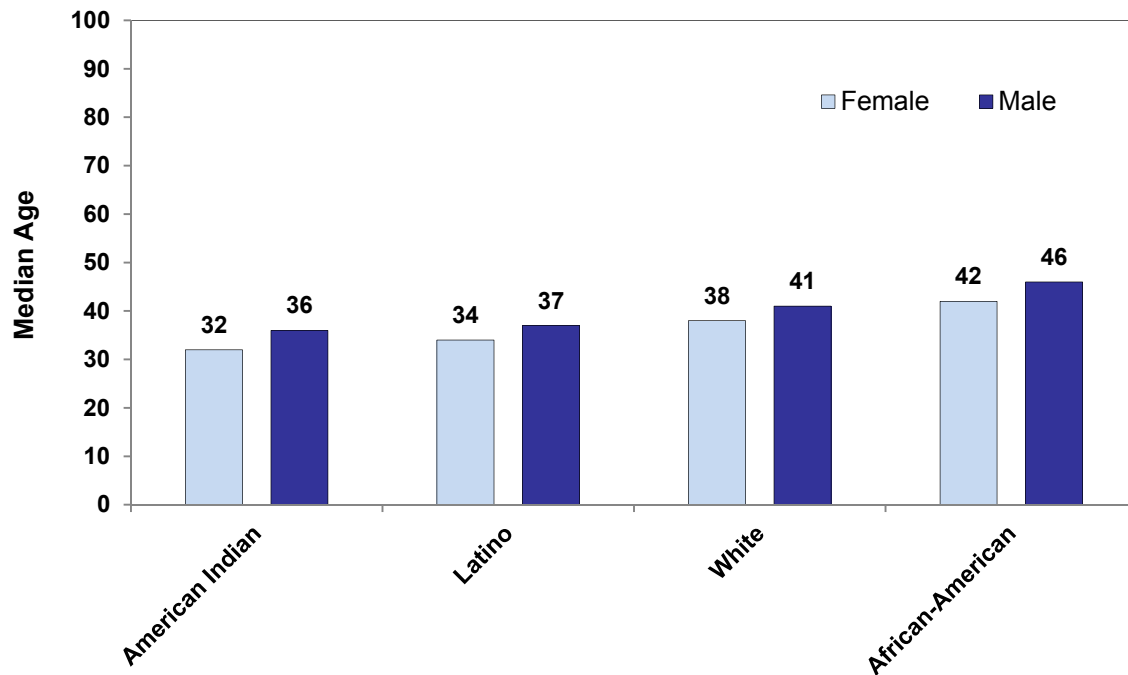
SOURCE: Arizona Hospital Discharge Data System, Arizona Department of Health Services, analysis by the University of Arizona Department of Family and Community Medicine

**Exhibit 9. Number of Amphetamine, Cocaine, and Heroin/Opioid-Related Hospital Admissions, Arizona Rural Counties: First Half of Year (1H) Only, 2000–2009**



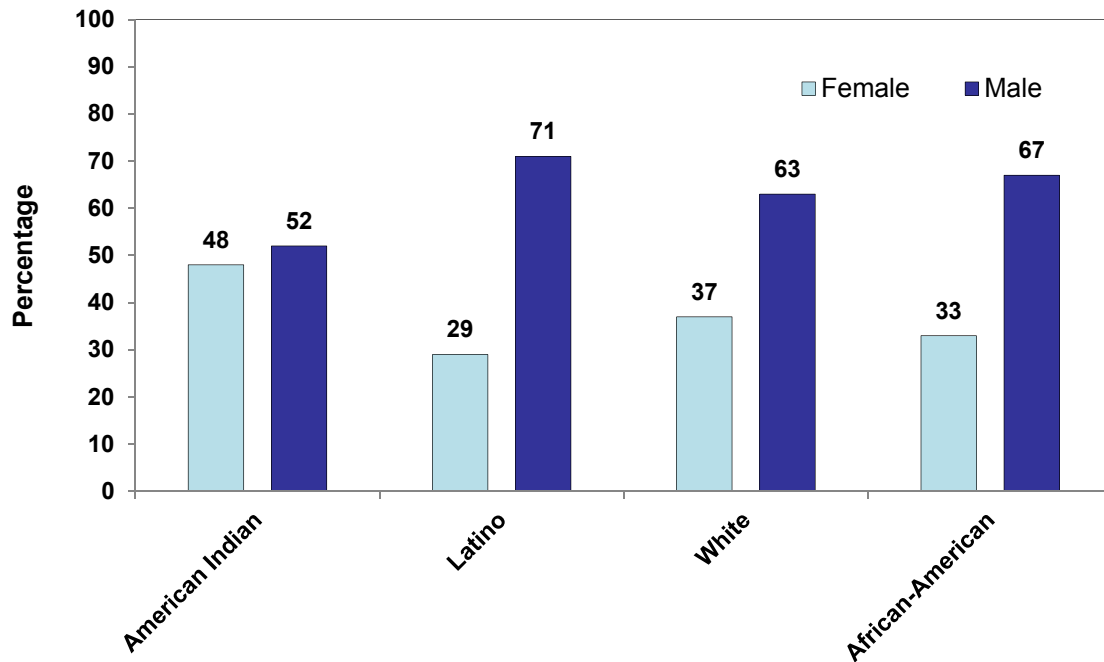
SOURCE: Arizona Hospital Discharge Data System, Arizona Department of Health Services, analysis by the University of Arizona Department of Family and Community Medicine

**Exhibit 10. Median Age of Cocaine-Related Hospital Admissions, by Ethnicity, in Arizona: 2005–2009**



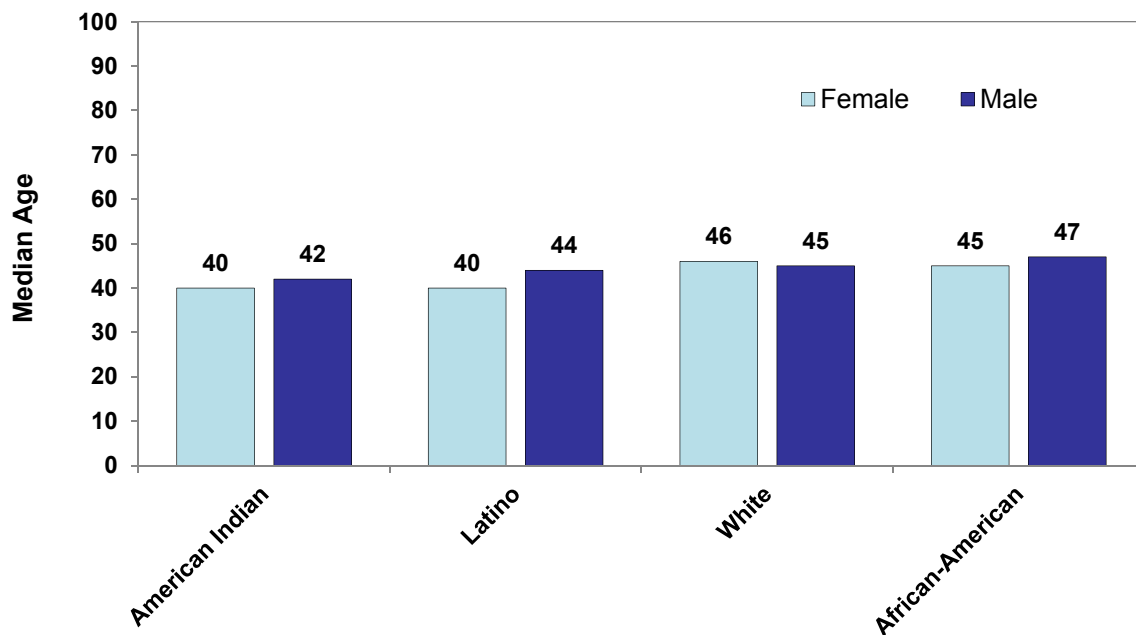
SOURCE: Arizona Hospital Discharge Data System, Arizona Department of Health Services, analysis by the University of Arizona Department of Family and Community Medicine

**Exhibit 11. Percentage of Cocaine-Related Hospital Admissions, Ethnicity by Gender, in Arizona: 2005–2009**



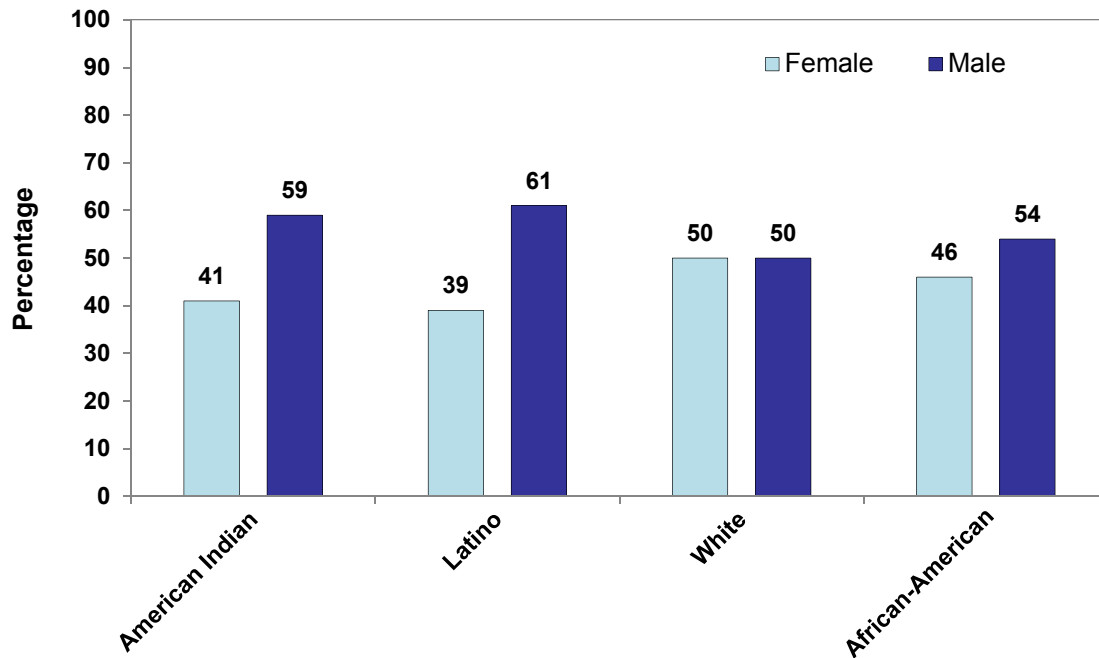
SOURCE: Arizona Hospital Discharge Data System, Arizona Department of Health Services, analysis by the University of Arizona Department of Family and Community Medicine

**Exhibit 12. Median Age of Heroin/Opioid-Related Hospital Admissions, by Ethnicity by Gender, in Arizona: 2005–2009**



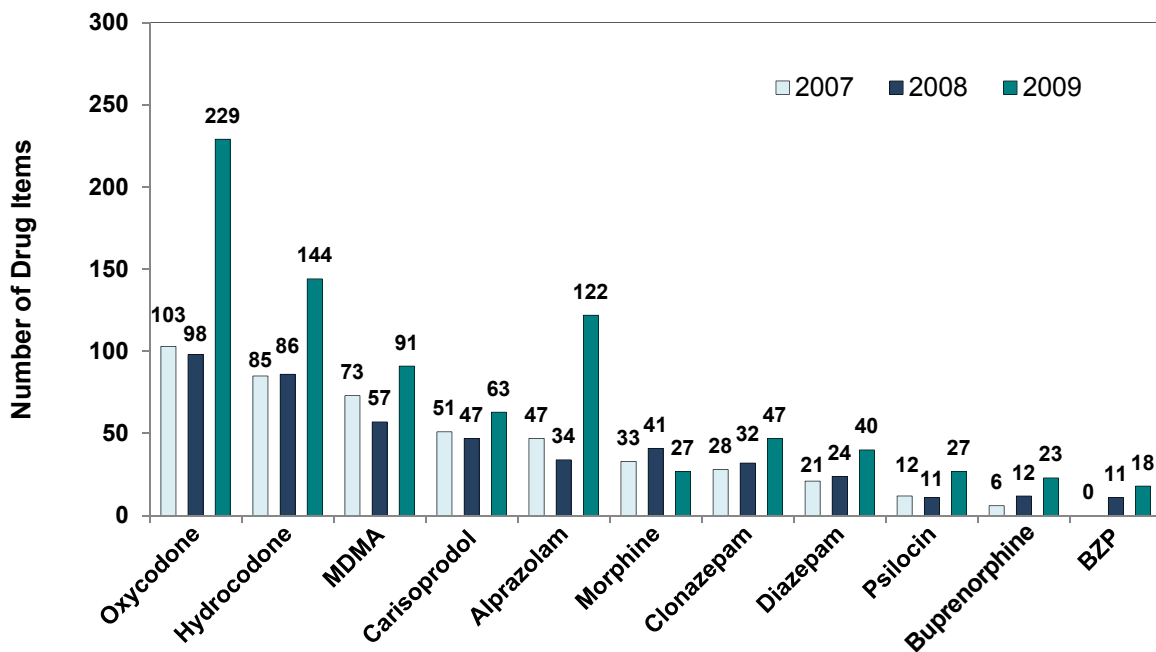
SOURCE: Arizona Hospital Discharge Data System, Arizona Department of Health Services, analysis by the University of Arizona Department of Family and Community Medicine

**Exhibit 13. Percentage of Heroin/Opioid-Related Hospital Admissions, Ethnicity by Gender, in Arizona: 2005–2009**



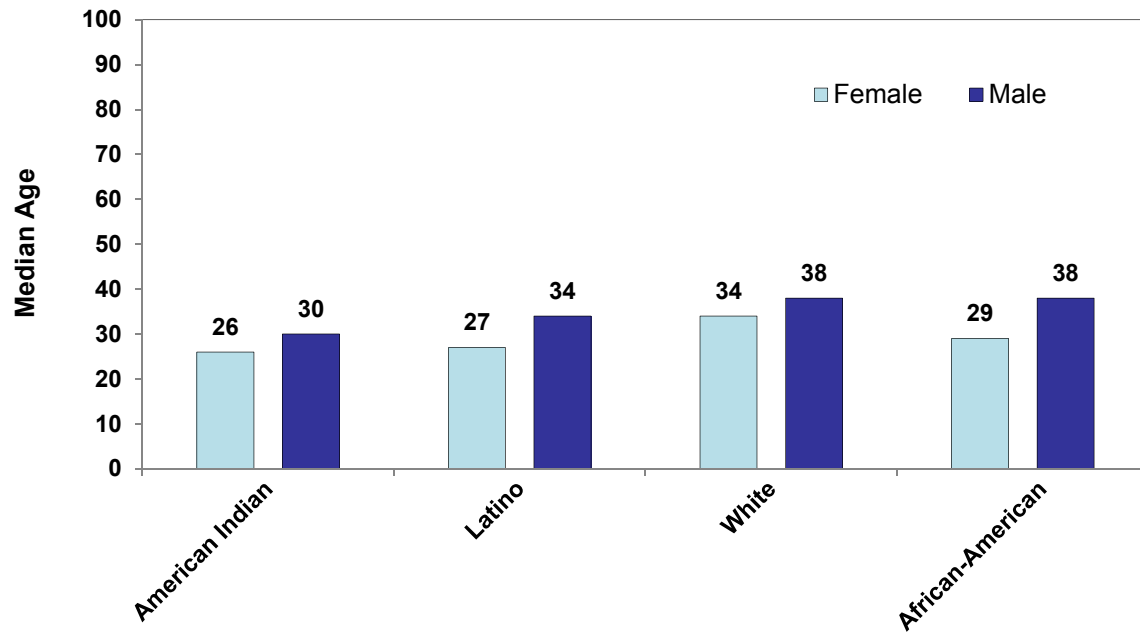
SOURCE: Arizona Hospital Discharge Data System, Arizona Department of Health Services, analysis by the University of Arizona Department of Family and Community Medicine

**Exhibit 14. Number of Drug Items Identified by Forensic Laboratories, Maricopa County (Phoenix Area): 2007–2009 (Continuation of Exhibit 5)**



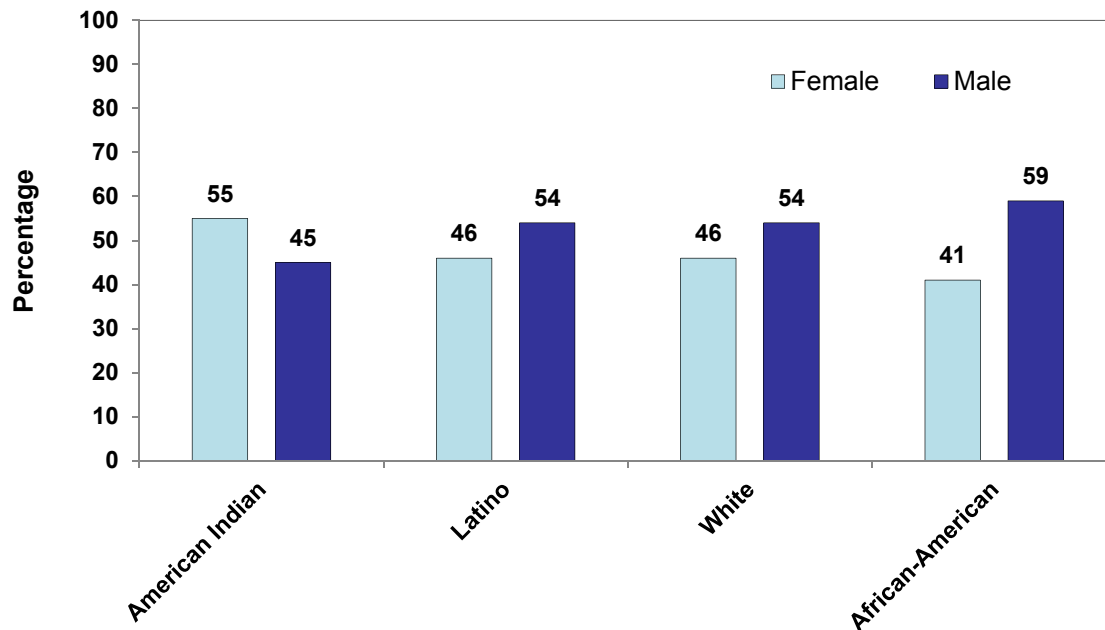
SOURCE: NFLIS, DEA

**Exhibit 15. Median Age of Amphetamine Related Hospital Admissions, by Ethnicity by Gender, in Arizona: 2005–2009**



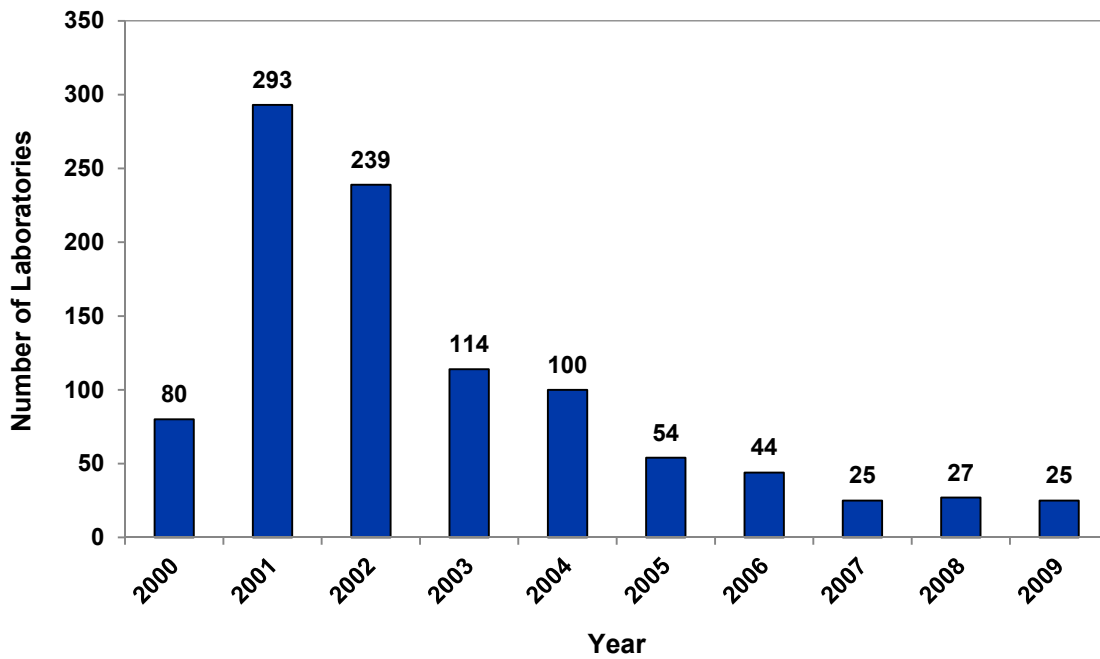
SOURCE: Arizona Hospital Discharge Data System, Arizona Department of Health Services, analysis by the University of Arizona Department of Family and Community Medicine

**Exhibit 16 Percentage of Amphetamine-Related Hospital Admissions, Ethnicity by Gender, in Arizona: 2005–2009**



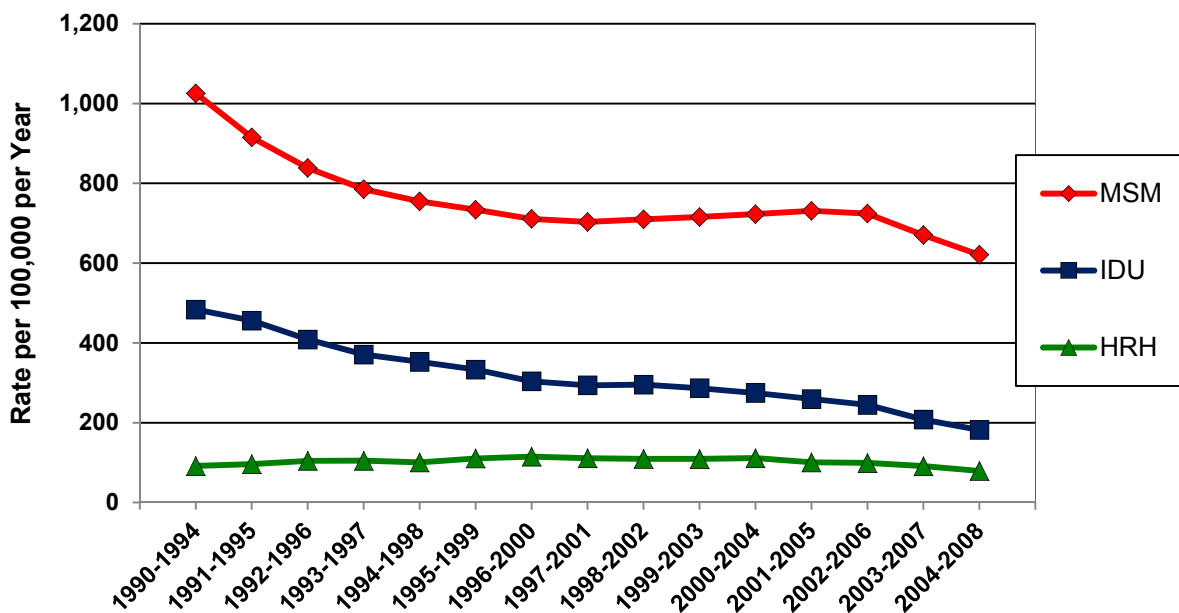
SOURCE: Arizona Hospital Discharge Data System, Arizona Department of Health Services, analysis by the University of Arizona Department of Family and Community Medicine

Exhibit 17. Number of Methamphetamine Laboratories Seized, Arizona: 2000–2009



SOURCE: DEA, Phoenix Field Division

Exhibit 18. Estimated 5-Year Emergent HIV/AIDS Rates per 100,000 per Year, by Reported Risk, Arizona: 1990–2008



Note: MSM=men who have sex with men; IDU=injection drug user; HRH=high risk heterosexual.  
 SOURCE: Arizona Department of Health Services



# Patterns and Trends in Drug Abuse in St. Louis, Missouri: 2009

Heidi Israel, Ph.D., R.N., F.N.P., L.C.S.W.<sup>1</sup>, and Jim Topolski, Ph.D.<sup>2</sup>

## ABSTRACT

*A problem of immediate concern in St. Louis in 2009 was heroin availability. Heroin activity had become a new and persistent trend in the rural and urban areas. Two types of heroin were available in the St. Louis Metropolitan Statistical Area (MSA). St. Louis area admissions for the treatment of heroin abuse were second only to alcohol admissions as the primary drug of abuse. Deaths have remained high from heroin and are identified in rural Medical Examiner (ME) data. Access to heroin with increased purity and heroin that can be smoked or snorted was reported from multiple sources. Methamphetamine use remained stable in St. Louis, and clandestine laboratories appeared to be increasing. Social networks with “cookers” have devised ways to access precursors and continued to produce small amounts of the drug locally. Access to methamphetamine from Mexico and the Southwest is considered a component of the methamphetamine problem in the city and county of St. Louis and the surrounding five Missouri counties. Treatment admissions in the St. Louis area for methamphetamine abuse stabilized in 2008 and 2009. Crack cocaine, formerly the major stimulant problem in the area, decreased in availability and in most indicators. Treatment admissions were down for powder cocaine and smoking crack cocaine. Death data for St. Louis City and County showed a marked*

*downturn. Marijuana indicators were increasing for 2009. Reports of club drug abuse continued to be sparse primarily through anecdotal reports of MDMA (3,4-methylenedioxymethamphetamine) use. In the St. Louis area, less than 5 percent of human immunodeficiency virus (HIV) cases had a primary risk factor of injection drug use, with most new cases identified among men who have sex with men (MSM) (79.4 percent), MSM and injection drug users (IDUs) (2.2 percent), and heterosexual contact (17.2 percent).*

## INTRODUCTION

### Area Description

The St. Louis Metropolitan Statistical Area (MSA) includes approximately 2.7 million people, and is the 18th largest MSA in the country. Most of the population lives in the city of St. Louis and St. Louis County; others live in the surrounding rural Missouri counties of Franklin, Jefferson, Lincoln, St. Charles, and Warren. Redefinition of the MSA has resulted in an area that includes a total of eight Missouri counties and eight Illinois counties, reflecting the population sprawl since the last U.S. Census. St. Louis City's population continued to decrease to less than 350,000, many of whom were indigent and minorities. However, revitalization with an increase in young professionals has led to conflicts with marginalized populations in the city. Most crime statistics for the city decreased in 2009, including homicides. Outlying counties have experienced an increase in violent crimes, and may relate to the depressed economic recession and increased unemployment. St. Louis County, which surrounds St. Louis City, has more than 1 million residents, and is a mix of established affluent neighborhoods and middle- and lower-class housing areas on the north and south sides. The most rapidly expanding population areas are in St. Charles and Jefferson Counties in Missouri and St. Clair and Madison Counties in southern Illinois, which have a mixture of small towns and farming areas. The populations in these rural counties total more than 800,000. Living conditions and cultural differences between the

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urban and rural areas have resulted in contrasting drug use patterns.

Much of the information included in this report is specific to St. Louis City and County, with caveats that apply to the total MSA. Anecdotal information and some medical examiner (ME) data were provided for rural areas surrounding St. Louis.

## Policy Issues

Even with legislation for precursor drugs, such as pseudoephedrine, methamphetamine use and local production continued for several reasons. The policy does not address the imported methamphetamine from Mexico and the social networks that produce smaller amounts of methamphetamine. There was some evidence that local “cooks” may have been collaborating and pooling resources. Attention to methamphetamine has masked ongoing problems with heroin, cocaine, prescription opiates, and marijuana.

Missouri has been in a budget crisis for years, resulting in cuts in services, particularly in health services, drug treatment, and mental health. Limited treatment availability continued for drug abusers. Medicaid offers treatment services to women and children and is seen as a positive move toward access. The trend is to provide these services on a limited outpatient basis. The result is that some of these indicators do not fully reflect the degree of use or abuse of the substances tracked.

While Missouri maintains its State Epidemiology Work Group (SEWG), an additional work group has been created as part of the Strategic Prevention Framework–State Incentive Grant (SPF–SIG) sponsored by the Center for Substance Abuse Prevention.

## Data Sources

The data sources used in this report are listed below:

- **Drug treatment data** were derived from the Treatment Episode Data Set (TEDS) database

for calendar year (CY) 2009. Private treatment programs in St. Louis County provided anecdotal information.

- **Drug price and purity information** was provided by the Drug Enforcement Administration (DEA), Domestic Monitor Program (DMP), through 2008, and the National Drug Intelligence Center (NDIC).
- **Drug-related mortality data** were provided by the St. Louis City and County ME Office for CY 2009.
- **Intelligence data** were provided by the Missouri State Highway Patrol; Aubrey Grant, Program Specialist/Policy Bureau, Office of the Illinois Attorney General; and the DEA.
- **Data on drug seizures** were provided by the DEA, National Forensic Laboratory Information System (NFLIS) for 2009.
- **Client ethnographic information** was obtained from user/key informant interviews.
- **Human immunodeficiency virus (HIV), acquired immunodeficiency syndrome (AIDs), and sexually transmitted disease (STD) data** were derived from the St. Louis Metropolitan Health Department and the Missouri Department of Health and Senior Services for 2009.
- **Uniform Crime Report data** for Missouri counties and **Missouri clandestine methamphetamine laboratory incidents** were provided by the Missouri State Highway Patrol for 2009.
- **Clandestine methamphetamine incidents for Illinois for 2009** were provided by the DEA and by the Illinois State Highway Patrol.

The number of hospitals in the St. Louis area reporting to the Drug Abuse Warning Network (DAWN) *Live!* system was insufficient to produce reliable and valid emergency department estimates for the city. It is hoped that another source of hospital emergency room, admissions, or discharge

data will be found in the future to fill this information gap.

## DRUG ABUSE PATTERNS AND TRENDS

Regionally, some of the indicators for the major substances of abuse changed significantly in 2008 and continued in 2009. Cocaine availability, treatment admissions, and deaths decreased, while heroin availability, treatment admissions, and deaths increased substantially. Heroin availability also increased in rural areas surrounding St. Louis. Alcohol and other categories remained more stable. Anecdotal information indicated that heroin use, purity, and availability may have increased regionally. Heroin indicators surpassed cocaine and marijuana indicators in treatment. The death data for St. Louis City and County showed increases in heroin and other opiates during 2009. Prescription narcotic analgesics were reported to be available in the more rural areas of the MSA.

Methamphetamine indicators decreased in 2009 but remained an area where resources were used. Methamphetamine remained stable as a drug of abuse in other cities and in the rural areas of Missouri. The influence of the distribution networks and combining of distribution networks for cocaine and heroin has led to increased availability throughout the region. Social networks with methamphetamine cooks were responsible for increases in clandestine laboratories in the region.

Two types of heroin continued to be available in the area, and the heroin was more pure and less expensive than what was previously available. St. Louis is a destination market, and subject to all the changes that occur in the supply chain. Heroin has been in the suburbs and surrounding rural areas. A few fentanyl deaths remained in the ME data.

Drug education and prevention activities have continued at the community level. The National Council on Alcoholism and Drug Abuse (NCADA) and other local education programs target prevention of drug use in the area. Faith-based initiatives are also involved in prevention. These groups are particularly active in the surrounding counties of St. Louis. The poor city economy continued to foster drug abuse

and distribution. Marijuana continued to be a very popular drug of abuse among younger adults. Gangs continued to be involved in the drug trade and related violence, with Latino, African-American, and Asian youth and young adults involved in these groups. Interdiction programs are active in the city and along major interstate highways.

While not reported separately, alcohol abuse and underage use of alcohol continued to be community concerns. Many traffic accidents and personal violence incidents included alcohol use in the situation. In St. Louis in 2009, 35.3 percent of treatment admissions were for alcohol alone.

With the severe cuts in services in the State, treatment admissions data and Missouri Department of Corrections (DOC) urine results (important indicators of long-term use of drugs) may not accurately reflect the severity of the drug abuse problem. However, the data are indicative of the relative prevalence of abuse of substances in the region.

### Crack/Cocaine

The ME data report for 2009 for the St. Louis area showed that cocaine was decreasing, with a drop in deaths from 167 in 2007 to 70 in 2009 (exhibit 1). These 2009 data are deaths where cocaine was involved and should be interpreted to indicate overall trends.

Among treatment admissions for illicit drug abuse in 2009, the number for primary cocaine abuse admissions reflected another 5-percent decrease, reflecting an overall decrease in admissions from 25 to 13 percent. Cocaine was the fourth primary drug of abuse among all admissions, following alcohol, heroin, and marijuana. This is a significant change for this region over the past 2 years. Cocaine represented 13 percent of admissions, while marijuana was 21.3 percent, and heroin comprised 22.5 percent of admissions respectively (exhibit 1). In 2009, males constituted 65.7 percent and females represented 34.3 percent of cocaine admissions. Most clients were age 35 or older (79.6 percent). Marijuana, heroin, and alcohol were the most frequently cited secondary and tertiary drugs of abuse.

While the DEA's emphasis has shifted from cocaine to methamphetamine and heroin, law

enforcement sources, the DEA, and street informants reported poor quality, less availability, and higher prices for cocaine. In December 2008, the NDIC reported cocaine prices for St. Louis. Crack prices ranged from \$20 to \$40 per rock (exhibit 2) when available. The price was reported to be climbing, however. All cocaine in St. Louis is initially in powder form and is converted to crack for distribution. In the past, cocaine was readily available on the street corner in rocks or grams, but this picture is changing. No new information is available on the pricing in Kansas City and smaller cities outside St. Louis.

NFLIS data indicated that 2,642 (14.8 percent) drug items analyzed in 2009 for the St. Louis MSA were cocaine. This placed cocaine as the second most frequently identified substance in the NFLIS program during 2009, yet lower than in past reports.

The continued use of cocaine and methamphetamine has potentially long-term consequences by contributing to severe health consequences. Older cocaine users may not realize the toll cocaine takes on their health since many of the older cocaine users who have died have lower levels of cocaine in their system. The lower incidence of HIV in the general population as well as drug users has prevented a larger number of drug users from contracting HIV. Crack/cocaine is considered to be a primary risk for HIV as well as hepatitis C.

Most cocaine users reported smoking crack cocaine, though some used powder cocaine. Eighty-eight percent of primary cocaine abusers admitted for treatment in 2009 smoked the drug.

A decrease in the use of combined cocaine and heroin ("speedball") used by injection drug users (IDUs) has been noted, possibly due to the dearth in cocaine availability. Younger users tended to smoke cocaine. Polydrug use was also evident in the treatment data. The reported use of marijuana, heroin, and alcohol in addition to cocaine suggested this trend will likely continue.

## Heroin

Heroin consistently increased in all indicators (exhibit 1). The ME data report for 2009, covering

St. Louis City and St. Louis County, identified a large increase in deaths involving heroin. In 2009, heroin was identified in 180 deaths in St. Louis City and County. In 2008, heroin was present in 137 deaths; in 2007 heroin was present in 65; in 2006, it accounted for 47 deaths in St. Louis. There was a statistically significant increase in related deaths in the second half of 2008 ( $p < .03$ ) when heroin availability and purity began to climb. Most concerning is the deaths from heroin in rural counties such as Franklin, Jefferson, and St Charles. Prior to this latest increase in availability and purity, heroin was found in small pockets of IDUs residing in small college towns, and in small rural towns along major highways in the Missouri and Illinois St. Louis MSA. With this increase in deaths and spreading use, many law enforcement groups are alarmed as the social networks for rural access are not well understood.

While heroin treatment admissions increased substantially as a proportion of all admissions between 1996 and 2000, they leveled off in 2001–2003. However, admissions increased 15.5 percent from 2006 to 2007, and increased another 49 percent in 2008. In 2009, treatment admissions continued to climb with clients younger than 35. Admissions to some available treatment depended on ability to pay. Some heroin abusers in need of treatment utilized private pay methadone programs. Rapid detoxification, using naltrexone or buprenorphine, was still a treatment option at private centers, but it is expensive. Approximately 28.3 percent of heroin admissions in 2009 were age 25 or younger. Of the methods of administration, inhalation accounted for 40.6 percent of the admissions, while injection use was 57 percent (exhibit 1). The increased availability of higher purity, and the resulting ability to either snort or smoke the heroin, has led to a wider experimentation and use of the drug in social circles that previously would not use heroin.

In 2009, males accounted for 59.2 percent and females represented 40.8 percent of heroin admissions. Admissions for African-Americans were less common than those for White heroin abusers. Most admissions were younger than 35 (69.4 percent)

(exhibit 1). Cocaine and marijuana were the most frequently cited secondary and tertiary drugs of abuse. Most clients entering treatment referred themselves or were referred by the courts.

A steady supply of Mexican heroin remained available; both the DEA and DMP made heroin buys in the region. Mexican black tar heroin showed a peak of 24.0 percent purity in 1998; purity was down to 19.5 percent in 2007, and has been cited as low as 5 percent in the most recent DMP. Currently, Mexican brown powder or a slightly bleached version of this powder has reported purities of 20–40 percent. Another type of heroin that is believed to be South American and is reportedly a more potent heroin was available widely. While the 2008 DMP purities were lower than in many other cities, the consistent higher purity allowed for expansion into a larger market where a more conventional method of administration can be used. Most heroin was purchased in a number-5 gel capsule (one-tenth-gram packages of heroin) for \$10–\$20 or as one-half gram baggies that sold for \$100 each (exhibit 2).

The city of St. Louis is an end-user market and is dependent on transportation of heroin from points of entry into the Midwest. The wholesale price remained at \$100–\$400 per gram, depending on heroin type. On street corners, heroin sold for \$200 per gram, according to anecdotal reports. In St. Louis and other smaller urban areas, small distribution networks sold heroin. Kansas City's heroin supply differed from that of St. Louis, probably due to suppliers. Mexican black tar heroin was primarily available there. The lighter color, more potent heroin did not appear to be available in the Kansas City metropolitan area. NFLIS reported that 11.6 percent of the items analyzed in 2008 were heroin.

### **Other Opiates/Narcotics**

Other opiates represented 7.5 percent of all treatment admissions in 2009. These admissions for abuse of other opiates represented a substantial increase in the number of admissions for this class of drug over previous years. The increase may reflect an upward trend in the abuse of

narcotic analgesics, both licit and illicit. Methadone remained available, due to prescription abuse as well as patient diversion and accounted for 19 deaths in 2009. NFLIS data for 2009 indicated that hydrocodone (2.1 percent of samples identified) and oxycodone (1.5 percent) were the two most frequently analyzed opiates following heroin, and were the sixth and eighth most frequently identified substances in the St. Louis MSA NFLIS report.

Fentanyl continued to appear in the ME data with seven deaths in St. Louis City and County and four deaths in the three targeted rural counties (St. Charles, Jefferson, Franklin) in 2009. OxyContin® (a long-lasting, time-release version of oxycodone) abuse remained a concern for treatment providers and law enforcement officials. Prescription practices were closely monitored for abuse, and isolated deaths have been reported, but no consistent reports were available on the magnitude of this potential problem. Abuse of oxycodone remained a concern in medical settings where the drug is preferentially sought. The use of hydromorphone remained common among a small population of White chronic addicts (exhibit 2).

### **Marijuana**

Marijuana treatment admissions reflected the increased utilization of the treatment system by the criminal justice system. Admissions in 2008 (2,836) accounted for 23.7 percent of all admissions in the St. Louis region and decreased to 21.3 percent in 2009; this may be an artifact of heroin prevalence and treatment slot availability (exhibit 1). Marijuana, viewed by young adults as acceptable to use, was often combined with alcohol. Almost two-thirds of clients admitted to treatment were referred by the courts. The 25 and younger age group accounted for 55.6 percent of primary marijuana treatment admissions in 2009. Increased THC (tetrahydrocannabinol) content of marijuana should not be ignored as part of the voluntary admissions. Some prevention organizations reported resurgence in marijuana popularity, so prevention programs have targeted these younger groups through education.

Because of the heroin, cocaine, and methamphetamine abuse problems in St. Louis, law

enforcement officials have focused less attention on marijuana abuse. Limited resources required establishing enforcement priorities. Younger marijuana offenders who did not identify themselves as drug-dependent may represent some of the clients participating in treatment.

Marijuana was available from Mexico or domestic indoor growing operations. Marijuana from Mexico was classed as lower grade and less expensive (\$100 per ounce); all indoor-grown marijuana was a higher grade and more expensive (\$1,400 per ounce), as reported by the NDIC (exhibit 2). Indoor production makes it possible to produce marijuana throughout the year. In addition, the Highway Patrol Pipeline Program monitors the transportation of all types of drugs on interstate highways. Much of the marijuana grown in Missouri is shipped out of the State. NFLIS reported that 48 percent of all items identified in the St. Louis MSA in 2009 were marijuana/cannabis samples. This was the most frequently identified substance for the area. Marijuana was the most frequently identified substance statewide, and showed consistently high levels of detection in the screening program.

## Stimulants

Methamphetamine (“crystal” or “speed”), along with alcohol, remained a primary drug of abuse in both the outlying rural areas and statewide (most of Missouri, outside of St. Louis and Kansas City, is rural). Methamphetamine continued to be identified as a problem in rural communities.

In rural areas, methamphetamine appeared regularly in treatment data, but methamphetamine has been identified as a problem in all parts of the State. The urban, street-level distributors in St. Louis who formerly dealt in cocaine have become involved in other drugs such as heroin. An increase in availability and purity of Mexican methamphetamine, and a growth in Hispanic groups in the St. Louis metropolitan area, may allow for the cross-over with heroin and methamphetamine. With the pseudoephedrine access laws, these sources may replace homegrown supplies, but an upsurge in 2009 in clandestine laboratories may

indicate either a small social network approach to access precursors or a “workaround” with the precursors for production. Treatment admissions in 2009 represented only 2.5 percent of total admissions (exhibit 1). The number of methamphetamine treatment admissions in St. Louis was 295 (2.5 percent of total admissions) in 2009, which is a slight decrease from the 318 in 2008 (2.7 percent of the total admissions). In 2009, St. Louis ME data indicated that six of the seven deaths attributed to methamphetamine were African-American males. In rural treatment programs, methamphetamine was the drug of choice after alcohol.

In 2009, the percentage of females entering treatment was slightly higher than the percentage of males (exhibit 1). Admissions for African-Americans were almost nonexistent. Most clients admitted were age 26–34 (36 percent) or 35 and older (42 percent). Marijuana and alcohol and some heroin were the most frequently cited secondary and tertiary drugs of abuse. Clients entering treatment were typically referred by the courts or self-referred.

The DEA Midwest Field Division decreased its cleanup of clandestine methamphetamine laboratories after training local enforcement groups. Data for 2007 indicated that recent legislation had an impact on the number of clandestine laboratory incidents, which fell to 1,285 statewide. In the St. Louis MSA, the numbers of clandestine laboratory incidents were 868 in 2005; 503 in 2007; and 770 in 2008. In 2009, 651 clandestine laboratories were identified in the St. Louis area, with 1,774 identified statewide, restoring the St. Louis area to the rank of first in the country for clandestine laboratories. This influx in incidents may indicate increased social networking to produce small amounts of methamphetamine, or a workaround with precursor drugs after Senate Bill 10, the pseudoephedrine control law, came into effect July 14, 2005. The availability of Mexican methamphetamine is still predominant where local cook laboratories utilize a vast amount of resources for clean up.

In the methamphetamine scene, Hispanic traffickers were the predominant distributors. Shipments from “super laboratories” in the Southwest

were trucked in on the interstate highway system. This network is in contrast to the old local “mom and pop” laboratories that fueled much of the methamphetamine debate in the State over the past 10 years. The purity of the methamphetamine obtained through this source has improved in recent years. While much of the law enforcement resources and personnel were directed at local production and clean up, methamphetamine was available in the area through Hispanic organizations. Crystallized methamphetamine was available in Kansas City and outlying areas of the State, with some availability in St. Louis.

Mexican “ice” sold for \$100 per gram in St. Louis (exhibit 2), and for as little as \$ 80–\$100 per gram in the Kansas City area. Methamphetamine was represented in 3.7 percent of the NFLIS analyses in 2009, the fourth most frequently identified substance in the St. Louis MSA. Pseudoephedrine was 1.2 percent of the identified substances during this period. Because methamphetamine is so inexpensive and appeals to a wide audience, it is likely that its use will continue.

### **Depressants**

The remaining few private treatment programs in the State often provided treatment for benzodiazepine, antidepressant, and alcohol abusers. Social setting detoxification has become the treatment of choice for individuals who abuse these substances. Since many of the private treatment admissions were polysubstance abusers, particular drug problems were not clearly identified.

### **Hallucinogens**

Over the years, LSD (lysergic acid diethylamide) has sporadically reappeared in local high schools and rural areas. Blotters sold for \$20 per 50-microgram dose.

PCP (phencyclidine) has been available in limited quantities in the inner city and has generally been used as a dip on marijuana joints. While PCP was not seen in quantity, it remained in most indicator data and police exhibits, and as a secondary drug in ME data. PCP appeared to be more readily

available and used in Kansas City. Most of the users of this drug in the inner city were African-American; it remained an indigenous drug of choice.

### **Club Drugs**

MDMA (3,4-methylenedioxymethamphetamine) accounted for 1.2 percent of items identified in the 2009 NFLIS data for St. Louis. The 291 items analyzed ranked ninth among all substances analyzed in St. Louis MSA laboratories. Reports of other club drugs were almost nonexistent. The number of items identified as MDMA may support anecdotal reports of use of this substance in the St. Louis area. Local researchers have identified other substances available to users, as reported in January 2010.

## **INFECTIOUS DISEASES RELATED TO DRUG ABUSE**

### **HIV/AIDS**

New seropositive HIV and AIDS cases among IDUs remained low in the St. Louis HIV region, which includes St. Louis City and County and Franklin, Jefferson, St. Charles, Lincoln, and Warren Counties (exhibit 3). In 2009, as in preceding years, the predominant number of new HIV cases occurred among men who have sex with men (MSM) (70.3 percent), followed by cases resulting from heterosexual contact (19.8 percent). The largest increases were found among young African-American females, who were infected through heterosexual or bisexual contact, and young homosexual African-American males. Of new HIV cases in the St. Louis region, African-American females and African-American males accounted for more than one-half of new cases. Increased specialized minority prevention and testing efforts were initiated.

Of the total cases of HIV/AIDS (5,388) through 2009, the same primary exposure categories are reflected: MSM, 70 percent; and heterosexual contact, 19 percent. Injection drug use was noted in 4.3 percent of HIV and 6.5 percent AIDS cases (exhibit 3).

## STDs and Hepatitis C

A resurgence of syphilis among MSMs has led to increased surveillance and targeted prevention programs for this population. In 2009, 222 new cases of primary and secondary syphilis cases were identified in the St. Louis region. In the Kansas City region, there were 127 cases. Increased efforts in more tertiary prevention and active education campaigns in the highest risk populations have been used to try and change these rates. Rates of gonorrhea and chlamydia remained stable and high in the urban STD clinics. St. Louis had more than one-half of the State's gonorrhea cases (2,626 of 6,488) during 2009, reflecting a 19-percent decrease overall. It is hypothesized that this is due to better antibiotics, single dose treatments, and better screening in the community. Almost one-half of the State's chlamydia cases (12,281 of 25,868) were in the St. Louis area. Syphilis/gonorrhea rates were high in neighborhoods known to have high levels of drug abuse and in the MSM cohorts, underscoring the concept of assortative mixing in cohorts. In the St. Louis region, there

were 159 cases of hepatitis B, and 1,252 cases of hepatitis C reported in 2009. Exhibit 4 includes historic HIV and hepatitis C data for the immediate St. Louis City area, and hepatitis C data for the St. Louis MSA in 2009.

## REFERENCE

Brinkman, K. "Strategic Intelligence," St. Louis Office of the Drug Enforcement Administration, personal communication.

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**Exhibit 1. Indicators From Mortality and Treatment Admissions Data for Cocaine, Heroin, Marijuana, and Methamphetamine, St. Louis: 1996–2009**

Indicator	Cocaine	Heroin	Marijuana	Methamphetamine
<b>Number of Deaths by Year</b>				
1996	93	51	NA <sup>1</sup>	9
1997	43	67	NA	11
1998	47	56	NA	9
1999	51	44	NA	4
2000	66	47	NA	9
2001	75	20	NA	3
2002	76	50	NA	–
2003	78	61	NA	–
2004	38	64	NA	–
2005	106	31	NA	–
2006 <sup>2</sup>	42	47	NA	–
2007 <sup>2</sup>	167	65	NA	4
2008 <sup>2</sup>	95	137	NA	7
2009	70	180 <sup>3</sup>	NA	1
<b>Treatment Admissions Data</b>				
Percent of All Admissions (2009)	12.0	22.5	21.3	2.5
Percent of All Admissions (2008)	17.8	18.8	23.7	2.7
Percent of All Admissions (2007)	22.8	15.5	20.3	2.5
Percent of All Admissions (2006)	25.6	13.2	22.7	3.0
<b>Gender (%) (2009)</b>				
Male	65.7	59.2	77	48
Female	34.3	40.8	23	52
<b>Age (%) (2009)</b>				
12–17	<0.1	1.0	25.4	2
18–25	6	27.4	30.2	20
26–34	14.3	41.0	26.0	36
35 and older	79.7	30.6	18.4	42
<b>Race/Ethnicity (%) (2009)</b>				
White	24.3	53.0	42.0	99.1
African-American	73.4	46.0	55.8	0.9
Hispanic	2.3	<1	1.1	0
<b>Route of Administration (%) (2009)</b>				
Smoking	88.8	1.0	97.8	51.5
Intranasal	7	40.6	0.3	7.6
Injecting	2	57.1	0.1	34.9
Oral/Other	2.2	1.3	1.8	6.0

<sup>1</sup>NA=Not applicable.<sup>2</sup>St. Louis City/County Medical Examiner's Office data manual reports.<sup>3</sup>Excludes rural deaths.

SOURCE: St. Louis City/County Medical Examiner's Office; TEDS database

**Exhibit 2. Other Combined Indicators for Cocaine, Heroin, Marijuana, and Methamphetamine, St. Louis: 2002–2009**

Indicator	Cocaine	Heroin	Marijuana	Methamphetamine And Other Drugs
Multisubstance Combinations	Older users combine with heroin, alcohol	Less available cocaine, mix with alcohol, pills (bars of Xanax®)	Alcohol	Marijuana commonly used in combination, alcohol use common
Market Data (2008–2009)	Powder \$100–\$400/g, 70% pure; crack \$20–\$40/rock	\$100/1/2 gm baggie; \$20 per number-5 gel capsule; depending if MBP <sup>1</sup> , SA <sup>1</sup> ; \$200/g, 16–22 percent pure, street reports higher purity available	Low grade: \$100/oz High grade (indoor grow, includes various types): \$1,400/oz	Methamphetamine \$100/g, Mexican (80 percent) and local (80 percent pure); hydro-morphone \$80/4-mg pill; OxyContin® \$20–\$40
Qualitative Data <sup>2</sup>	Limited available, urban choice	Younger users, 1/3 younger than 25, increased availability and purity	Readily available, younger users in treatment	Rural/suburban users of amphetamine
Other Data of Note	N/R <sup>3</sup>	MBP, SA <sup>1</sup> —young users able to smoke/snort	N/R	Methamphetamine laboratory seizures increase 2009—mom/pop laboratories; producers in super laboratories—controlled by Hispanic groups

<sup>1</sup>MBP=Mexican Brown powder; SA=South American.

<sup>2</sup>Obtained from user/key informant interviews.

<sup>3</sup>N/R=Not reported.

Note: g=gram; oz=ounce; mg=milligram.

SOURCES: DEA; NDIC; Client Ethnographic Information

**Exhibit 3. Persons with HIV (New HIV/AIDS and Existing Cases), by Exposure Category, in St Louis Metropolitan Area: Through 2009**

Exposure Category	New Cases HIV 2009	Living with HIV Through 2009	New Cases AIDS, 2009	Living with AIDS Through 2009
MSM	143 (79.4%)	1770 (70.5%)	62 (78.5%)	1985 (69.9%)
IDU/MSM	4 (2.2%)	75 (3%)	0	137 (4.8%)
IDU	2 (1.1%)	108 (4.3%)	8 (10.1%)	186 (6.5%)
Heterosexual	31 (17.2%)	547 (21.8%)	9 (11.4%)	507 (17.8%)
Hemophilia/coag disorder	0	7 (0.3%)	0	26 (0.9%)
Blood transfusion	0	1 (0%)	0	0
Pediatric population	0	23	0	15
<b>Total</b>	<b>180</b>	<b>2,532</b>	<b>79</b>	<b>2,856</b>

Note: MSM=men who have sex with men; IDU= injection drug user.  
 SOURCE: St. Louis City Health Department; Missouri Department of Health

**Exhibit 4. Number of New HIV and Hepatitis C Cases, St. Louis: 2002–2009**

New Cases	HIV	Hepatitis C
2002	178	227
2003	197	488
2004	122	540
2005	171	512
2006	227	305
2007	198	1,217
2008	212	1,415
2009	259	1,252 <sup>1</sup>

<sup>1</sup>St. Louis MSA.

SOURCE: St. Louis City Health Department; Missouri Department of Health

# Drug Use and Abuse in San Diego County, California: 2009

Robin A. Pollini, Ph.D., M.P.H.<sup>†</sup>

## ABSTRACT

*Methamphetamine was the primary drug of concern in San Diego in 2009, ranking first among drugs of abuse in the treatment system and prevalence of recent use among female arrestees. It ranked second only to marijuana in prevalence among male and juvenile arrestees and in number of items tested at local forensic laboratories. Most methamphetamine indicators have been decreasing since peaking in 2005; however, a substantial increase in recent use among female arrestees—from 31 percent in 2008 to 39 percent in 2009—suggests that use may be increasing again in some subgroups. Post-2005 reductions in use and abuse have been attributed to a decreased supply of methamphetamine precursors (i.e., ephedrine, pseudoephedrine) with concurrent decreases in purity and increases in price. However, the maximum street price paid for methamphetamine in San Diego in 2009 was lower than in 2008; whether this indicates a trend toward lower overall prices for methamphetamine, which might be associated with increases in use, remains unclear. Overdose deaths involving amphetamines were up slightly, from 83 in 2008 to 87 in 2009, but still remained well below the 2005 peak of 113 deaths. Cocaine indicators suggested that use and abuse of the drug was decreasing. There were 763 primary treatment admissions for cocaine/crack in 2009, compared with 995 admissions in 2008, and prevalence of recent use among both male and female adult arrestees was at its lowest level since prior to 2000 (7 and 11 percent, respectively). Likewise,*

*prevalence among juveniles was at the lowest level since testing began in 2004. Heroin indicators were relatively stable with the exception of overdose deaths. There were 118 overdose deaths involving heroin/morphine, the highest number of deaths since 2002. There were also increases in the street price of Mexican black tar heroin, which could be indicative of higher purity. Primary treatment admissions for oxycodone and other prescription opiates decreased from 594 in 2008 to 553 in 2009; however, within that category primary oxycodone admissions decreased while admissions for other prescription opiates increased. Marijuana was the drug most commonly counted among local forensic laboratories (51.7 percent of items tested) and detected in urine testing of juvenile arrestees. Fifty-one percent of juveniles tested positive for marijuana in 2009, a substantial increase from the 44-percent prevalence in 2008.*

## INTRODUCTION

### Area Description

San Diego County is the southwestern-most county of California and shares 80 miles of border with Mexico. The San Ysidro border crossing, which links San Diego with its sister city of Tijuana, Mexico, is the busiest border crossing in the world, accommodating approximately 40 million legal crossings annually. Both Tijuana and San Diego County are located on major drug trafficking routes that bring illicit drugs from Mexico and South America to the United States. In particular, San Diego is a major transshipment point for both methamphetamine and marijuana.

San Diego County's total population was estimated at 3.2 million in 2009 (exhibit 1). The county is home to a growing Hispanic (predominantly Mexican) population. Overall, 30.2 percent are Hispanic and 49.8 percent are non-Hispanic White. Smaller population groups are Asian and Pacific Islander (10.6 percent), non-Hispanic African-American (5.2 percent), American Indian (0.5 percent) and other races/ethnicities (3.6 percent) (exhibit 1).

<sup>†</sup>The author is an Assistant Professor, Department of Medicine, University of California, San Diego.

## Data Sources

The data sources used in this report are listed below:

- **Arrestee data** were provided by the San Diego Association of Governments (SANDAG) Substance Abuse Monitoring (SAM) program, a regional continuation of the Federal Arrestee Drug Abuse Monitoring (ADAM) program that was discontinued in 2003. This report presents 2009 data for both adult ( $N=766$ ) and juvenile ( $N=154$ ) arrestees.
- **Drug price data** came from the San Diego Law Enforcement Coordination Center's "2010 Street Drug Price List," which reports on street-level drug buys conducted in San Diego County in 2009.
- **Forensic laboratory data** came from the National Forensic Laboratory Information System (NFLIS), Drug Enforcement Administration (DEA), for calendar year (CY) 2009. There were 20,941 drug items analyzed by local forensic laboratories between January and December, 2009.
- **Treatment data** were provided by the San Diego Department of Alcohol and Drug Programs (ADP) (tables produced by the California Department of Alcohol and Drug Programs) using the California Outcomes Measurement System (CalOMS). CalOMS is a statewide client-based data collection and outcomes measurement system for alcohol and other drug (AOD) prevention and treatment services. Submission of admission/discharge information for all clients is required of all counties and their subcontracted AOD providers, all direct contract providers receiving public AOD funding, and all private-pay licensed narcotic treatment providers. Data for the current report include admissions to San Diego County for the period January–December 2009. CalOMS was implemented in early 2006 (replacing the earlier California Alcohol and Drug Data System [CADDSS]); data reported for periods prior to July 2006 may not be comparable to more recent periods.

- **Mortality data** were obtained from the Emergency Medical Services Medical Examiner Database, which is maintained by the County of San Diego Health and Human Services Agency.
- **Acquired immunodeficiency syndrome (AIDS) data and human immunodeficiency virus (HIV) data** were taken from the San Diego County Health and Human Services Agency's 2009 HIV/AIDS Epidemiology Report. Transition to a new database has caused delays in reporting these data; accordingly, only data through December 31, 2008 are included in this report.

## DRUG ABUSE PATTERNS AND TRENDS

### Methamphetamine

Most indicators of methamphetamine use and abuse peaked in 2005, followed by declines in 2006–2008. In contrast, treatment admissions peaked a year later, in 2006, followed by declines in 2007–2009. Overall, methamphetamine treatment admissions declined from 5,547 in 2006 to 4,170 in 2009 (exhibit 2). Although primary methamphetamine use still accounted for the highest overall number treatment admissions in 2009, these admissions accounted for 29.2 percent of all admissions in 2009, compared with 38.7 percent in 2006. A majority of the 2009 treatment admissions were male (53.1 percent), and almost one-half (49.2 percent) were non-Hispanic White, with an overall racial and ethnic distribution similar to that of the San Diego population. The most common secondary drugs of abuse among primary methamphetamine users were marijuana (29.5 percent) and alcohol (25.5 percent), with 34.3 percent citing no secondary drug (exhibit 3).

In a comparison of 2009 treatment admissions data with 2006 (data not shown), there were also notable changes in the demographics of primary methamphetamine admissions. In 2009, admissions were more likely than in 2006 to be female (46.9 versus 42.9 percent), age 35 or older (50.6 versus 46.3), and cite smoking as the

primary route of administration (74.3 versus 70.8 percent). There was a concurrent decrease both in the proportion of clients age 18–25 being admitted for treatment (16.9 versus 19.4 percent) and the proportion of admissions citing inhalation as their primary route of administration (8.5 versus 10.3 percent). There were no notable changes in the race and ethnicity of treatment admissions during the period 2006–2009.

The prevalence of methamphetamine-positive urine tests among arrestees in San Diego County also reached an all-time high in 2005 and then declined through 2008; however, 2009 saw a reversal of this trend with prevalence among adult females increasing from 31 percent in 2008 to 39 percent in 2009 (exhibit 4). Prevalence among adult males increased slightly, from 20 percent in 2008 to 22 percent in 2009. In contrast, prevalence among juvenile arrestees was 6 percent in 2009, compared with 10 percent in 2008, down from a high of 21 percent in 2005.

Although 2009 methamphetamine prices appeared for the most part stable compared with 2008, it is important to note that the maximum price for the price range at each quantity was lower than that reported in 2008 (exhibit 5). Whether this is indicative of a trend toward lower methamphetamine prices in San Diego County is unclear.

In 2009, there were 87 overdose deaths (rate 2.72 per 100,000) in San Diego County involving amphetamines (including methamphetamine), up slightly from 83 deaths in 2008 but still much lower than the peak of 113 deaths (rate 3.70 per 100,000) in 2005 (exhibit 6).

Of the 20,941 items tested in forensic laboratories in 2009, 4,220 (20.2 percent) contained methamphetamine (exhibit 7), ranking methamphetamine second only to marijuana/cannabis (10,828 items) in this indicator category.

### Cocaine/Crack

Cocaine indicators suggested that use and abuse of the drug was decreasing. There were 763 primary treatment admissions for cocaine/crack in 2009 (exhibit 3), accounting for 5.4 percent of all treatment admissions, substantially lower than the 995

admissions reported in 2008. Three-quarters (73.0 percent) of cocaine admissions in 2009 were age 35 or older; two-thirds (64.4 percent) were male; and more than one-half (57.5 percent) were Black non-Hispanic. A majority cited at least one secondary substance of abuse, most commonly alcohol (35.1 percent) or marijuana (20.3 percent), while 30.3 percent cited no secondary substance of abuse (exhibit 3).

Among adult arrestees, only 7 percent of males and 11 percent of females tested positive for cocaine in 2009, compared with 8 percent and 12 percent respectively in 2008 (exhibit 4). This is the lowest prevalence for both males and females since prior to 2000. Similarly, 1 percent of juvenile arrestees tested positive for cocaine in 2009, the lowest level since juvenile testing for the drug began in 2004. The percentage of drug items analyzed by forensic laboratories in 2009 that tested positive for cocaine were also down, with 9.4 testing positive in 2009 (exhibit 7), compared with 13.6 percent in 2008. Cocaine continued to rank third in the number of NFLIS items, after marijuana/cannabis and methamphetamine.

In its *National Drug Threat Assessment 2010*, the National Drug Information Center (NDIC) reported reductions in cocaine indicators across the United States and attributed these reductions to reduced quantities entering the United States since 2007, with concurrent decreases in purity and increases in price. However, cocaine prices in San Diego County during that period remained stable (exhibit 5). The most recent street price for 1 gram was \$60–\$150, and pound quantities sold for \$8,000–\$10,000; these prices are almost identical to those reported in 2006.

### Heroin

There were 2,763 primary treatment admissions (19.4 percent) for heroin in 2009, similar to the 2,777 admissions (18.5 percent) in 2008 (exhibit 3). Clients admitted to treatment in 2009 were predominantly male (70.8 percent) and White non-Hispanic (57.0 percent). Although a majority of clients admitted for primary heroin use traditionally have been older (i.e., age 35 or older), those younger than

35 constituted the majority (55.7 percent) in 2009. Overall, most primary heroin admissions (75.0 percent) reported injection as their primary route of administration and 41.1 percent reported no other drug of abuse. The most common secondary drugs reported were methamphetamine (16.8 percent), cocaine/crack (9.2 percent), marijuana (11.7 percent), and alcohol (9.7 percent) (exhibit 3).

Few arrestees tested positive for heroin, and the proportion of positives has remained relatively stable over time (exhibit 4). In 2009, 6 percent of male arrestees, 8 percent of female arrestees, and 1 percent of juveniles tested positive for heroin. In contrast, there was an increase in the number of overdose deaths involving heroin/morphine; there were 118 of these overdoses in 2009, the highest number reported since 2003 (exhibit 6). The street price of Mexican black tar heroin increased in San Diego County in 2009 (exhibit 5). Price per pound was \$12,000–\$14,000 in 2009, compared with \$8,000–\$10,000 in 2008, and the price per quarter gram also increased slightly. Of the drug items analyzed by forensic laboratories in 2009, only 3.7 percent were heroin items (exhibit 7), ranking fourth after marijuana/cannabis, methamphetamine, and cocaine.

### **Oxycodone and Other Prescription Opiates**

There were 553 treatment admissions for primary abuse of oxycodone and other prescription opiates in 2009 (exhibit 3), down from 594 in 2008. In 2009, there were 324 primary admissions for oxycodone and 229 for other prescription opiates, a decrease and increase respectively from 2008 (exhibit 8). Admissions for oxycodone and the other opiates differed substantially with regard to demographics (data not shown). First, 29.6 percent of oxycodone admissions were female, compared with 52.0 percent of other opiates admissions. Second, oxycodone admissions were younger, with the distribution among age groups younger than 18, age 18–25, age 26–34, and 35 or older being 1.5, 38.3, 30.9, and 29.3 percent, respectively, compared with 1.7, 15.3, 26.6, and 56.3 percent, respectively, for the other opiates. Third, while

88.6 percent of other opiate admissions cited oral administration as their primary route, only slightly more than one-half (60.2) did so for oxycodone, while 22.8 percent inhaled the drug; 14.8 percent smoked it; and 1.5 percent injected it.

Of the drug items analyzed by forensic laboratories in 2009 (exhibit 7), 447 (2.1 percent) were hydrocodone, ranking sixth behind marijuana/cannabis, methamphetamine, cocaine, heroin and uncontrolled nonnarcotic drugs. There were also 321 oxycodone items, 94 morphine items, 92 methadone items, 70 buprenorphine items, and 66 codeine items.

### **Marijuana**

There were 2,839 primary treatment admissions (19.9 percent) for marijuana in 2009, identical to the 2,839 admissions (18.9 percent) in 2008 (exhibit 3). A majority (74.4 percent) of the 2009 admissions were male and younger than 18 (55.2 percent). Hispanics were overrepresented among these admissions (49.7 percent). Alcohol was the leading secondary substance of abuse among primary marijuana users (43.4 percent), followed by no secondary substance (33.6 percent), methamphetamine (12.6 percent), and cocaine (3.8 percent).

The proportion of arrestees testing positive for marijuana (exhibit 4) in 2009 was 37 percent for adult males and 28 percent for adult females. Notably, prevalence among juvenile arrestees rose substantially in 2009 to 51 percent, compared with 44 percent in 2008.

The price of marijuana (Mexican) per pound was down slightly in 2009, estimated at \$380–\$500, compared with \$400–\$600 in 2008. Price per ounce in 2009 (\$60–\$100) was unchanged from 2008, and price per one-quarter ounce was \$75–\$100, somewhat similar to the \$40–\$100 estimate in 2008. Of the drug items analyzed by forensic laboratories in 2009, more than one-half (51.7 percent) were marijuana/cannabis items (exhibit 7). This made marijuana/cannabis the leading item analyzed by San Diego County laboratories, with more than twice as many items as the second leading drug, methamphetamine.

## MDMA, Ecstasy

There were few primary treatment admissions for MDMA (3,4-methylenedioxymethamphetamine) or ecstasy in 2009 ( $n=54$ ) (data not shown). These admissions were evenly divided between males ( $n=28$ ) and females ( $n=26$ ), and were mostly among clients younger than 18 ( $n=35$ ). An additional 113 clients cited ecstasy as their secondary drug of abuse, most commonly secondary to marijuana ( $n=68$ ) or methamphetamine ( $n=22$ ). There were 396 MDMA items analyzed at San Diego County laboratories (exhibit 7).

## Alcohol

There were 2,974 primary treatment admissions (20.9 percent) for alcohol in 2009 (exhibit 3). Those admitted were predominantly male (51.5 percent), White non-Hispanic (57.3 percent), and age 35 or older (59.8 percent). Forty-two percent of admissions cited no secondary drug of abuse. Marijuana was the secondary drug in 27.3 percent of cases, followed by methamphetamine (17.2 percent) and cocaine/ crack (7.3 percent). Few reported secondary abuse of heroin (2.0 percent) or other opiates (2.3 percent).

## INFECTIOUS DISEASES RELATED TO DRUG ABUSE

### AIDS

There were 13,820 cumulative AIDS cases in San Diego County through December 31, 2008, including 6,676 currently living with AIDS. Thirty-five percent of AIDS cases among females between 1981 and 2008 were attributed to injection drug use, and 21 percent to sex with an injection drug user (IDU). Focusing on the more recent period, 2004–2008, the proportion of cases among females attributed to injection drug use was lower, with 20 percent attributed directly to injection, and 17 percent to sex with an IDU. There was also evidence of substantial shifts in the demographic makeup of injection-related cases over time. While the proportion of AIDS cases attributed to injection drug

use among White females remained constant at 38 percent in both 1989–1993 and 2004–2008, the proportion of cases attributed to injection among Black females decreased from 56 to 10 percent during the same time periods. Similarly, the proportion of cases among Hispanic females attributed to injection drug use decreased from 22 to 16 percent. It should be noted that these reductions among Black and Hispanic females were offset by substantial increases in cases attributed to heterosexual transmission, which may include sex with IDUs.

Among males, IDUs and men who have sex with men (MSM) and also inject drugs (MSM/IDU) accounted for 7 and 11 percent of cumulative cases, respectively, from 1981 to 2008. Roughly the same proportions (8 and 10 percent) were reported for the more recent 2004–2008 period. Black males shoulder a disproportionate burden of AIDS in San Diego County, with 19 and 13 percent of AIDS cases among Black males in 1989–1993 and 2004–2008, respectively, attributed to injection drug use, compared with only 3 and 7 percent among Whites, and 11 and 7 percent among Hispanics. The same is true of cases attributed to MSM/IDU. Thirteen and 10 percent of cases among Black males were attributed to MSM/IDU in 1989–1993 and 2004–2008, respectively, compared with 9 and 13 percent among Whites, and 10 and 7 percent among Hispanics.

### HIV

In 2006, the State of California transitioned to names-based reporting of HIV cases, consistent with recommendations from the Centers for Disease Control and Prevention (CDC). Effective April 2006, the State stopped reporting updated statistical information on HIV cases reported before implementation of the names-based system. Accordingly, cumulative HIV case counts now reflect unduplicated HIV case counts reported by name to the California Department of Health Services Office of AIDS beginning April 17, 2006. From April 17, 2006 through December 31, 2008 there were 3,847 cumulative HIV cases in San Diego County, of whom 3,452 (90 percent) were



male. Among males, 4 percent of these cases were attributed to injection drug use and 8 percent to MSM/IDU. Among females, 23 percent of cases were attributed to injection drug use and 8 percent to sex with an IDU.

Among male cases, injection drug use accounted for 9.1 percent of cases among Blacks, compared with 3.4 and 4.3 percent of cases among Whites and Hispanics, respectively. Black males also had the highest proportion of cases attributed to MSM/IDU (9.9 percent), compared with 8.2 percent among White males, and 5.5 percent among

Hispanic males. Among females, the largest proportion of cases attributed to injection drug use was among Whites (32.1 percent), followed by Blacks (25.2 percent), and Hispanics (15.7 percent).

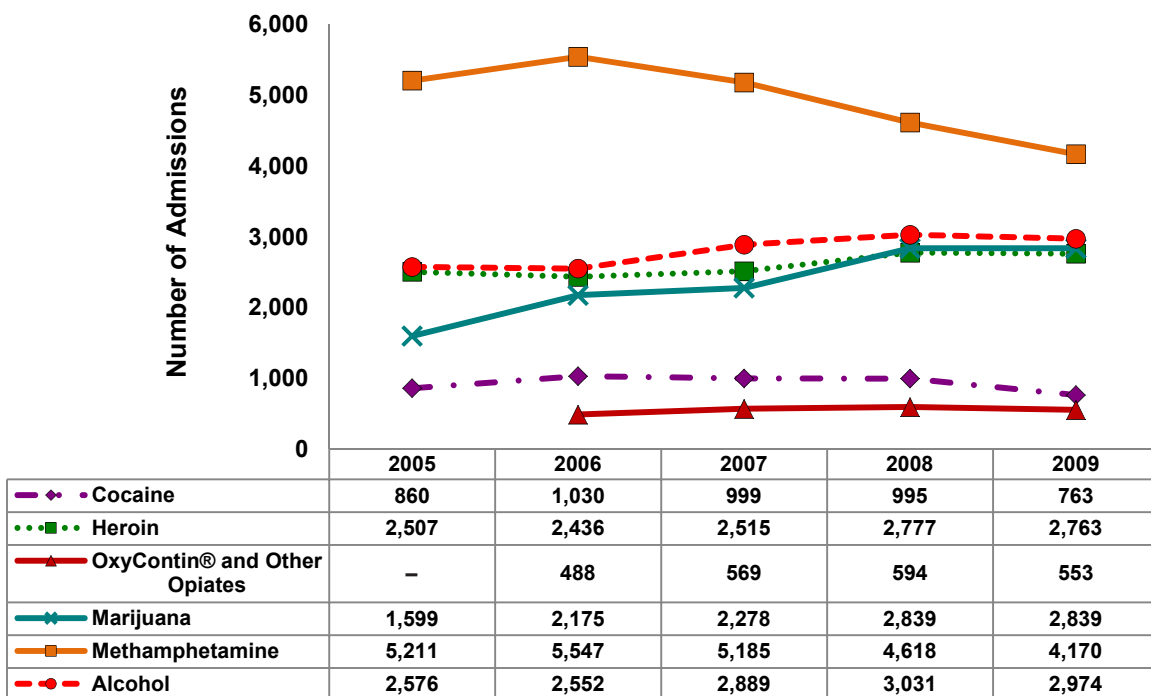
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**Exhibit 1. San Diego County Demographics, by Percent: 2009**

Race/Ethnicity	2009 (N=3,173,407)
White	49.8
Black or African-American	5.2
Asian/Pacific Islander	10.6
American Indian	0.5
Other race	3.6
Hispanic/Latino	30.2
Median age	35.0
Median household income (current \$)	\$72,963

SOURCE: San Diego Association of Governments Population and Housing Estimates

**Exhibit 2. Number of Treatment Admissions by Primary Drug, San Diego County: 2005–2009**



SOURCE: California Outcomes Measurement System (CalOMS)

**Exhibit 3. Characteristics of Clients Admitted to Treatment, San Diego County: 2009**

	Primary Drug							Total (%)
	Alcohol (%)	Cocaine/ Crack (%)	Heroin (%)	Oxycodone and Other Opiates (%)	Marijuana (%)	Meth-amphetamines (%)	All Other (%)	
Total admissions	2,974 (20.9)	763 (5.4)	2763 (19.4)	553 (3.9)	2,839 (19.9)	4,170 (29.2)	196 (1.4)	14,258 (100.0)
<b>Sex</b>								
Male	1,533 (51.5)	491 (64.4)	1,956 (70.8)	338 (61.1)	2,111 (74.4)	2,214 (53.1)	122 (62.2)	8,765 (61.5)
Female	1,441 (48.5)	272 (35.6)	807 (29.2)	215 (38.9)	728 (25.6)	1,956 (46.9)	74 (37.8)	5,493 (38.5)
<b>Race/Ethnicity</b>								
White (non-Hispanic)	1,704 (57.3)	145 (19.0)	1,575 (57.0)	438 (79.2)	770 (27.1)	2,050 (49.2)	80 (40.8)	6762 (47.4)
Black (non-Hispanic)	304 (10.2)	439 (57.5)	105 (3.8)	20 (0.7)	368 (13.0)	274 (6.6)	52 (26.5)	1,562 (11.0)
American Indian	88 (3.0)	* (*)	27 (1.0)	* (*)	39 (1.3)	65 (1.6)	* (*)	232 (1.6)
Asian/Pacific Islander	40 (1.3)	* (*)	39 (1.4)	* (*)	51 (1.8)	206 (4.9)	* (*)	358 (2.5)
Hispanic	744 (25.0)	127 (16.6)	938 (33.9)	64 (11.6)	1,410 (49.7)	1,382 (33.1)	40 (20.4)	4,705 (33.0)
Other Races/ Ethnicities	94 (3.2)	38 (5.0)	79 (2.9)	19 (3.4)	201 (7.1)	193 (4.6)	15 (7.7)	639 (4.5)
<b>Age</b>								
<17	291 (9.8)	25 (3.3)	22 (0.8)	* (*)	1,568 (55.2)	86 (2.1)	59 (30.1)	2,060 (14.4)
18-25	354 (11.9)	63 (0.4)	705 (25.5)	159 (28.8)	609 (21.5)	703 (16.9)	34 (17.3)	2,627 (18.4)
26-34	552 (18.6)	118 (15.5)	813 (29.4)	161 (29.1)	373 (13.1)	1,272 (30.5)	46 (23.5)	3,335 (23.4)
>35	1,777 (59.8)	557 (73.0)	1,223 (44.3)	224 (40.5)	289 (10.2)	2,109 (50.6)	57 (29.1)	6,236 (43.7)

Note: \*Indicates cell size &lt;15 admissions.

SOURCE: California Outcome Measurement System (CalOMS)

## Exhibit 3, Continued. Characteristics of Clients Admitted to Treatment, San Diego County: 2009

	Primary Drug							Total (%)
	Alcohol (%)	Cocaine/crack (%)	Heroin (%)	Other opiates (%)	Marijuana (%)	Meth-amphetamines (%)	All other (%)	
<b>Route</b>								
Oral	2974 (100.0)	* (*)	* (*)	398 (72.0)	21 (0.7)	49 (1.2)	118 (60.2)	3,581 (25.1)
Smoking	* (*)	603 (79.0)	579 (21.0)	57 (10.3)	2812 (99.0)	3,099 (74.3)	60 (30.6)	7,210 (50.6)
Inhalation	* (*)	135 (17.7)	98 (3.5)	78 (14.1)	* (*)	355 (8.5)	* (*)	686 (4.8)
Injection	* (*)	15 (2.0)	2,072 (75.0)	15 (2.7)	* (*)	663 (15.9)	* (*)	2,767 (19.4)
Unknown/other	* (*)	* (*)	* (*)	* (*)	* (*)	* (*)	* (*)	* (*)
<b>Secondary drug</b>								
None	1,248 (42.0)	231 (30.3)	1,136 (41.1)	246 (44.5)	954 (33.6)	1,429 (34.3)	49 (25.0)	5,293 (37.1)
Alcohol	0 (0.0)	268 (35.1)	269 (9.7)	51 (9.2)	1231 (43.4)	1,063 (25.5)	38 (19.4)	2,920 (20.5)
Cocaine/crack	218 (7.3)	0 (0.0)	254 (9.2)	* (*)	109 (3.8)	153 (3.7)	* (*)	759 (5.3)
Heroin	58 (2.0)	21 (2.8)	0 (0.0)	62 (11.2)	26 (0.9)	185 (4.4)	* (*)	357 (2.5)
Other opiates	67 (2.3)	* (*)	245 (8.9)	70 (12.7)	31 (1.1)	36 (0.9)	* (*)	468 (3.3)
Marijuana	812 (27.3)	155 (20.3)	323 (11.7)	56 (10.1)	0 (0.0)	1,230 (29.5)	55 (28.1)	2,631 (18.5)
Methamphetamines	513 (17.2)	65 (8.5)	464 (16.8)	21 (3.8)	357 (12.6)	0 (0.0)	16 (8.2)	1,436 (10.1)
All other	58 (2.0)	* (*)	72 (2.6)	35 (6.3)	131 (4.6)	74 (1.8)	* (*)	394 (2.8)

Note: \*Indicates cell size &lt;15 admissions.

SOURCE: California Outcome Measurement System (CalOMS)

**Exhibit 4. Percent Positive Tests for Illicit Drugs Among Adult and Juvenile Arrestees, San Diego County: 2005–2009**

	2005	2006	2007	2008	2009
<b>Methamphetamine</b>					
Male Adults	44	36	24	20	22
Female Adults	51	47	44	31	39
Juveniles	21	10	8	10	6
<b>Cocaine</b>					
Male Adults	11	13	11	8	7
Female Adults	15	21	16	12	11
Juveniles	6	5	3	2	1
<b>Heroin/Opiates</b>					
Male Adults	5	5	6	6	6
Female Adults	9	8	8	7	8
Juveniles	2	1	1	1	1
<b>Marijuana</b>					
Male Adults	34	40	37	36	37
Female Adults	31	31	29	26	28
Juveniles	44	43	40	44	51

SOURCE: San Diego Association of Governments, Substance Abuse Monitoring Program

**Exhibit 5. Retail Prices for Selected Drugs, San Diego County: 2006–2010<sup>1</sup>**

Drug	2006	2007	2008	2009	2010
<b>Cocaine</b>					
One-quarter Gram	\$30–\$100	\$50–\$100	\$50–\$100	\$50–\$100	\$50–\$75
Gram	\$60–\$160	\$60–\$150	\$60–\$15	\$60–\$150	\$60–\$150
Ounce	\$500–\$800	\$600–\$1,000	\$600–\$1,000	\$700–\$1,000	\$800–\$1,000
Pound	\$6,500– \$10,000	\$6,000– \$10,000	\$8,000– \$10,000	\$8,000– \$10,000	\$8,000– \$10,000
<b>Heroin (black tar)</b>					
One-quarter Gram	\$20	\$25–\$40	\$15–\$50	\$15–\$50	\$25–\$60
Gram	\$50–\$100	\$80	\$80–\$100	\$60–\$80	\$50–\$80
Ounce	\$500–\$1,200	\$600	\$600–\$1,200	\$600–\$1,200	\$800–\$1,000
Pound	\$17,000	\$17,000	\$10,000– \$17,000	\$8,000– \$10,000	\$12,000– \$14,000
<b>Marijuana</b>					
One-quarter Ounce	\$30–\$50	\$30–\$50	\$40–\$100	\$40–\$100	\$75–\$100
Ounce	\$80–\$100	\$80–\$100	\$80–\$150	\$60–\$100	\$60–\$100
Pound	\$250–\$300	\$250–\$300	\$300–\$400	\$400–\$600	\$380–\$500
<b>Methamphetamine</b>					
One-quarter Gram	\$20–\$25	\$20–\$25	\$20–\$25	\$20–\$50	\$20–\$40
Gram	\$50–\$100	\$50–\$100	\$75–\$100	\$75–\$100	\$60–\$80
Ounce	\$600–\$1,000	\$750–\$1,000	\$500–\$1,500	\$500–\$1,500	\$750–\$1,200
Pound	\$6,000– \$10,000	\$9,000– \$12,500	\$10,000– \$20,000	\$8,000– \$15,000	\$9,000– \$12,000

<sup>1</sup>All data reported are collected during the prior year (e.g., data reported in 2009 are collected in 2008).

SOURCE: San Diego Association of Governments, Substance Abuse Monitoring Program

**Exhibit 6. Deaths Due to Drug Overdose Involving Amphetamine and/or Heroin/ Morphine, San Diego County: 2001–2009**

Year	Amphetamine-Involved Drug Deaths		Heroin/Morphine-Involved Drug Deaths	
	Number	Rate <sup>1</sup>	Number	Rate <sup>1</sup>
2001	58	2.03	107	3.74
2002	93	3.18	129	4.42
2003	99	3.33	116	3.90
2004	105	3.48	87	2.89
2005	113	3.70	90	2.95
2006	88	2.87	84	2.74
2007	98	3.16	109	3.52
2008	83	2.64	105	3.34
2009	87	2.72	118	3.69

<sup>1</sup>Rates per 100,000.

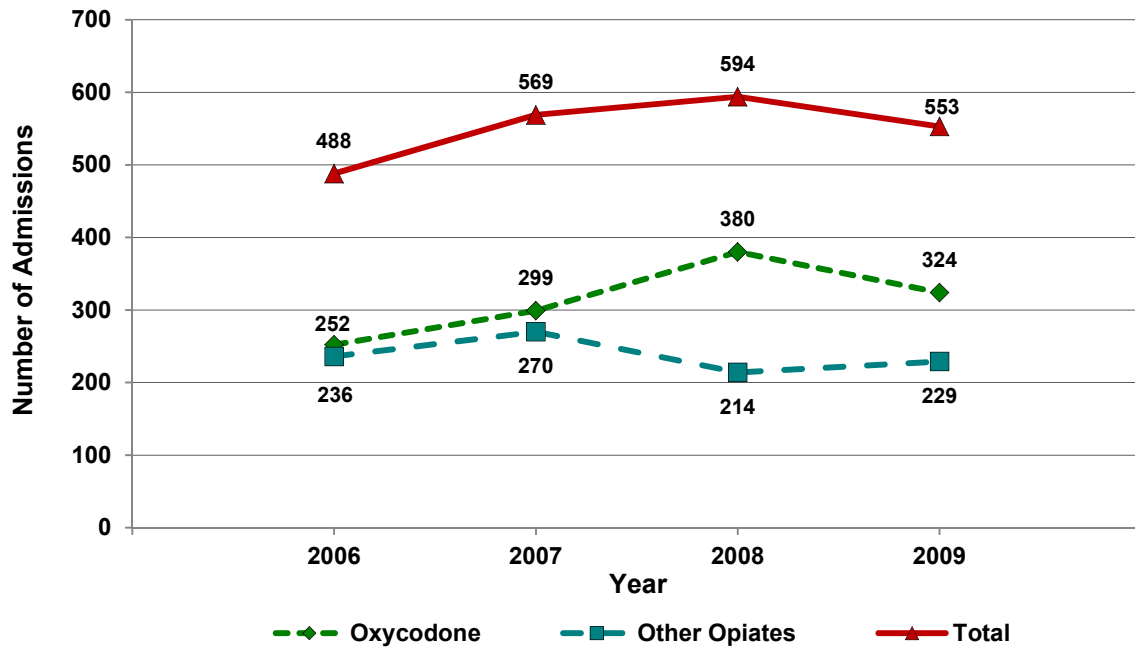
SOURCE: County of San Diego Health and Human Services Agency, Emergency Medical Services Medical Examiner Database

**Exhibit 7. Number and Percent of Selected Items Analyzed by Forensic Laboratories, San Diego County: 2009**

Drug	Number	Percent
Marijuana/Cannabis	10,828	51.7
Methamphetamine	4,220	20.2
Cocaine	1,961	9.4
Heroin	781	3.7
Hydrocodone	447	2.1
MDMA	396	1.9
Oxycodone	321	1.5
Morphine	94	0.4
Methadone	92	0.4
Buprenorphine	70	0.3
Codeine	66	0.3
All other drugs	1,665	8.0
<b>Total</b>	<b>20,941</b>	<b>100.0</b>

SOURCE: NFLIS, DEA

**Exhibit 8. Number of Primary Treatment Admissions for Oxycodone and Other Prescription Opiates, San Diego County: 2006–2009**



SOURCE: California Outcomes Measurement System (CalOMS)

# Patterns and Trends of Drug Abuse in the San Francisco Bay Area: 2009

John A. Newmeyer, Ph.D.<sup>1</sup>

## ABSTRACT

*Cocaine remained prominent in the San Francisco Bay area, but all indicators (admissions, emergency department [ED] data, deaths, and prices) suggested that a gradual decrease had begun. The proportion of Whites among problem users increased, and the median age of such users was older than 40. Most indicators—ED reports, deaths, and prices, but not admissions—reflected a resumed decline in heroin usage in the bay area. Persons younger than 25 comprised only 8 percent of ED reports in 2008. Indicators for synthetic opiates (hydrocodone and oxycodone) usage rose substantially from 2007 to 2008, albeit from a low level. Trends were downward for all indicators for methamphetamine. However, admissions for “speed” abuse were nearly as numerous as those for cocaine and heroin. Marijuana was prominent as a young persons’ drug, with ED reports up slightly, and prices also up modestly. Problem-related use of club drugs and hallucinogens remained rare. AIDS case incidence continued to decelerate among drug injectors. It appeared unlikely that heterosexual injection drug users will ever comprise more than 8 percent of the cumulative AIDS caseload.*

## INTRODUCTION

### Area Description

The San Francisco Bay area consists of the following counties: San Francisco, San Mateo, and Marin in the west bay area, and Alameda and

Contra Costa in the east bay area. The population was estimated at 4,318,000 in July 2009. The population is among the most multicultural of any urban region of the United States, with a particularly large, varied, and long-established Asian-American representation (22 percent of the total). The Hispanic population (20 percent of the total) represents a wide cross-section of persons of Latin-American origin. Blacks account for just over 9 percent of bay area residents. San Francisco County has long been a Mecca for gays; gay men constitute more than 15 percent of the adult male population.

The bay area experienced its initial growth during the California gold rush. In the succeeding century and a half, it expanded greatly as a center for shipping, manufacturing, finance, and tourism. In recent years, Pacific Basin trade and high technology, such as software and biotechnology development, have led to further expansion and to a highly diversified economy. The bay area is similar to Boston and Seattle in its strong presence of “knowledge-based” companies.

There have been two serious economic shocks to the bay area during the past decade. The “dot-com bust” helped to cause unemployment to rise from 2 to 6 percent between 2001 and 2003. From 2003 onward, the economy gradually recovered, but in the spring of 2008 the bay area began to suffer a severe recession; by April 2010, unemployment was 9.5 percent in the west bay area and fully 11.4 percent in the east bay area.

### Data Sources

The sources of data for the drug abuse indicators within this report are described below:

- **Treatment admissions data** were available for all five bay area counties for fiscal year (FY) 2009 from the California Alcohol and Drug Programs. These were compared with similar date for FYs 2007 and 2008. In addition, admissions data for San Francisco County were provided by the San Francisco Department of Public Health for FYs 2006 and 2008 and the first half of FY 2010.

<sup>1</sup>The author is affiliated with the HIV Planning Council, in San Francisco, California.



- **Emergency department (ED) data** were provided by the Drug Abuse Warning Network (DAWN), Office of Applied Studies (OAS), Substance Abuse and Mental Health Services Administration (SAMHSA). Data for 2008 are for the five counties of the San Francisco Bay area. Thirty-four eligible hospitals in the area are in the DAWN sample, with 35 EDs. In 2008, between 11 and 14 EDs reported data each month, with most reporting data that were basically complete (90 percent or greater; see exhibit 1). Drug reports exceed the number of ED visits because a patient may report use of multiple drugs (up to six drugs plus alcohol). Weighted ED data for calendar years 2006 through 2008 released by SAMHSA was used for trend analysis (exhibit 2). The data represent estimated drug-involved visits for illicit drugs (derived from the category of “major substances of abuse, excluding alcohol”) and the nonmedical use of selected prescription drugs (derived from the category of “other substances”). A full description of the DAWN system can be found at the DAWN Web site <http://dawninfo.samhsa.gov>.
- **Medical examiner (ME) data** on drug mentions in decedents were provided by the San Francisco County Medical Examiner for that county for FYs 2006 and 2007.
- **Price and purity data** came from the Drug Enforcement Administration (DEA), Domestic Monitor Program (DMP), and referenced heroin “buys,” mostly made in San Francisco County. Data for 2008 were compared with data from 2001 through 2007. Data on trafficking in heroin and other drugs were available in the report, *National Illicit Drug Prices*, of the National Drug Intelligence Center (NDIC) and pertained to wholesale, mid-level, and retail prices prevailing in San Francisco in midyear 2009.
- **Drug seizure data** were provided by the National Forensic Laboratory Information System (NFLIS) for calendar year (CY) 2009.
- **Acquired immunodeficiency syndrome (AIDS) surveillance data** were provided by

the San Francisco Department of Public Health (SFDPH) and covered the period through March 31, 2010.

- **Reported drug use by students data** were provided by the Youth Risk Behavior Survey (YRBS) for the year 2007.

## DRUG ABUSE PATTERNS AND TRENDS

### Cocaine/Crack

Cocaine remained prominent in the bay area in 2009, but all indicators (admissions, ED data, deaths, and prices) suggested that a gradual decline had begun. The proportion of Whites among problem users increased, and the median age of such users was now older than 40. In the five-county bay area, the count of cocaine admissions increased from FY 2007 to FY 2009, but the proportion of cocaine among all admissions declined slightly (exhibit 3). Smoked cocaine led all other drugs among Black clients (48 percent) and among clients older than 35 (22 percent). From FY 2006 to FY 2008 and then in the first half of FY 2010, there was a steady decline in the proportion of cocaine among all drug admissions in San Francisco County (exhibit 4).

Estimated cocaine-involved weighted DAWN visits for the period from 2006 through 2008 showed a decline to 2008, both in raw numbers and proportion of total reports (exhibit 2). In 2008, the cocaine-involved visits were 66 percent male; 45 percent White; 43 percent Black; 10 percent younger than 25; and 71 percent older than 35. The DAWN data reflect a steady increase of visits over age 45, which by 2008 comprised 41 percent of those whose age was known. The proportion of cocaine-involved visits for Whites also showed an increase from 2006 to 2008, while those for Blacks showed a corresponding decrease.

Cocaine was found in 213 decedents in San Francisco County in FY 2007, a decline from 231 cocaine-related deaths in FY 2006. In FY 2007, these decedents were 82 percent male, 38 percent White,

and 47 percent Black; the median age was about 47. Lifetime cocaine use reported by San Francisco students in 2007 was only 4.6 percent, compared with 7.2 percent reported by all U.S. students.

Local prices for powder cocaine in midyear 2009 were \$22,000 per kilogram, \$12,000 per pound, and \$750–\$850 per ounce. Crack prices were \$750–\$900 per ounce and \$20 per “rock.” Wholesale (kilogram and ounce) prices were significantly higher than in December 2007. During 2009, 25 percent of all drugs identified in San Francisco were cocaine, the same percentage as for the Nation as a whole.

## Heroin

Most indicators—ED data, deaths, and prices, but possibly not admissions—reflected a resumed decline in heroin usage in the bay area. Primary treatment admissions in the five-county San Francisco Bay area for heroin abuse declined gradually, from FY 2007 to FY 2009, as a proportion of all admissions (exhibit 3). Consistent with its prominence as an “older person’s drug,” heroin was second only to smoked cocaine among the older than 45 age group entering treatment, comprising 21 percent of all admissions older than 45 (alcohol comprised 40 percent of this cohort’s clients). San Francisco County had a steady proportion of heroin admissions among all admissions between FY 2006 and FY 2008, but then a sharp increase in the first half of FY 2010 (exhibit 4).

Weighted DAWN data for 2006 through 2008 showed a slight decline for heroin’s share of total drug-involved visits (exhibit 2). Heroin-involved visits in 2008 were 68 percent male; 72 percent White; 8 percent younger than 25; and 67 percent older than 35. The White proportion of heroin-involved ED visits increased in 2008 over 2006 or 2007.

Because many heroin users support their habits through property crimes, reported burglaries may be a good indicator of use. The number of such reports in San Francisco fell by 49 percent between 1993 and 1999 (11,164 to 5,704). After that low point, the count rose to 6,706 in 2001, fell to 5,507 in 2003, and rose gradually to 6,909 in 2006, the

highest in nearly a decade. These changes may reflect the price of heroin more than the prevalence of users; it is noteworthy that reported burglaries and the local price of heroin were both barely one-quarter of what they were 20 years ago.

The DMP tested heroin bought on the street in the San Francisco area during 2008. The samples from that year, all Mexican brown, averaged 8 percent milligram pure and \$1.07 per milligram (exhibit 5). This represents lower purity and higher price than any of the prior 6 years except 2007. Prices of Mexican black tar heroin were \$400 per ounce and \$40 per gram in midyear 2009. These prices represented modest increases over midyear 2008, but that year had seen a significant decline from 2002 when prices were \$450–\$850 per ounce and \$60 per gram. In CY 2009, just 4.5 percent of drug items seized in San Francisco were identified as heroin, compared with 7.0 percent for the entire Nation.

## Other Opiates/Narcotics

Treatment admissions data in 2008 reflected a lower proportion (3 percent) of “prescription painkillers” in the five-county bay area than in California or the United States as a whole. Weighted DAWN data for 2008 showed hydrocodone-involved ED visits to be occurring at 13 percent of the rate of cocaine-involved visits. Oxycodone-involved ED visits were occurring at 11 percent of cocaine’s rate. Estimated visits for both of these opiate synthetics rose substantially from 2007 to 2008 (exhibit 2).

Methadone remained a concern, in that weighted DAWN ED visits in 2008 numbered 586, fully one-third the count for heroin for that year. It was also the eighth most mentioned drug among drug items analyzed by NFLIS. Among drug items seized and identified in San Francisco in 2009, hydrocodone and oxycodone comprised 2.8 and 2.7 percent, respectively, about the same percentages as in the Nation as a whole. However, drug items seized and identified as methadone were twice as common in San Francisco as in the Nation as a whole (1.2 versus 0.6 percent). Likewise, seizures of morphine were twice as common locally as nationally (1.0 versus 0.5 percent).

## Methamphetamine/Amphetamines

Trends were downward for all indicators for methamphetamine. However, “speed” admissions remained close to those for heroin and cocaine in the San Francisco Bay area.

Methamphetamine represented 17 percent of primary treatment admissions in the five-county bay area in FY 2009, a decline from FY 2007 but still close to cocaine (21 percent) and heroin (18 percent) (exhibit 3). It was the leading drug among Whites, Hispanics, and Asian/Pacific Islanders, and also among the 25–34 age group. In San Francisco County, a steady decline in the proportion of amphetamine (which included methamphetamine) among all treatment episodes was noted between FYs 2006, 2008, and the first half of 2010 (exhibit 4).

Weighted DAWN ED data for 2006 through 2008 DAWN for methamphetamine showed this drug at 9.1 percent among all estimated drug-involved visits in 2006, but only 6.8 percent in 2008 (exhibit 2). Weighted DAWN methamphetamine-involved ED visits in 2008 were 80 percent male; 77 percent White; 18 percent younger than 25; and 54 percent older than 35.

In San Francisco County, methamphetamine-related deaths declined from 65 in FY 2006 to 53 in FY 2007. In FY 2007, these decedents were 92 percent male and 68 percent White, with a median age of approximately 44. In San Francisco in midyear 2009, a pound of “ice” methamphetamine sold in the \$14,000–\$20,000 range and an ounce sold for \$1,600, a modest decline from 2008. As expected, methamphetamine comprised a much larger proportion of all drugs items seized and analyzed in San Francisco as compared with the United States as a whole (22 versus 10 percent). Just 3.6 percent of San Francisco students in 2007 reported lifetime use of “speed,” a proportion slightly less than that for U.S. students as a whole (4.4 percent).

## Marijuana

Among primary treatment admissions in the bay area recorded in FY 2009, marijuana was fifth

behind alcohol, cocaine, heroin, and methamphetamine (exhibit 3; alcohol not shown in exhibit). Marijuana also comprised a smaller proportion of admissions in the bay area than in California or the Nation as a whole. However, marijuana was in first place among all substances for clients younger than 25. In San Francisco County, marijuana treatment admissions as a proportion of all admissions rose between FY 2006 and FY 2008, but then declined in the first half of FY 2010 (exhibit 4).

Weighted DAWN ED visit data showed a slight increase in the proportion of marijuana-involved visits from 5.9 percent in 2006 to 6.6 percent in 2008 (exhibit 2). Marijuana-involved ED visits in 2008 were 68 percent male; 62 percent White; 21 percent Black; 41 percent older than 30; and 26 percent younger than 21. The proportion of younger users was somewhat greater in 2008 than in 2006.

According to the NDIC, pound prices for sinsemilla marijuana were \$2,000–\$6,000, and ounce prices were \$300–\$800 in midyear 2009, a modest increase over the 1-year period since 2008. Domestic pounds were \$500–\$750 in midyear 2009. A large and increasing quantity of marijuana was sold legally from medical marijuana outlets to certified purchasers. These outlets offered a great variety of products—smokable and edible, mild or strong, local or imported—with the retail price evidently closely correlated with THC (tetrahydrocannabinol) content. Among drug items seized and identified locally in 2009, marijuana comprised just 27 percent, as compared with 37 percent for seizures for the Nation.

## Club Drugs

The NDIC reported that in midyear 2009, MDMA (3,4-methylenedioxymethamphetamine) sold for \$15–\$20 per tablet. MDMA-involved weighted DAWN ED visits showed a drop in the percentage of total drug-involved visits from 2006 to 2007, followed by a rise in 2008 (exhibit 2). GHB (gamma hydroxybutyrate)-involved weighted DAWN ED visits numbered 135 in 2008, a decline from 2007 (exhibit 2).

## PCP and LSD

Weighted DAWN ED visit data for 2006–2008 reflected a steady low, and possibly declining, frequency of PCP (phencyclidine)-involved ED visits (exhibit 2). There were only 90 reports of LSD (lysergic acid diethylamide) in the local DAWN data in 2008.

## INFECTIOUS DISEASES RELATED TO DRUG ABUSE

### AIDS

San Francisco County had a cumulative total of 28,439 AIDS cases through March 2010. Of these cases, 2,103 (7.4 percent) were heterosexual injection drug users (IDUs). Another 4,079 AIDS cases (14.3 percent) were men who have sex with men (MSM) who also injected drugs (MSM/IDUs). There were only 60 reported cases among lesbian IDUs. A total of 401 AIDS cases have been reported for transgender San Franciscans.

Since March 2009, cumulative AIDS cases have increased by 1.2 percent; heterosexual IDU cases have increased by 0.8 percent, MSM/IDU cases by 2.1 percent, transgender cases by 1.8 percent, and MSM (non-IDU) cases by 0.9 percent. For all of these risk groups, AIDS incidence has decelerated in the past year.

Among San Franciscans diagnosed in 2006 through 2009, heterosexual IDUs accounted for 10

percent of diagnoses, as compared with 10 percent among those diagnosed in 1994–1996; 14 percent of those diagnosed in 1997–1999; 14 percent of those diagnosed in 2000–2002; and 13 percent of those diagnosed in 2003–2005. The overall case numbers in 2003–2009 were far lower than those of the late 1980s and early 1990s. The AIDS epidemic, therefore, appeared to be easing among heterosexual IDUs, whose proportion among the cumulative caseload will probably not increase significantly from the recent level of 7.4 percent.

The demography of the cumulative heterosexual IDU caseload with AIDS has changed very little in the past 18 years. This caseload was 67 percent male; 50 percent Black; 35 percent White; 12 percent Hispanic; and 2 percent Asian/Pacific Islander. By contrast, the gay/bisexual IDU caseload was 70.5 percent White; 16.0 percent Black; 10.7 percent Hispanic; and 1.7 percent Asian/Pacific Islander. The heterosexual IDU demography is like that of heroin users except for an overrepresentation of Blacks, while the gay male IDU demography is similar to that for male methamphetamine users.

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**Exhibit 1. DAWN ED Sample and Reporting Information, San Francisco/Oakland Metropolitan Area<sup>1</sup>: CY 2008**

Total Eligible Hospitals	No. of Hospitals in DAWN Sample	Total EDs in DAWN Sample	No. of EDs Reporting per Month: Completeness of Data (%)			No. of EDs Not Reporting
			90–100%	50–89%	< 50%	
35	15	14–15	10–14	0–2	0	21–24

<sup>1</sup>Represents short-term, general, non-Federal hospitals with 24-hour emergency departments based on the American Hospital Association Annual Survey. Some hospitals have more than one ED.  
SOURCE: DAWN *Live!*, OAS, SAMHSA, accessed May 7, 2009

**Exhibit 2. Number of Weighted DAWN Estimated Visits and Percentage of Total Estimated Visits: 2006–2008**

DRUG	2006	2007	2008
Cocaine	5,773 (21.6)	6,055 (21.3)	4,160 (16.9)
Heroin	1,994 (7.5)	1,993 (7.0)	1,616 (6.6)
Marijuana	1,566 (5.9)	1,549 (5.4)	1,629 (6.6)
Methamphetamine	2,429 (9.1)	1,794 (6.3)	1,670 (6.8)
MDMA	286 (1.1)	188 (0.7)	293 (1.2)
GHB	114 (0.4)	188 (0.7)	135 (0.5)
PCP	116 (0.4)	159 (0.6)	88 (0.4)
Hydrocodone	407 (1.5)	421 (1.5)	539 (2.2)
Oxycodone	277 (1.0)	256 (0.9)	475 (1.9)
<b>Total Estimated Visits</b>	<b>26,759 (100)</b>	<b>28,474 (100)</b>	<b>24,573 (100)</b>

SOURCE: DAWN, OAS, SAMHSA

**Exhibit 3. Number of Admissions to Drug Treatment Programs, and Proportion of All Admissions, Including Alcohol, in Five-County Bay Area: FYs 2007, 2008, and 2009**

DRUG	FY 2007	FY 2008	FY 2009
Cocaine	6,059 (22.2%)	6,380 (20.8%)	6,797 (21.1%)
Heroin	5,481 (20.1%)	5,974 (19.5%)	5,686 (17.7%)
Methamphetamine	5,727 (21.0%)	5,864 (19.1%)	5,527 (17.2%)
Marijuana	2,709 (9.9%)	3,106 (10.1%)	3,226 (10.0%)

SOURCE: California Alcohol and Drug Programs

**Exhibit 4. Proportion of Admissions to Drug Treatment Programs, by Primary Drug of Abuse (Excluding Alcohol Admissions), in San Francisco County: FYs 2006, 2008, and 2010<sup>1</sup>**

<b>DRUG</b>	<b>FY 2006</b>	<b>FY 2008</b>	<b>FY 2010</b>
Cocaine	32.6%	26.9%	20.9%
Heroin	42.0%	42.0%	55.7%
Amphetamine/ Methamphetamine	14.6%	13.4%	11.4%
Marijuana	8.3%	12.8%	11.2%

<sup>1</sup>Data for FY 2010 are from the first half of the year.

SOURCE: San Francisco Department of Public Health

**Exhibit 5. Price and Purity of Heroin Samples, San Francisco: 2001–2008**

<b>YEAR</b>	<b>PRICE/MILIGRAM PURE</b>	<b>PERCENT PURITY</b>
2001	\$1.40	10%
2002	\$0.99	12%
2003	\$0.98	11%
2004	\$0.98	11%
2005	\$0.89	12%
2006	\$0.69	10%
2007	\$1.28	8%
2008	\$1.07	8%

SOURCE: DMP, DEA

# Drug Abuse Trends in the Seattle/King County Area: 2009

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## ABSTRACT

*Cocaine persisted as a major drug of abuse and was the second most common illegal drug detected in evidence from criminal cases in King County in 2009. Drug treatment admissions and fatal drug overdoses involving cocaine declined in 2009. However, the general perception was that use remained high in the area. Levamisole, a toxic adulterant, continued to be present in the majority of cocaine seized by law enforcement in the county. Heroin use also remained endemic in the county. Treatment admissions and overdoses involving heroin were down slightly in*

*2009 compared with 2008, and remained more common in Seattle, compared with the rest of the county. Young adult use of heroin increased over the past decade. In 2009, 29 percent (n=471) of heroin users entering drug treatment were between age 18 and 29, compared with 17 percent (n=326) in 1999. Heroin-related treatment admissions to nonmethadone maintenance treatment, as well as calls to the Help Line, increased at a faster rate outside of King County from 2005 to 2009. Pharmaceutical opioid (e.g. Vicodin®, OxyContin®, or methadone) use, misuse, and abuse have increased substantially over the last decade and indicators suggested that some abusers were transitioning to heroin. Indicators also pointed to a possible increase in heroin use across the State. The relative youth of those entering treatment was an indication of a young age of onset of use. In 1999, there were 14 (16 percent) treatment admissions for pharmaceutical opioids among those age 18–29; this increased to 451 (61 percent) in 2009. Pharmaceutical opioid-involved drug-caused deaths continued to increase in 2009, and were by far the most common substance identified in deaths. The vast majority, 83 percent, of these deaths involved at least one additional drug. A substantial minority of heroin users (39 percent) reported they were “hooked on prescription-type opiates” before they began using heroin in a May 2009 syringe exchange survey in King County. Marijuana use and growing were prevalent throughout the county and State. Marijuana continued as the most common substance identified by youth entering drug treatment. Among adults, marijuana was the third most common drug mentioned at treatment admission, and the number of admissions has more than doubled over the past decade. Methamphetamine treatment admissions have remained essentially flat among adults since 2005, while they have declined substantially among youth since 2005. Fatalities involving methamphetamine totaled 18 in 2009, similar to recent years. MDMA (3,4-methylenedioxymethamphetamine) use remained low, and there were no fatalities in 2009. However, MDMA shipments through Washington from Canada*

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were common, with approximately 4,800,000 MDMA tablets seized in 2009. BZP (1-benzylpiperazine) and TFMPP (1-3-(trifluoromethylphenyl)piperazine) remained common adulterants in MDMA tablets, according to chemists at the Washington State Crime Laboratory. HIV diagnoses among those whose exposure category was injection drug use decreased significantly from 2001–2003 to 2007–2009.

## INTRODUCTION

### Data Sources

The primary sources of information used in this report are listed below:

- **Drug trafficking data** were obtained from the Drug Enforcement Administration (DEA). Seattle Field Division Quarterly Trends in the Traffic Reports. Domestic Monitoring Program (DMP) heroin purchase data (edited versions) were also utilized, and data specific to Seattle were extracted and analyzed. Data were also obtained from the Threat Assessment Report produced by the Northwest High Intensity Drug Trafficking Area (NW HIDTA) program, which included survey data from local law enforcement throughout the State of Washington.
- **Drug overdose data** were obtained from the King County Medical Examiner (KCME), Public Health – Seattle & King County (PHSKC). The other opiates category indicates pharmaceutical opioids, including pharmaceutical morphine where noted (oxycodone, hydrocodone, methadone, and other opioids); however, codeine is excluded. The heroin/opiate category includes heroin, morphine (unless noted to be pharmaceutical), and cases where there was an indication that the death was “heroin related” in the KCME database.
- **Data on seized drug samples submitted for analysis** were obtained from the National Forensic Laboratory Information System (NFLIS), DEA. Drug testing results for local, State and Federal law enforcement seizures in King County were reported. Washington State Patrol Crime Laboratory chemists attended the local CEWG meeting and provided their qualitative impressions of drug seizure evidence they tested. These analytical tests are the basis of NFLIS data.
- **Emergency department (ED) drug report data** were obtained from the Drug Abuse Warning Network (DAWN) *Live!*, Office of Applied Studies (OAS), Substance Abuse and Mental Health Services Administration (SAMHSA), for January to June 2009. Data for the second half of 2009 were unavailable from SAMHSA. Data were accessed on December 10, 2009. Data completeness was as follows: out of 25 eligible EDs, 14 to 19 of the EDs reported basically complete data (90 percent or greater) each month, and 3 to 7 reported no data.
- **Drug treatment data** were provided by Washington State Department of Social and Health Services (DSHS), Division of Alcohol and Substance Abuse (DASA), Treatment Report and Generation Tool (TARGET), from 1999 through 2009. Treatment modalities included outpatient, intensive inpatient, recovery house, long-term residential, and opiate substitution admissions. Department of Corrections and private-pay admissions for opiate substitution were included.
- **Data on infectious diseases related to drug use and injection drug use**, including the human immunodeficiency virus (HIV) and acquired immunodeficiency syndrome (AIDS), were provided by PHSKC. Data on HIV cases (including exposure related to injection drug use) in Seattle/King County (2001 through 2009) were obtained from the “HIV/AIDS Epidemiology Report.”
- **Help Line call data** from 2001 through 2009 was provided by the Washington State Alcohol/Drug Help Line. Data were separated by whether the call was about youth (younger than 18) or adults (age 18 and older). In 2009, the hours of operation of the Help Line were reduced substantially with a concomitant decrease in the number of calls.



- **Data on opioid overdose, as well as syringe-using characteristics**, were obtained by PHSKC during the last week of April and the first week of May of 2009 at King County syringe exchanges. Anonymous data were collected for program evaluation purposes. A total of 477 unduplicated surveys were analyzed.

## King County Population Statistics

The total population of King County was 1,884,324 in 2008 of which 76 percent were White, 6 percent were African-American, 1 percent were American Indian/Alaskan Native, 13 percent were Asian, 1 percent were Pacific Islander, and 3 percent were multiracial. Hispanic ethnicity was reported by 7 percent of the county's population. Data reported by region are based on PHSKC's four-region reporting system which is based on 5-digit Zip Codes. The four regions are: Seattle (population 556,124 in 2008); north county (168,385); east county (458,154); and south county (707,678). The total population of the county increased 10 percent from 1999 to 2008.

## DRUG ABUSE PATTERNS AND TRENDS

### Cocaine

Deaths involving cocaine continued to decline from a peak in 2006 (exhibit 1); however, cocaine was the most common illegal drug detected in deaths. African-Americans were overrepresented in cocaine-involved deaths (exhibit 2). Those in their forties constituted the largest group dying from drug overdoses involving cocaine (exhibit 2). Since 1997, the number of individuals dying in their thirties from drug overdoses involving cocaine has declined, while the number dying who were age 50 and older has increased substantially (data not shown). Only one in four deaths with cocaine involved no other drug. The most commonly detected drugs in cocaine-involved deaths included pharmaceutical opioids, heroin/opiate, and alcohol. Seattle had the highest rate

of cocaine-involved deaths; the eastern portion of King County had the lowest rate.

Treatment admissions for which cocaine was the primary drug of choice were uncommon for youth (exhibit 3). For adults, cocaine was the second most common substance following alcohol, which has been the case since 2006 (exhibit 4). Overall there has been a substantial increase in cocaine admissions for adults from 1999 to 2009. In 2009, 37 percent of cocaine admissions were female, a decline in the proportion since 1999 (data not shown). While there has been a slight increase in the number of female cocaine admissions, the number of males has almost doubled. In 2009, 52 percent of cocaine treatment admissions were for African-Americans, which is disproportionate to the 6 percent of the county's population that is African-American, but similar to the proportion entering treatment over the prior decade. Clients in their forties represented 44 percent of admissions in 2009, with the trend over the past decade indicating an increasing age at admission. The rate of treatment admissions for cocaine was by far the highest for Seattle residents; south county residents had one-half the rate of admissions, and residents of other regions had far lower rates of treatment admission. Admission rates have remained low for north and east county residents, but have increased substantially for Seattle and south county residents over the past decade. Referrals to treatment from court/probation have consistently been the referral source for about one in five admissions since 1999.

Youth-related calls to the Help Line for information or referral related to cocaine were uncommon and appeared to have declined in recent years (exhibit 6). For adults, cocaine has consistently been a drug of concern with 8 percent of calls in 2009 (exhibit 6).

Changes in local law enforcement policies appeared to have resulted in substantial declines in cocaine submissions for analytical testing. This was reflected in NFLIS data, which showed a substantial decline in the total number of pieces of evidence testing positive for any drug and a decline in positive tests for cocaine for evidence seized in King County from 2007 to 2009 (exhibit 7).

Levamisole is an adulterant increasingly found in cocaine in the United States. From April through November 2009, PHSKC investigated and reported on 10 cases of cocaine-associated agranulocytosis in King County. Local quantitative data were unavailable, as the Washington State Patrol's Crime Laboratory does not document the presence of levamisole in cocaine, nor does it report it to the NFLIS system (it is not a controlled substance). However, according to chemists in the Seattle laboratory most cocaine tested that has been seized and analyzed in King County does have levamisole in it. Cocaine was the most common drug detected in 2007 with more than double the number for marijuana, but by 2009 marijuana increased slightly and cocaine declined to well below the number for marijuana. Cocaine was the most common illegal drug in DAWN ED reports in the first half of 2009 (exhibit 8).

## Heroin

Overdoses with heroin/opiates present continued to decline in 2009 (exhibit 1). Whites were somewhat overrepresented in deaths (exhibit 2). Females constituted 25 percent of heroin/opiate-involved deaths (exhibit 2); while the number of females who have died with heroin/opiate detected has remained virtually flat since 1997, the number of males has declined substantially (data not shown). The largest proportion of deaths among those younger than 30 involved heroin, compared with the other drugs of abuse. Deaths rarely involved just heroin/opiate (14 percent), and the average number of drugs present was 2.7. The most common other drugs detected included cocaine, pharmaceutical opioids, selective serotonin reuptake inhibitor (SSRI) antidepressants, and alcohol. The heroin/opiate-involved death rate was approximately three times higher in Seattle than in the three other regions of the county.

Heroin treatment admissions were largely to opiate substitution programs in King County. Treatment admissions tend to be for a year or more so average caseload is an important measure along with the number of admissions to treatment. The average caseload for King County residents in opiate substitution treatment was 2,903 for 2009 (data

not shown). This compares with average caseloads of 2,146 in 2004 and 1,705 in 1999. These numbers also included the increasing number of people addicted to pharmaceutical opioids.

Youth treatment admissions to any modality for heroin remained uncommon (exhibit 3). Adult admissions totaled 1,631 in 2009 (exhibit 4), with annual numbers of admissions fluctuating substantially due to large changes in capacity when a new opiate substitution treatment clinic opens. No obvious trends in admissions for heroin since 1999 in terms of total numbers were evident. Females represented 39 percent of clients entering treatment for heroin in 2009, generally similar to prior years (exhibit 5). In 2009, 29 percent ( $n=471$ ) of heroin users were between ages 18 and 29, compared with 17 percent ( $n=326$ ) in 1999. African-Americans were somewhat overrepresented in treatment admissions for heroin compared with the proportion of the population of King County that they represent, 11 versus 6 percent, respectively. The rate of treatment admissions for heroin was far higher in Seattle than for any other region of the county, with the south and north regions having similar rates, about one-third of that for Seattle, and the east side even lower still. Court and probation referrals were uncommon for those entering treatment for heroin addiction.

To examine large scale geographic trends in heroin use data on admissions to nonopiate substitution treatment (OST) for King County as reviewed and compared with the rest of the State. Heroin use has long been considered an urban phenomena and OSTs are located in the most metropolitan areas of the State. Examining non-OST admissions for heroin provides insight into those seeking nonmedication-assisted treatment, which is more likely to be used in less metropolitan areas. Comparing 2005 with 2009, the number of treatment admissions, the rate of treatment admissions (data not shown), and the proportional increase in admissions were all larger for the areas of Washington State outside of King County (exhibit 9). This indicates a large and growing problem with heroin across the State as indicated by drug treatment admissions.

Help Line calls about heroin for adolescents remained uncommon, with 24 calls (5 percent) in

2009. Adult calls about heroin increased slightly as a proportion of all calls in 2009, with 545 calls (7 percent). Help Line calls about heroin for residents outside of King County indicated a 64-percent increase in the proportion of all calls between 2005 and 2009, a numerical increase from 410 to 917. This increase was much larger than that seen in King County, and parallels the geographic findings for heroin-related treatment admissions.

NFLIS drug seizure test results for heroin remained relatively low in 2009, much lower than cocaine and marijuana, and slightly lower than methamphetamine and the combined category of pharmaceutical opioids (exhibit 7). Heroin was the second most common illegal drug reported in the DAWN ED data for the first half of 2009 (exhibit 8).

The purity of “street level” heroin purchased in Seattle for the DEA’s domestic monitoring program averaged 3.9 percent in 2009 (3.4 percent median). The highest purity was 16.1 percent, and while this is still relatively low purity unknown and fluctuating purity represents a risk for overdose. In 2008, heroin purity was 8.5 percent on average (8.0 percent median).

In a May 2009 syringe exchange survey in King County a substantial minority of heroin users (39 percent) reported they were “hooked on prescription-type opiates” before they began using heroin. These data are the first to address this issue after years of anecdotal reports from local service providers about the transition from pharmaceutical opioids to heroin that they have been seeing among young adults. Serious opioid overdoses (heroin and/or pharmaceutical) within the prior year were reported by 16 percent of syringe exchange survey respondents, with 41 percent reporting they had witnessed a serious overdose in the prior year. Emergency medical help was summoned by calling 911 during 61 percent of the most recently witnessed overdoses.

### Other Opiates

Pharmaceutical opioid-involved deaths continued to increase and far surpass any other substances in

overdose deaths. Methadone was the most common opioid detected, although it has declined since 2006 (exhibit 10). Oxycodone, conversely, continued to increase. Almost one-half of pharmaceutical opioid-involved deaths were among females; while the number of male deaths has remained flat since 2005, the number of females continued to rise. No single factor seemed to underlie this gender difference in the temporal trend. Those older than 50 represented the largest proportion of deaths involving pharmaceutical opioids, although deaths have increased substantially for all age groups since 1997. Single-drug deaths involving pharmaceutical opioids were uncommon, and 25 percent of deaths involved an illegal drug as well. The most common drugs detected, in addition to pharmaceutical opioids, were benzodiazepines and SSRI antidepressants. The death rate was higher in the southern and northern parts of the county and was lowest on the east side.

Youth treatment admissions for a primary problem with pharmaceutical opioids were uncommon in 2009, although there was an increase from 1999 when there were none (exhibit 3). Adult admissions increased substantially with a total of 719 in 2009 (exhibit 4). Almost one-half of pharmaceutical opioid addicted clients entering treatment were female in 2009 (exhibit 5), a decline in the proportion from previous years during which females often represented the majority of clients (data not shown). Clients were very young, with 40 percent age 18–25 in 2009. Almost three-quarters were White, a proportion slightly lower than in prior years. The region of residence with the highest rate of treatment admissions was the south region, followed by the north, Seattle, and the east side. Admissions to non-OST treatment for pharmaceutical opioids increased substantially for both King County and the rest of the State from 2005 to 2009 (exhibit 9).

To get a sense of the minimum total treatment admissions for opioid addiction, a combined category of heroin and pharmaceutical opioids was created to which another category “prescribed opioid substitute” was added. This last category was usually included in “other” because it is not possible to differentiate heroin from pharmaceutical

addiction. This combined category in 2009 totaled 2,501 admissions (exhibit 4), a number second only to alcohol.

Drug treatment admissions data presented here indicate a substantial underreport of all opioid-related admissions (pharmaceutical and/or heroin) as only a small proportion of Suboxone® (buprenorphine) OST data were available. Suboxone® is an opiate substitution medication prescribed by physicians out of their offices, as compared with methadone maintenance treatment which must be dispensed at stand-alone clinics. Suboxone® is minimally documented in public data sets as only a small proportion of Suboxone® treatment is covered by public funding. For instance, in the Washington State Fiscal Year (FY) 2009, 389 patients received public funding for Suboxone®, while the potential treatment capacity based upon the number of physicians who have been trained was 16,230 as of April 2010 (note that the number of actual patients receiving Suboxone® in Washington State was unknown, but was likely much lower than the theoretical capacity).

Youth Help Line calls about pharmaceutical opioids increased from 1 to 15 percent of calls from 2001 to 2009 (exhibit 6). The most common type of opioid specifically identified was OxyContin®. Adult Help Line calls increased from 2 to 18 percent of all calls with 1,381 in 2009; as with youth the most common substance identified was OxyContin®. Pharmaceutical opioids were second only to alcohol as the reason for Help Line calls for adults. The increase in pharmaceutical opioid-related calls for King County and the rest of the State from 2005 to 2009 was nearly identical with a more than 100-percent increase in calls for both regions.

The combined category of pharmaceutical opioids totaled 281 in the test results reported by NFLIS for King County drug seizures in 2009 (exhibit 7). Oxycodone was most common with 180 positive tests, followed by buprenorphine (39), hydrocodone (32) and methadone (23). Pharmaceutical opioids used nonmedically totaled 2,229 in the first half of 2009 in Seattle area EDs (exhibit 8). This number was larger than for any

illegal drug and was second only to alcohol with 2,585 reports.

## **Methamphetamine**

Methamphetamine deaths have continued at a low level since 2002 (exhibit 1). Most were White males, and the median age was 45.5 years. One-half of these deaths involved just methamphetamine, a much higher proportion than for other drugs. The most common other drugs were pharmaceutical opioids and cocaine. Mortality rates were highest in Seattle and the south end of the county, though the numbers overall were low.

Youth methamphetamine treatment admissions peaked in 2004 at 75 and declined to 24 in 2009 (exhibit 3). Adult admissions have remained steady at about 1,300 annually since 2005 (exhibit 4). One-third of admissions in 2009 were among clients in their thirties, and 43 percent were female. The proportion of females has steadily declined over the years (data not shown). Three-quarters of admissions were White, down from 90 percent in 1999. Methamphetamine treatment admission rates were highest in the south region and Seattle and much lower in the north and east regions, consistent with prior years.

Youth-related calls to the Help Line regarding methamphetamine have dropped substantially since 2001, from 189 (10 percent) to 16 (3 percent) in 2009 (exhibit 6). Adult calls also declined, from 786 (7 percent) to 403 (5 percent) over the same period.

NFLIS results indicated a substantial drop in the number of drug seizures testing positive for methamphetamine from 658 in 2007, to 315 in 2008 and 292 in 2009 (exhibit 7). A total of 536 reports for methamphetamine were made to the DAWN ED system from January to June 2009, making it the fourth most common illegal drug reported (exhibit 8) at about one-third the level of cocaine reports.

## **Marijuana**

Marijuana continued as the most common primary drug among youth entering drug treatment (exhibit 3). The number and rate of treatment admissions

among adults has more than doubled since 1999. While the number of Whites and females entering treatment has remained flat since 1999, there have been substantial increases among males, African-Americans, and Hispanics (data not shown). Much of the increase in the rate of admissions has been in the south region of the county where the rate has doubled since 1999 and surpassed Seattle in 2007. Probation/court made the referral to treatment for 29 percent of admissions for marijuana in 2009, a similar proportion to prior years, but the highest proportion for any drug in 2009. It is suspected that many of these referrals may have been due to positive drug tests among those on probation.

Marijuana was the reason for one in three adolescent calls to the Help Line, consistent with prior years (exhibit 6). Adult calls for marijuana represented a smaller proportion, slightly less than 1 in 10 calls, also similar to prior years.

Drugs seizure and identified as marijuana by NFLIS increased slightly from 2007 to 2009; with the decline in cocaine positives, marijuana was the most common drug detected in 2009 (exhibit 7). Marijuana was the third most common illegal drug reported in area EDs in the first half of 2009 (exhibit 8).

Marijuana continued to be grown throughout Washington State, with indoor grow operations predominating in western Washington and outdoor grows in eastern Washington, according to the NW HIDTA. There were connections between growers and traffickers in British Columbia, Canada, and Washington State. There may have been a relocation of growers from Canada to Washington in order to reduce seizures by border patrol. In FY 2009, 4,184 pounds of marijuana were seized, compared with 21,842 pounds in FY 2003.

### **Benzodiazepines**

Benzodiazepines were rarely used as a sole drug of abuse. An exemplar of this is mortality data in which only 2 percent of deaths with benzodiazepines involved no other drugs (exhibit 2). Benzodiazepines were the second most common drug detected (exhibit 1). Alprazolam (e.g. Xanax®)

was the most common benzodiazepine detected, followed by diazepam (e.g. Valium®) (exhibit 10). One-half of decedents were female, most were White, and 39 percent were 50 or older. Illegal drugs were present in 24 percent of these deaths along with benzodiazepines. The most common other substance was a pharmaceutical opioid, present in 78 percent of cases. The death rate was highest in the northern part of the county and lowest in Seattle.

Benzodiazepines were rarely a primary drug of abuse as indicated by treatment admissions or calls to the Help Line. However, adult Help Line calls about benzodiazepine have increased from 33 in 2001 to 98 in 2009 (exhibit 6). Benzodiazepines were rarely found in drug items seized and analyzed by law enforcement, with just 50 items in 2009, of which 26 were alprazolam and 15 were clonazepam (exhibit 7).

Nonmedical use of benzodiazepines reported in the DAWN ED data totaled 1,020 during the first half of 2009, a number similar to marijuana and less than one-half that of pharmaceutical opioids (exhibit 8).

### **MDMA, Club Drugs, Other Hallucinogenic Drugs, and PCP**

MDMA (3,4-methylenedioxyamphetamine) was not detected in any drug overdose deaths in 2009. There have been between one and four MDMA-involved deaths annually from 1999 to 2008. Hallucinogenic drugs were uncommon as a primary drug of abuse among clients entering drug treatment. Ecstasy calls to the Help Line have declined substantially for youth, from 101 (6 percent) in 2001 to 9 (2 percent) in 2009, with the initial drop in calls occurring in 2002 (exhibit 6). Adult Help Line calls about ecstasy have declined more slowly to 26 (<1 percent) in 2009. Other hallucinogens were less commonly reported than ecstasy during Help Line calls.

Drug items seized and identified as MDMA by NFLIS totaled 249 and decreased substantially in 2008 to 56, with a similar total of 66 in 2009 (exhibit 7). BZP (1-benzylpiperazine) was increasingly

detected in what appeared to be MDMA. There were no BZP positives in 2007, 41 in 2008, and 62 in 2009. TFMPP (1-3-(trifluoromethylphenyl)l-piperazine) was often found in combination with BZP as the substances together are meant to replicate MDMA (TFMPP is not reported to NFLIS as it is not a controlled substance). PCP (phencyclidine) was consistently detected in a small number of drug seizure tests, with 24 in 2009. According to Washington State Patrol Crime Laboratory chemists, PCP is most often submitted in the form of a yellowish liquid comprised of the drug dissolved in ether. MDMA was identified in 77 reports in Seattle area EDs in the first half of 2009 and PCP was identified in 113 reports (exhibit 8).

The NW HIDTA reported that a substantial volume of MDMA was being manufactured in British Columbia and transported through Washington State. In 2008, 2.2 million dosage units and 67 kilograms of MDMA were seized at the Canadian border entering Washington; in 2009, the totals were 4.8 million dosage units and 164 kilograms. Drug test results on tablets purported to be ecstasy at raves in neighboring British Columbia contained many different things, according to the British Columbia Drug Surveillance and Intelligence Working Group. Some tablets contained just MDMA, at various levels of purity. Some contained BZP and TFMPP, but no MDMA, while other tablets contained various combinations of ketamine, caffeine, or methamphetamine—sometimes with MDMA, sometimes not.

## INFECTIOUS DISEASES RELATED TO DRUG ABUSE

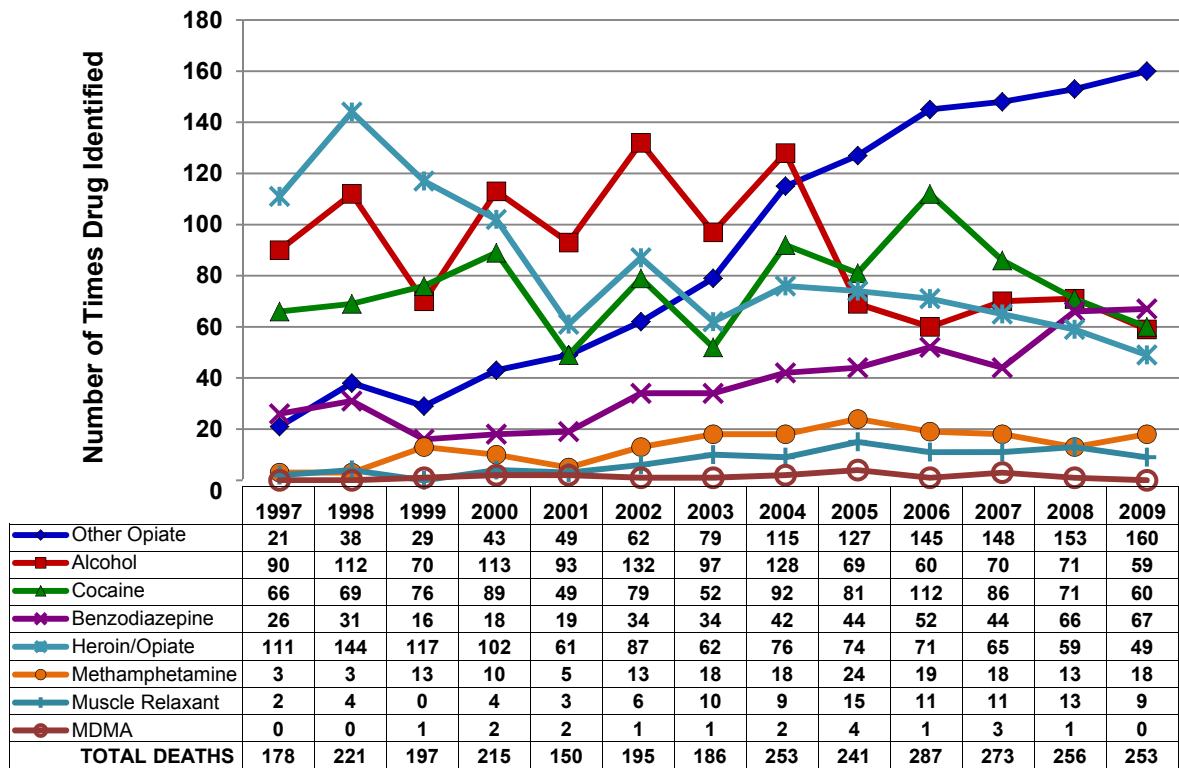
### HIV

HIV diagnoses among those whose exposure category was injection drug use decreased significantly from 2001–2003 to 2007–2009 (exhibit 11). The proportion whose exposure category was men who have sex with men and are injection drug users did not change significantly. The total number of new syringes distributed by the King County syringe exchanges surpassed 3,200,000 in 2009, similar in volume to 2008.

Data collected at the 2009 syringe exchange survey by PHSKC indicated that 95 percent had ever received an HIV test and 41 percent had in the prior 6 months. Two-thirds reported daily injection. During the prior 3-month period 21 percent reported sharing syringes, and 42 percent had shared other drug using equipment.

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**Exhibit 1. Number of Drug-Caused Deaths for Selected Drugs<sup>1</sup>, King County (Seattle) Washington: 1997–2009**



<sup>1</sup>Other opiates includes pharmaceutical opioids, including pharmaceutical morphine where noted, and excludes codeine. Heroin/opiate includes heroin, morphine (unless noted to be pharmaceutical), and cases where there is an indication that the death is “heroin related” in the King County Medical Examiner database.

SOURCE: King County Medical Examiner, Public Health—Seattle and King County

**Exhibit 2. Number and Percentage of Drug-Caused Deaths, by Gender, Ethnicity, Age, Manner of Death, Other Drugs, and Region, King County (Seattle), Washington: CY 2009**

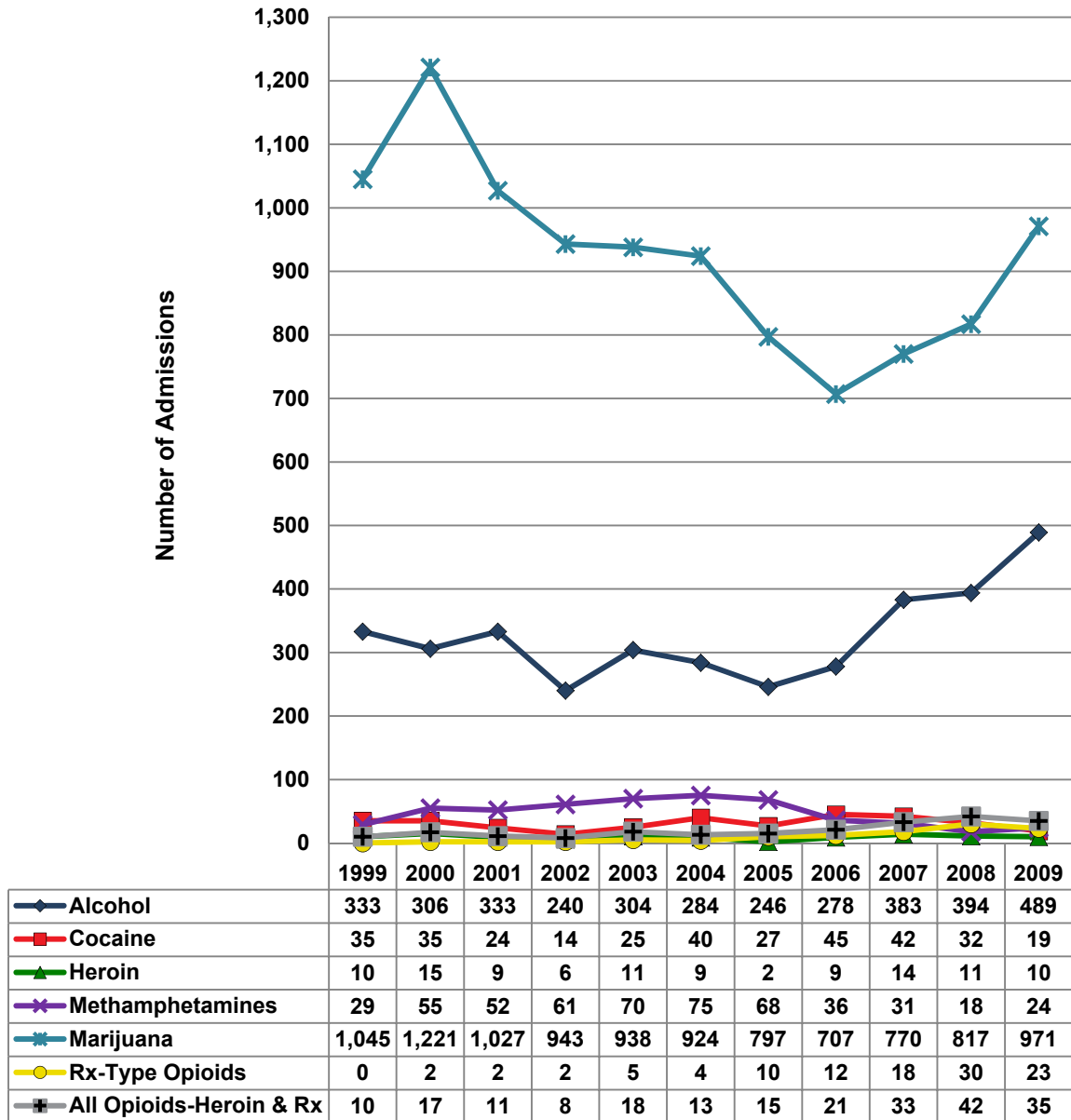
	Alcohol	Cocaine	Heroin/ Opiate	Rx Opiate	Methamphet- amine	Benzo- diazepine	All Deaths
<b>% Female</b>	34%	28%	25%	48%	17%	49%	40%
<b>Race</b>							
White	91.4%	80.7%	91.7%	90.5%	88.9%	92.2%	87.9%
African-American	6.9%	17.5%	8.3%	8.2%	5.6%	6.3%	9.7%
Asian	0%	0%	0%	0%	0%	0%	1.6%
Native American	1.7%	1.8%	0%	0%	0%	1.6%	.8%
Other	0%	0%	0%	0%	0%	0%	0%
<b>Median Age (Range)</b>	47.0 (20–68)	45.0 (22–67)	45.0 (13–67)	47 (15–93)	45.5 (28–68)	47.0 (20–75)	46.0 (13–93)
<b>Age Category</b>							
<30	6.8%	10.0%	18.4%	11.3%	5.6%	14.9%	12.6%
31–40	27.1%	23.3%	14.3%	23.1%	27.8%	22.4%	22.5%
41–50	33.9%	35.0%	34.7%	28.8%	33.3%	23.9%	30.4%
>50	32.2%	31.7%	32.7%	36.9%	33.3%	38.8%	34.4%
<b>Manner of Death</b>							
Accident	86.4%	96.7%	100.0%	90.6%	100.0%	89.6%	89.3%
Suicide	11.9%	.0%	0%	6.9%	0%	9.0%	7.9%
Undetermined	1.7%	3.3%	0%	2.5%	0%	1.5%	2.8%
<b>% Single Drug</b>	14%	25%	14%	17%	50%	2%	27%
<b>Average # of drugs present</b>	2.8	2.6	2.7	2.7	1.9	3.3	2.4
<b>Illegal Drug<sup>1</sup></b>	36%	100%	100%	25%	100%	24%	41%
<b>Other drugs</b>							
Alcohol	100%	23%	20%	18%	11%	15%	23%
Cocaine	24%	100%	37%	16%	17%	12%	24%
Heroin/Opiate	17%	30%	100%	11%	11%	15%	19%
Prescription Opiate	48%	43%	37%	100%	33%	78%	63%
Methamphetamine	3%	5%	4%	3%	100%	0%	7%
Benzodiazepine	17%	13%	20%	33%	0%	100%	27%
Muscle relaxants	3%	2%	0%	4%	0%	6%	4%
SSRI antidepressants	31%	17%	31%	34%	11%	39%	31%
<b>King County Region Rate per 100,000 population and number</b>							
North	3.6 6	3.6 6	1.8 3	10.1 17	0.6 1	7.1 12	12.5 21
East	2.0 9	0.7 3	1.7 8	5.0 23	0.2 1	3.5 16	7.6 35
South	2.4 17	3.3 23	1.8 13	10.7 76	1.1 8	3.4 24	14.7 104
Seattle	4.9 27	5.0 28	4.5 25	7.9 44	1.4 8	2.7 15	16.7 93
Total	3.1 59	3.2 60	2.6 49	8.5 160	1.0 18	3.5 67	13.4 253
<b>Total number drugs [deaths]</b>	59	60	49	160	18	67	253
<b>% of deaths</b>	23%	24%	19%	63%	7%	26%	100%

<sup>1</sup>Cocaine, heroin/opiate, methamphetamine, and MDMA.

SOURCE: King County Medical Examiner, Public Health—Seattle and King County



**Exhibit 3. Number of Youth<sup>1</sup> Drug Treatment Admissions, by Primary Drug of Abuse for Selected Drugs, King County (Seattle), Washington: 1999–2009**

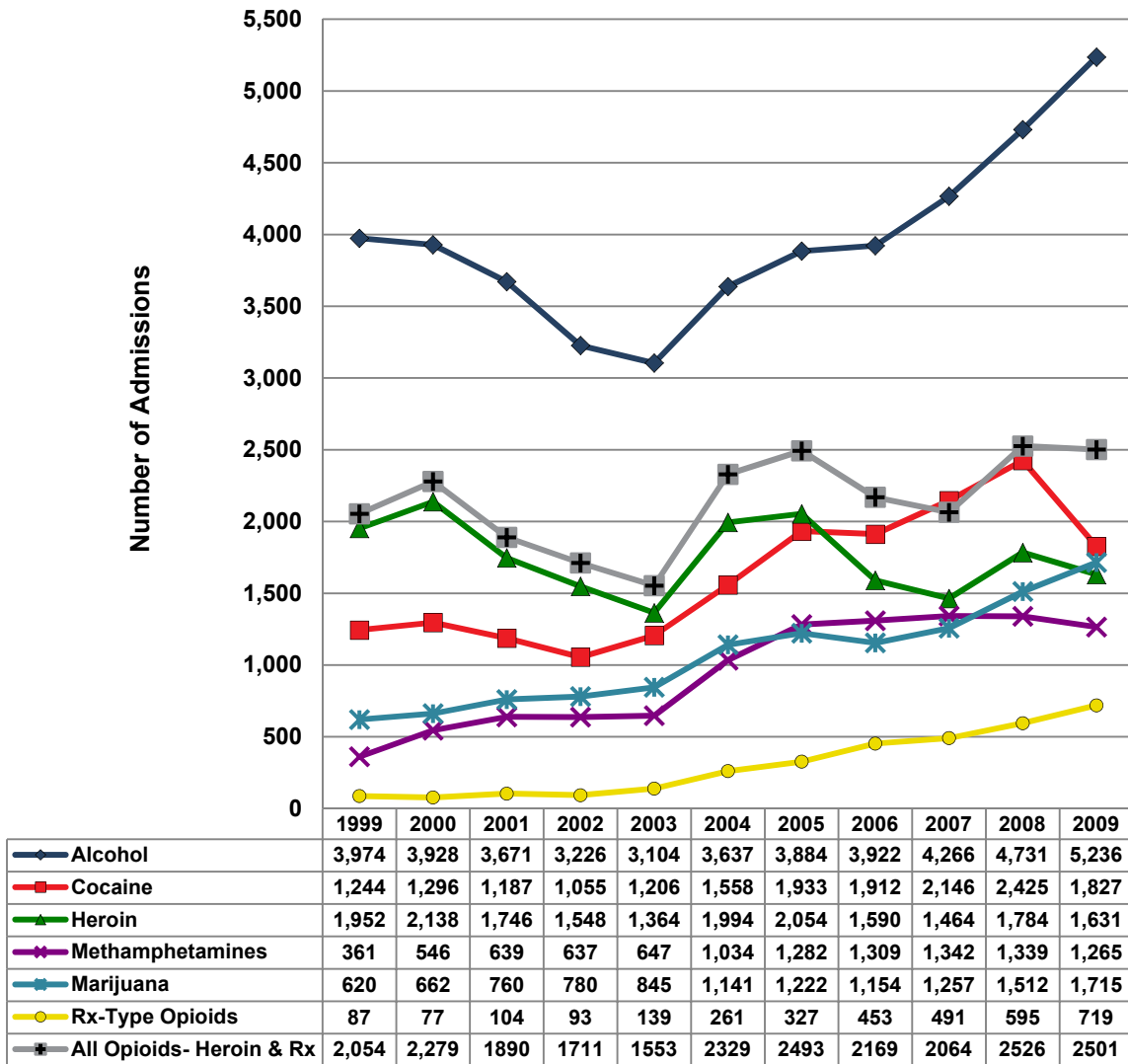


<sup>1</sup>Youth=younger than 18.

Note: Rx-Type Opioids includes oxycodone/hydrocodone, nonprescription methadone, and other opiates. All Opioids combines heroin, Rx-type opioids, and “prescribed opiate substitute.”

SOURCE: Washington State Division of Behavioral Health and Recovery, Treatment Report and Generation Tool

**Exhibit 4. Number of Adult Drug Treatment Admissions, by Primary Drug of Abuse for Selected Drugs, King County (Seattle), Washington: 1999–2009**



Adult=age 18 and older.

Note: Rx-Type Opioids includes oxycodone/hydrocodone, nonprescription methadone, and other opiates. All Opioids combines heroin, Rx-type opioids, and "prescribed opiate substitute."

SOURCE: Washington State Division of Behavioral Health and Recovery, Treatment Report and Generation Tool

**Exhibit 5. Number and Percentage of Drug Treatment Admissions, by Gender, Age, Drug, and Region of Residence, for King County (Seattle), Washington: CY 2009**

	Alcohol	Cocaine	Heroin	Rx-type opiates	Marijuana	Methamphetamine	Other <sup>1</sup>	Total
<b>Female</b>	1,593	539	606	337	614	386	255	4,330
<b>Age</b>								
17 and Younger	498	14	20	31	1,075	28	59	1,725
18-25	750	92	285	288	665	157	103	2,340
26-29	475	130	186	152	186	165	85	1,379
30-39	1,139	330	353	130	257	299	112	2,620
40-49	1,565	638	392	77	142	214	99	3,127
50-59	870	220	264	41	64	34	91	1,584
60-69	118	19	36	3	2	4	13	195
70 and Older	11	0	2	0	1	0	2	16
<b>Recent IV Drug Use</b>	141	71	1,137	80	20	153	55	1,657
<b>Ethnicity</b>								
White	2,620	412	1,103	529	970	691	349	6,674
African-American	956	744	171	34	623	38	54	2,620
Asian/PI	327	47	19	19	104	30	43	589
Native American	375	42	32	43	61	23	13	589
Hispanic	521	78	100	33	321	42	54	1,149
Multiple Race	482	100	79	52	264	64	36	1,077
Other	145	20	34	12	49	13	15	288
<b>Region of residence, rate of admissions per 100,000 population</b>								
East	107.4	12.7	24.0	18.1	48.0	17.7	...	238.6
North	168.1	36.2	60.6	37.4	95.0	34.4	...	452.5
Seattle	456.9	191.1	174.4	30.6	161.5	84.3	...	1,134.3
South	313.7	87.2	56.9	55.0	187.8	90.3	...	827.2
Total <sup>2</sup>	302.5	97.6	86.7	39.2	141.9	68.1	...	766.1
<b>Total Admissions</b>	<b>5,426</b>	<b>1,443</b>	<b>1,538</b>	<b>722</b>	<b>2,392</b>	<b>901</b>	<b>564</b>	<b>12,986</b>
	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

<sup>1</sup>Other includes: hallucinogens, none, barbiturates, benzodiazepines, inhalants, major tranquilizers, other sedatives, over-the-counter, PCP, other, unknown, and "prescribed opioid substitute."

<sup>2</sup>Three percent of clients did not report a residential zip code within King County, though they identified themselves as King County residents.

SOURCE: Washington State Division of Behavioral Health and Recovery, Treatment Report and Generation Tool

**Exhibit 6. Calls to the Alcohol/Drug Help Line, King County (Seattle), Washington: 2001–2009****Youth - King County**

<b>Substance</b>	<b>2001</b>		<b>2002</b>		<b>2003</b>		<b>2004</b>		<b>2005</b>		<b>2006</b>		<b>2007</b>		<b>2008</b>		<b>2009<sup>2</sup></b>	
Alcohol	652	36%	405	36%	288	32%	288	33%	207	28%	234	28%	279	31%	205	30%	161	33%
Cocaine	91	5%	69	6%	56	6%	64	7%	64	9%	74	9%	70	8%	40	6%	19	4%
Marijuana	491	27%	353	31%	302	34%	277	32%	202	28%	250	30%	268	30%	217	32%	153	32%
Heroin	22	1%	12	1%	14	2%	21	2%	19	3%	29	3%	38	4%	36	5%	24	5%
Methamphet-amine	189	10%	104	9%	99	11%	97	11%	78	11%	74	9%	64	7%	30	4%	16	3%
Rx Opioids	10	1%	11	1%	27	3%	32	4%	52	7%	76	9%	67	8%	87	13%	72	15%
Benzodiazepine	0	0%	1	0%	1	0%	1	0%	5	1%	1	0%	2	0%	1	0%	1	0%
Ecstasy	101	6%	35	3%	19	2%	24	3%	38	5%	43	5%	36	4%	17	3%	9	2%
Other <sup>3</sup>	258	14%	135	12%	84	9%	70	8%	68	9%	66	8%	68	8%	47	7%	29	6%
<b>Total</b>	<b>1,814</b>	<b>100%</b>	<b>1,125</b>	<b>100%</b>	<b>890</b>	<b>100%</b>	<b>874</b>	<b>100%</b>	<b>733</b>	<b>100%</b>	<b>847</b>	<b>100%</b>	<b>892</b>	<b>100%</b>	<b>680</b>	<b>100%</b>	<b>484</b>	<b>100%</b>
<b>Rx Opioids</b>	<b>2001</b>		<b>2002</b>		<b>2003</b>		<b>2004</b>		<b>2005</b>		<b>2006</b>		<b>2007</b>		<b>2008</b>		<b>2009<sup>2</sup></b>	
Methadone	6	0%	0	0%	2	0%	0	0%	3	0%	4	0%	2	0%	3	0%	2	0%
OxyContin®	0	0%	0	0%	1	0%	16	2%	29	4%	49	6%	37	4%	50	7%	47	10%
RX pain pills	4	0%	11	1%	24	3%	16	2%	20	3%	23	3%	28	3%	34	5%	23	5%

**Adults<sup>4</sup> - King County**

<b>Substance</b>	<b>2001</b>		<b>2002</b>		<b>2003</b>		<b>2004</b>		<b>2005</b>		<b>2006</b>		<b>2007</b>		<b>2008</b>		<b>2009<sup>2</sup></b>	
Alcohol	6,220	57%	6,596	58%	6,103	57%	5,763	53%	4,595	48%	5,382	47%	4,988	50%	5,301	52%	3,868	50%
Cocaine	1,088	10%	1,124	10%	1,198	11%	1,301	12%	1,159	12%	1,426	13%	1,120	11%	902	9%	602	8%
Marijuana	972	9%	967	9%	939	9%	971	9%	810	8%	908	8%	829	8%	877	9%	530	7%
Heroin	521	5%	584	5%	575	5%	595	5%	489	5%	594	5%	519	5%	518	5%	545	7%
Methamphet-amine	786	7%	668	6%	726	7%	785	7%	871	9%	941	8%	694	7%	592	6%	403	5%
Rx Opioids	259	2%	392	3%	525	5%	769	7%	821	9%	1,134	10%	1,111	11%	1,410	14%	1,381	18%
Benzodiazepine	33	0%	44	0%	60	1%	81	1%	107	1%	121	1%	92	1%	114	1%	98	1%
Ecstasy	117	1%	69	1%	53	0%	63	1%	82	1%	72	1%	58	1%	45	0%	26	0%
Other <sup>3</sup>	863	8%	912	8%	546	5%	492	5%	604	6%	772	7%	512	5%	374	4%	330	4%
<b>Total</b>	<b>10,859</b>	<b>100%</b>	<b>11,356</b>	<b>100%</b>	<b>10,725</b>	<b>100%</b>	<b>10,820</b>	<b>100%</b>	<b>9,538</b>	<b>100%</b>	<b>11,350</b>	<b>100%</b>	<b>9,923</b>	<b>100%</b>	<b>10,133</b>	<b>100%</b>	<b>7,783</b>	<b>100%</b>
<b>Rx Opioids</b>	<b>2001</b>		<b>2002</b>		<b>2003</b>		<b>2004</b>		<b>2005</b>		<b>2006</b>		<b>2007</b>		<b>2008</b>		<b>2009<sup>2</sup></b>	
Methadone	94	1%	93	1%	114	1%	157	1%	152	2%	199	2%	180	2%	212	2%	170	2%
OxyContin®	0	0%	0	0%	21	0%	205	2%	257	3%	401	4%	397	4%	573	6%	664	9%
RX pain pills	165	2%	299	3%	390	4%	407	4%	412	4%	534	5%	534	5%	625	6%	547	7%

Youth=younger than 18.

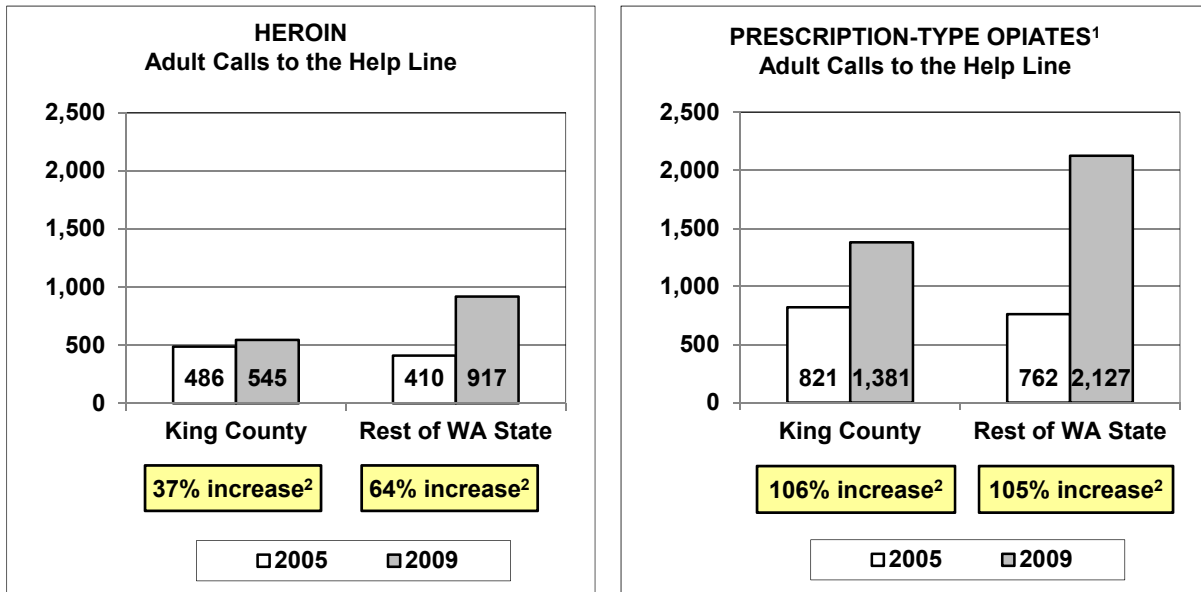
Note there was a large decrease in the total number of calls in 2009 which corresponds to a substantial decrease in Help Line funding and hours of operation. Therefore, percentages are the most appropriate measure to compare across years.

Other=amphetamine, antidepressant, barbiturates, hallucinogens, inhalant, LSD, over-the-counter, other, Rx, stimulant, unknown, tranquilizers, and PCP.

Adult=age 18 and older.

SOURCE: Washington State Alcohol/Drug Help Line

**Exhibit 6, Continued. Calls to the Alcohol/Drug Help Line, King County (Seattle), Washington: 2001–2009**



<sup>1</sup>Youth=younger than 18.

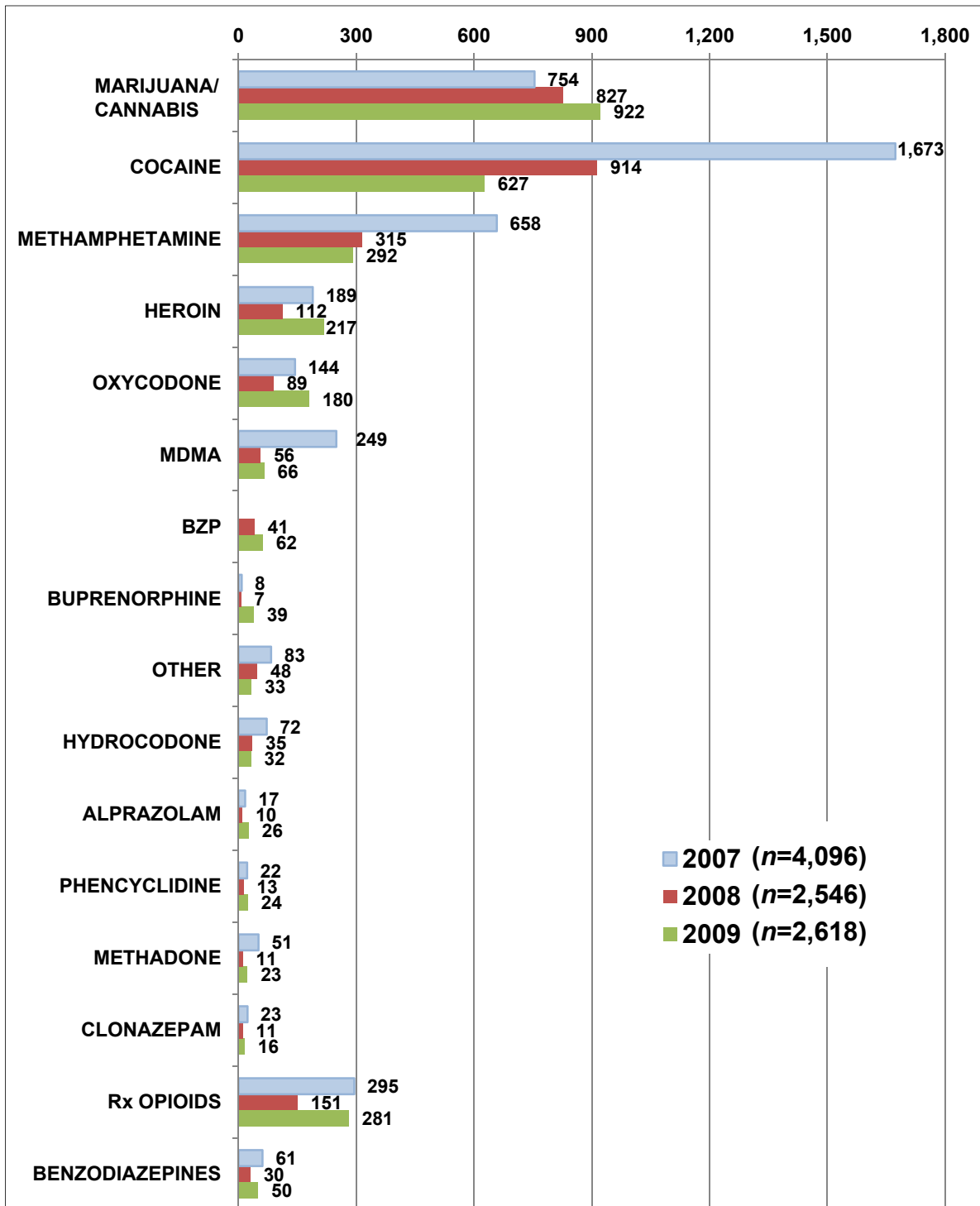
<sup>2</sup>Note there was a large decrease in the total number of calls in 2009 which corresponds to a substantial decrease in Help Line funding and hours of operation. Therefore, percentages are the most appropriate measure to compare across years.

<sup>3</sup>Other=amphetamine, antidepressant, barbiturates, hallucinogens, inhalant, LSD, over-the-counter, other, Rx, stimulant, unknown, tranquilizers, and PCP.

<sup>4</sup>Adult=age 18 and older.

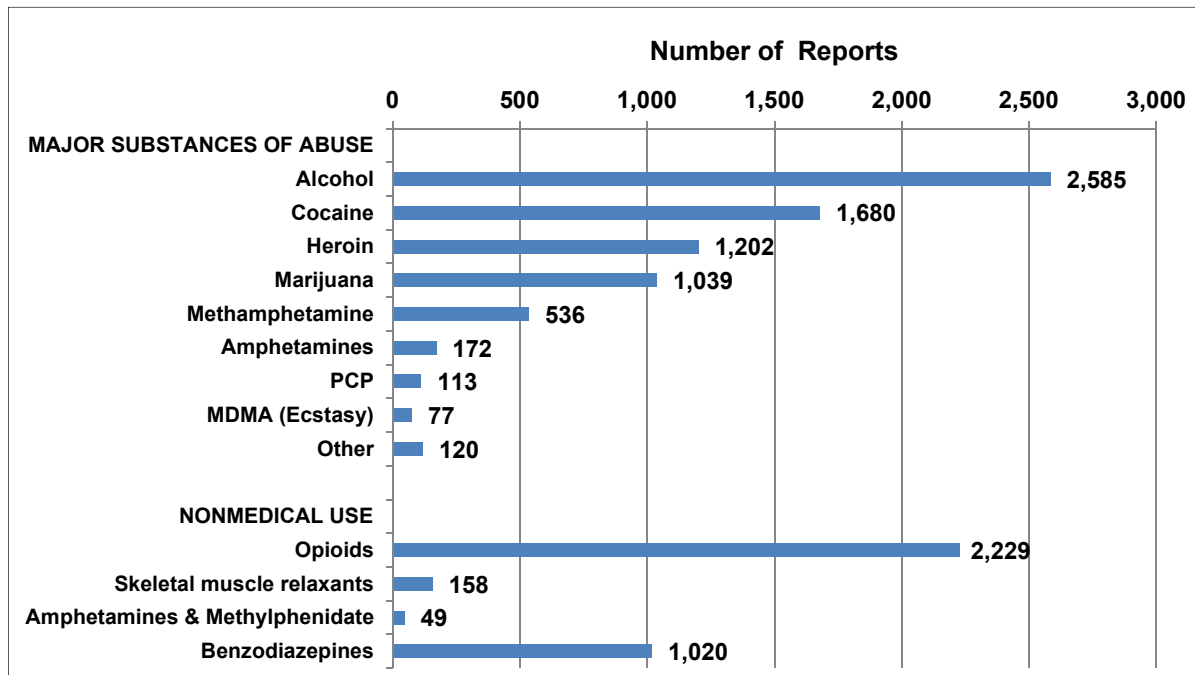
SOURCE: Washington State Alcohol/Drug Help Line

**Exhibit 7. Number and Percentage of Law Enforcement Drug Seizure Tests, by Drug, for King County (Seattle), Washington: 2007–2009**



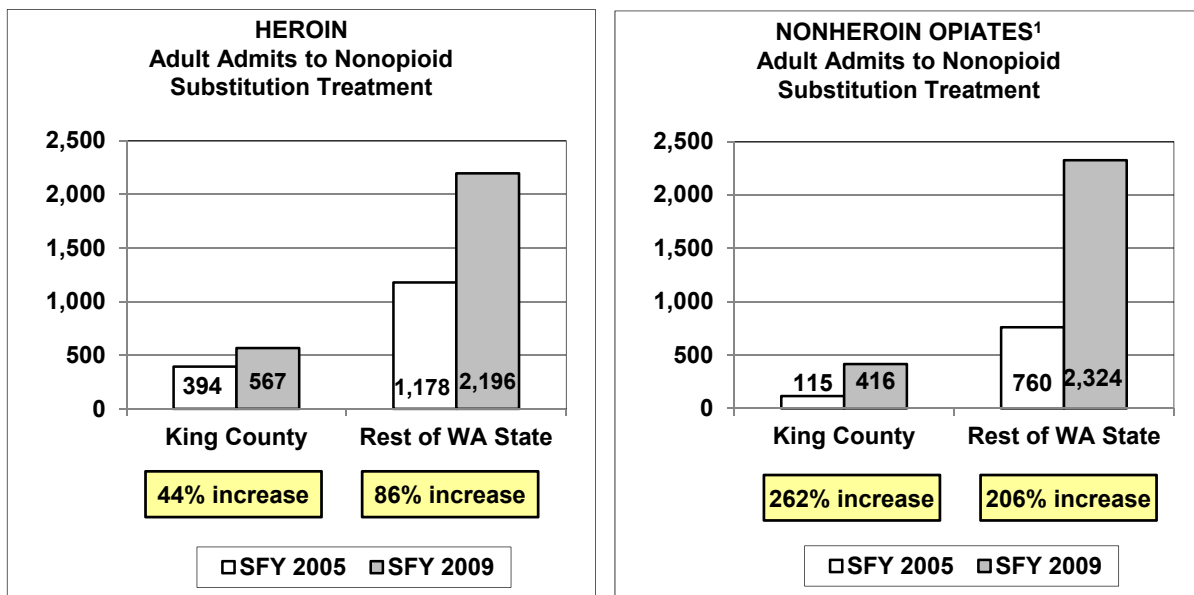
SOURCE: NFLIS, DEA, with data provided by the Washington State Patrol Crime Laboratory

**Exhibit 8. Number of DAWN ED Reports, by Drug in King (Seattle), Snohomish, and Pierce (Tacoma) Counties, Washington: January–June 2009**



SOURCE: DAWN *Live!*, OAS, SAMHSA, Accessed 12/10/2009

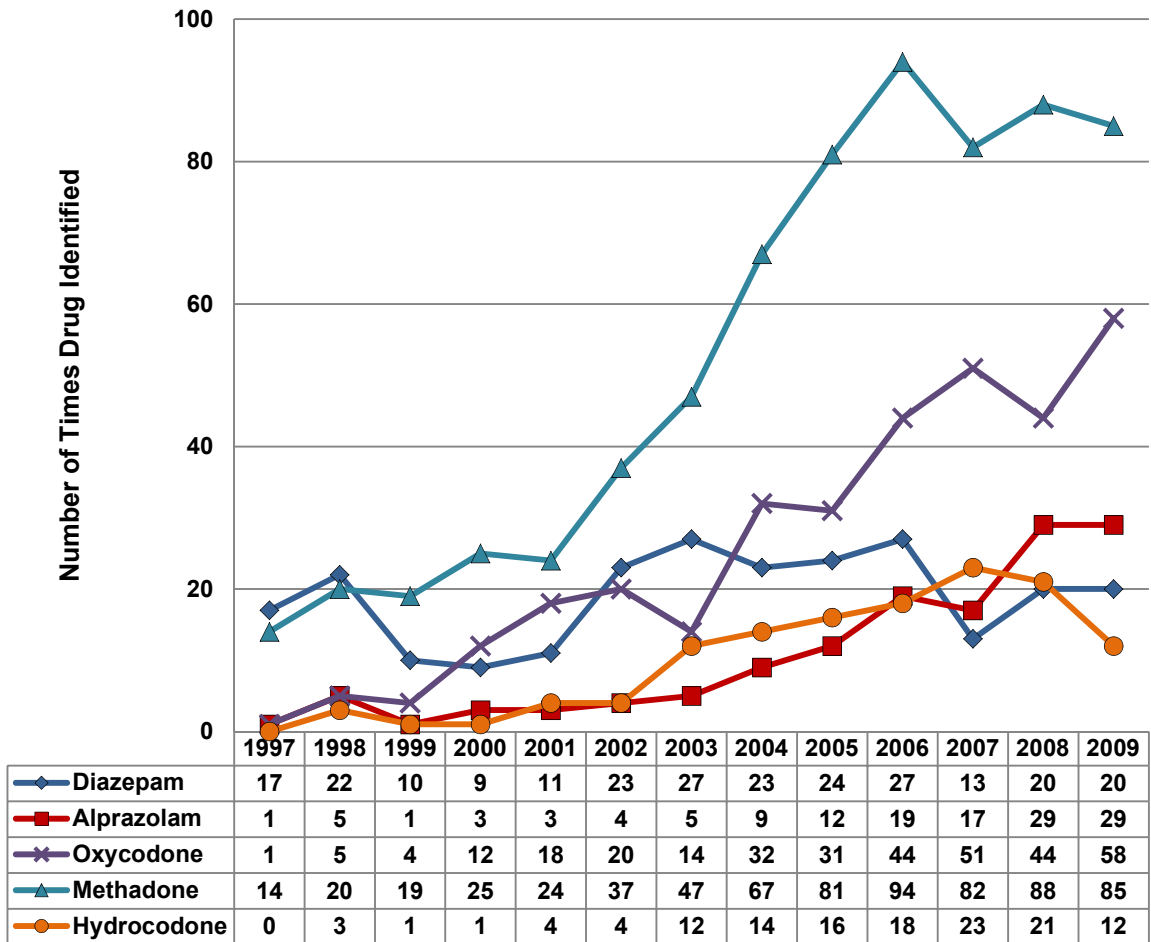
**Exhibit 9: Treatment Admissions to Nonopiate Substitution Treatment, King County Versus Rest of Washington State, by Primary Drug: State Fiscal Years (SFY) 2005 and 2009**



<sup>1</sup>Includes nonprescription methadone, oxycodone, other opiates, and "prescribed opiate substitute."

SOURCE: Washington State Division of Behavioral Health and Recovery, Treatment Report and Generation Tool

**Exhibit 10. Number of Drug-Caused Deaths for Selected Pharmaceutical Drugs, King County (Seattle), Washington: 1997–2009**



SOURCE: King County Medical Examiner, Public Health—Seattle and King County



**Exhibit 11. Demographic Characteristics of Residents Diagnosed 1982–2009, by Date of HIV Diagnosis, King County: Reported Through 12/31/2009**

	1982–2000		2001–2003		2004–2006		2007–2009 <sup>1</sup>		Trend <sup>2</sup> 2001–2009
	No.	%	No.	%	No.	%	No.	%	
<b>TOTAL</b>	<b>8,100</b>	<b>100%</b>	<b>1,064</b>	<b>100%</b>	<b>988</b>	<b>100%</b>	<b>909</b>	<b>100%</b>	
<b>HIV Exposure Category</b>									
Men who have sex with men (MSM)	6,025	77%	687	69%	610	70%	552	74%	up
Injection drug user (IDU)	459	6%	68	7%	53	6%	28	4%	down
MSM/IDU	829	11%	84	8%	87	10%	62	8%	
Heterosexual contact <sup>3</sup>	416	5%	156	16%	115	13%	99	13%	
Blood product exposure	93	1%	4	0%	1	0%	1	0%	
Perinatal exposure	27	0%	0	0%	1	0%	5	1%	
<b>SUBTOTAL-known risk</b>	<b>7,849</b>	<b>100%</b>	<b>999</b>	<b>100%</b>	<b>867</b>	<b>100%</b>	<b>747</b>	<b>100%</b>	
Undetermined/other <sup>4</sup>	251	N/A	65	N/A	121	N/A	162	N/A	N/A
<b>Residence</b>									
Seattle residence	6,971	86%	822	77%	735	74%	628	69%	down
King Co. residence outside Seattle	1,129	14%	242	23%	253	26%	281	31%	up

<sup>1</sup>Due to delays in reporting, data from recent years are incomplete.

<sup>2</sup>Chi-square statistical trends ( $p < .05$ ) were calculated for cases with known characteristics for the periods 2001–2003, 2004–2006, and 2007–2009.

<sup>3</sup>Includes presumed heterosexual cases (females who deny injection drug use but have had sexual intercourse with a man whose HIV status or HIV risk behaviors are unknown).

<sup>4</sup>Cases with undetermined risk, race/ethnicity, or place of birth are not included in percent or trend calculations.

SOURCE: Public Health—Seattle and King County, “HIV/AIDS Epidemiology Report”

# Substance Abuse Trends in Texas: 2009

Jane C. Maxwell, Ph.D.<sup>†</sup>

## ABSTRACT

*This report updates indicators of drug abuse in Texas since the 2008 report and describes trends by calendar year from 1987 to 2010. Important changes to drug patterns in Texas included increases in heroin use by a younger population. This was first noticed with the “cheese heroin” situation in Dallas, but heroin use by young persons is increasing statewide, with the number of teen admissions increasing 61 percent and admissions of persons in their twenties increasing 71 percent between 2005 and 2009. The primary types of heroin are Mexican black tar and powdered brown. Cocaine indicators decreased, and price and purity increased. Wholesale quantities were pure, but there was no explanation for this change other than the possible influence of trafficking wars in Mexico. No shortages of methamphetamine have been reported, although some indicators were down. Local “cooking” of “ice” or using over-the-counter pseudoephedrine with the “one pot” or “shake and bake” methods were common, although high-quality Mexican ice or shards made using the P2P method were also available. Interviews with methamphetamine users entering treatment continued to show the extent of their mental and physical impairments and their need for intensive and extended treatment. Other drug trend changes included: continuing shifts in demographics of cocaine users and ecstasy users; severity of problems among noncoerced marijuana treatment admissions; increasing driving while intoxicated/driving under the influence (DWI/DUI) arrests*

*involving drugs; increasing reports of marijuana homologs; a “cocktail” of hydrocodone, alprazolam, and carisoprodol; and cases involving BZP (1-benzylpiperazine) and TFMPP (1-(3-trifluoromethylphenyl)piperazine). The marketing of soft drinks that imitate the codeine cough syrup mix (“Lean” or “Drank”) was a concern. The majority of human immunodeficiency virus (HIV) and acquired immunodeficiency syndrome (AIDS) cases continued to be people of color. The proportion due to injection drug use continued to decrease, but the proportion among men who have sex with men was increasing. The case rates for syphilis and chlamydia have increased between 1997 and 2009, while the rate for gonorrhea has decreased. The sexually transmitted disease (STD) rates were much higher for young females than for young males. The recession has resulted in much lower employment rates of clients entering treatment, and there were more reports from outreach workers of people turning to prostitution to support themselves and their families, as well as of clients who have completed treatment but were unable to find employment and were turning back to drug and alcohol use. Serious concern of the magnitude of the substance abuse and mental health problem on the border continued.*

## Area Description

The population of Texas in 2010 was estimated to be 25,373,947, with 45 percent White, 12 percent Black, 39 percent Hispanic, and 5 percent “Other.” Illicit drugs continued to enter from Mexico through cities such as El Paso, Laredo, McAllen, and Brownsville, as well as through smaller towns along the border. The drugs then move northward for distribution through Dallas/Fort Worth and Houston. In addition, drugs move eastward from San Diego through Lubbock and from El Paso to Amarillo and Dallas/Fort Worth.

## Data Sources

*Substance Abuse Trends in Texas* is an ongoing series that is prepared annually as a report for the

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Community Epidemiology Work Group meetings sponsored by the National Institute on Drug Abuse (NIDA). This report updates the June 2009 report. To compare the June 2010 report with earlier periods, please access [www.utexas.edu/research/cswr/gcattc/drugtrends.html](http://www.utexas.edu/research/cswr/gcattc/drugtrends.html).

Data for this report include the following sources:

- **Student substance use data** for 2008 came from the *Texas School Survey of Substance Abuse: Grades 7–12, 2008* and the *Texas School Survey of Substance Abuse: Grades 4–6, 2008*, which were authored by L.Y. Liu and published by the Department of State Health Services (DSHS). Data on Texas college students came from the *2005 Texas Survey of Substance Use among College Students: Main Findings*, also written by L.Y. Liu and published by DSHS. For 2009, the data for high school students in grades 9–12 came from the *Youth Risk Behavior Surveillance System (YRBSS)—United States, 2009*, Morbidity and Mortality Weekly Report (MMWR) Surveillance System, downloaded June 3, 2010, at <http://apps.nccd.cdc.gov/youthonline/App/Results.aspx?LID=TX>.
  - **Data on drug use** by Texans age 12 and older came from the Substance Abuse and Mental Health Services Administration's (SAMHSA) *National Survey on Drug Use and Health (NSDUH)*. The statewide estimates are from the 2007–2008 NSDUH, and the sub-State estimates in appendix 1 are from the 2004, 2005, and 2006 NSDUH surveys. Estimates for the Dallas and Houston metropolitan areas are based on the 2005–2006 surveys.
  - **Poison control center data** came from the Texas Poison Center Network, DSHS, for 1998 through 2009, with updates on cannabis homologs through June 23, 2010. Analysis was provided by Mathias Forrester, epidemiologist with the Texas Poison Center Network, and by the author.
  - **Treatment data** were provided by DSHS's data system on clients admitted to treatment in DSHS-
- funded facilities from January 1, 1987, through December 31, 2009. For most drugs, characteristics of clients entering with a primary problem with the drug are discussed, but in the case of club drugs, information is provided on any client with a primary, secondary, or tertiary problem with that drug. Analysis was by the author.
  - **Information on methamphetamine use** comes from interviews with recent users entering treatment, an ongoing study by the author (NIDA R21 DA025029). Information on impaired drivers entering treatment was drawn from Maxwell, J.C., and Freeman, J. E. (2007), Gender differences in DUI offenders in treatment in Texas *Traffic Injury Prevention*, 8:353-360 and from Maxwell, J.C.; Freeman, J.E.; and Davey, J.D. Too young to drink but old enough to drive under the influence: a study of underage offenders as seen in substance abuse treatment in Texas, *Drug and Alcohol Dependence*, 104, 1-2, 107-112. Information on marijuana admissions to treatment is from Copeland, J., and Maxwell, J. C. (2007). Cannabis treatment outcomes among legally coerced and noncoerced adults. *BioMed Central Public Health*, 7:111-118.
  - **Information on drug-involved deaths** through 2008 came from death certificates and computer runs from the Bureau of Vital Statistics, DSHS; analysis was by the author. The information on cocaine, heroin, methadone, benzodiazepines, and stimulants for 1999–2008 came from multiple cause data tapes on May 25, 2010, by DSHS. Deaths involving mentions of other drugs through 2007 came from hard copies of death certificates; hard copies were not available for 2008.
  - **Information on drugs identified by laboratory tests** was from the Texas Department of Public Safety (DPS), which reported results from toxicological analyses of substances for 1998 through December 2009 to the National Forensic Laboratory Information System (NFLIS) of the Drug Enforcement Administration (DEA) and from DEA toxicologists. Analysis was by the author on data downloaded from NFLIS on April 4, 2010.

- **Price, purity, trafficking, distribution, and supply information** was provided for July–December 2009 reports on trends in trafficking from the Dallas, El Paso, and Houston Field Divisions of the DEA and from DEA’s Domestic Monitor Program (DMP).
- **Reports by users and street outreach workers** on drug trends for the first three quarters of fiscal year (FY) 2010 were reported to DSHS by workers at local human immunodeficiency virus (HIV) counseling and testing programs across the State.
- **Sexually transmitted disease (STD), HIV, and acquired immunodeficiency syndrome (AIDS) data** were provided by DSHS. The STD data are through 2009, and the HIV/AIDS data are for 2008. The HIV cases exclude any that later seroconverted to AIDS.

## DRUG ABUSE PATTERNS AND TRENDS

The 2007–2008 NSDUH estimated that 6.26 percent of the Texas population age 12 and older had used an illicit drug in the past month, which is below the national average of 8.02 percent. Additionally, 2.71 percent of Texans were dependent on or abused an illicit drug in the past year, compared with 2.78 percent nationally. For the period 2004–2006, 6.5 percent of the population age 12 and older in the Dallas metropolitan area and 6.2 percent in the Houston area had used any illicit drug. The prevalence of drug use by planning region is shown in appendix 1.

### Cocaine/Crack

Trends in cocaine use have varied over time, but the indicators declined in 2009 (exhibit 1). New terms for powder cocaine included “soft,” “snow seal,” and “her,” with new terms for crack cocaine including “hard,” “cookie,” and “biscuit.”

The *Texas School Survey of Substance Abuse: Grades 7–12, 2008* reported that lifetime use of powder and crack cocaine had dropped from a

high of 9 percent in 1998 to 7 percent in 2008, while past-month use dropped from 4 percent in 1998 to 2 percent in 2008. Some 6 percent of students in nonborder counties had ever used powder or crack/cocaine, and 2 percent had used it in the past month. In comparison, students in schools on the Texas border reported higher levels of cocaine use—10 percent lifetime and 4 percent past month (exhibit 2).

The 2009 Youth Risk Behavior Survey (YRBS) reported that 8.5 percent of Texas high school students had ever used cocaine, compared with 12.6 percent in 2007, 11.9 percent in 2005, and 13.0 in 2001. The 2005 Texas college survey reported that 10 percent had ever used cocaine or crack, and 2 percent had used it in the past month.

For the period 2007–2008, the NSDUH reported that 2.0 percent of the Texas population age 12 and older had used cocaine in the past year, below the national rate of 2.21 percent.

Texas Poison Center Network calls involving the use of cocaine increased from 497 in 1998 to 1,363 in 2007 and then decreased to 977 in 2008 and 792 in 2009 (exhibit 1). Sixty-seven percent of the cases in 2009 were male.

Cocaine (both crack and powder) represented 18 percent of all admissions to DSHS-funded treatment programs in 2009, down from 32 percent in 1995. Among all cocaine admissions, cocaine inhalers were the youngest and most likely to be Hispanic and involved in the criminal justice or legal systems (exhibit 3). Cocaine injectors were older than inhalers but younger than crack smokers; they were the most likely to be White. While 36 percent of the powder cocaine clients reported no problem with a second substance, 30 percent reported a problem with alcohol and 19 percent with marijuana. Of the crack cocaine clients, 38 percent reported no second substance problem, with 32 percent reporting a problem with alcohol, 18 percent with marijuana, and 4 percent with powder cocaine.

The term “lag” (exhibit 3) refers to the period from first consistent or regular use of a drug to the date of admission to treatment. Powder cocaine inhalers averaged 11 years between first regular use

and entrance to treatment, while injectors averaged 17 years of use before they entered treatment.

Between 1987 and 2009, the percentage of Hispanic treatment admissions using powder cocaine increased from 23 to 49 percent, while for Whites and Blacks percentages dropped from 48 to 27 percent and from 28 to 23 percent, respectively. Exhibit 4 shows these changes between 1993 and 2009 by route of administration. The proportion of Blacks among crack cocaine admissions fell from 75 percent in 1993 to 51 percent in 2009, while the proportion of Whites increased from 20 percent in 1993 to 32 percent in 2009. Hispanic crack admissions rose from 5 to 16 percent in the same time period.

The number of deaths statewide in which cocaine was mentioned increased from 321 in 1999 to 778 in 2006 before dropping to 496 in 2008 (exhibit 5). The average age of the decedents in 2008 was 43; 52 percent were White; 22 percent were Hispanic; and 20 percent were Black. Seventy-nine percent were male.

Exhibit 1 shows that the proportion of substances identified as cocaine by the DPS laboratories was decreasing. In 1998, cocaine accounted for 40 percent of all items examined, compared with 29 percent in 2009.

The Dallas DEA Field Division (FD) reported the purity of cocaine has increased. A gram increased from 55.46 percent pure in 2008 to 61.37 percent pure as of June 1, 2010; an ounce increased from 44.7 percent pure in 2008 to 46.4 percent pure in 2010; and a kilogram increased from 49.87 percent in 2008 to 69.0 percent pure in 2010.

The El Paso DEA FD reported that due to turf wars, drug traffickers had curbed their cocaine smuggling activities through 2008. In the first 6 months of 2009, however, there was a rise in the importation and availability, but not to the levels seen before the start of the conflict. Crack cocaine use and distribution was a concern in the Midland-Odessa area. The Houston DEA FD reported the availability of cocaine as high.

Cocaine continued to be available across the State (exhibit 6). A gram of powder cocaine that cost \$50–\$80 in Dallas in 2008 cost \$70–\$120 in Dallas in 2009; \$40–\$120 in El Paso; \$30 in

Laredo; \$40 in McAllen; and \$60–\$100 in Houston. An ounce in 2009 cost \$450–\$1,200 in Dallas; \$600–\$1,000 in El Paso; and \$500–\$800 in San Antonio, Austin, and Waco. The price of a kilogram of cocaine in Matamoros, across from Brownsville, had increased from \$12,000–\$13,000 to \$17,000. Prices elsewhere were: \$19,000–\$20,000 in Brownsville; \$22,000–\$28,000 in Dallas; \$20,000–\$26,000 in Houston; \$20,000–\$24,000 in El Paso; \$19,000–\$25,000 in Lubbock; \$25,000–\$27,500 in Tyler; and \$25,000–\$28,000 in San Antonio.

Across the State, a rock of crack cost \$10–\$60, with \$10–\$20 being the most common price. A kilogram that cost \$17,500–\$27,500 in Dallas in 2008 cost \$22,000–\$28,000 in 2009. An ounce of crack cocaine cost \$500 in El Paso; \$700–\$950 in Fort Worth; \$800 in Lubbock; \$350–\$500 in San Antonio, Austin, and Waco; and \$550–\$700 in Houston. A kilogram cost \$14,000 in El Paso; \$23,000–\$25,000 in San Antonio; and \$26,000–\$27,500 in Tyler.

## Alcohol

Alcohol was the primary drug of abuse in Texas. In 2008, 63 percent of Texas secondary school students (grades 7–12) had ever used alcohol, and 30 percent had drunk alcohol in the last month. Lifetime use decreased by 5 percent, and past-month use decreased by 3 percent between 2006 and 2008. Of particular concern was heavy consumption of alcohol, or binge drinking, which is defined as drinking five or more drinks at one time. In 2008, 12 percent of all secondary students said that when they drank, they usually drank five or more beers at one time, and 13 percent reported binge drinking of liquor, which has remained relatively stable since 1992 (exhibit 7).

Among students in grades 4–6 in 2008, 23 percent had ever drunk alcohol, and 15 percent had drunk alcohol in the past school year. Between 2006 and 2008, lifetime use of alcohol increased 4 percent, and past-year use increased 12 percent. Eleven percent of fourth graders had used alcohol in the school year, compared with 21 percent of sixth graders.

The 2009 YRBS reported 76 percent of Texas high school students in grades 9–12 had ever drunk alcohol; 45 percent had drunk in the past month; and 26 percent had drunk five or more drinks in a row in the last month. In comparison, in 2001, 81 percent had ever drunk alcohol; 49 percent had used in the last month; and 31 percent had drunk five or more drinks at a time. In 2009, 24 percent of females and 27 percent of males reported binge drinking, compared with 28 percent of females and 30 percent of males reporting binge drinking behavior in 2007.

The 2005 Texas college survey found that 84 percent had drunk alcohol in their lifetime, and 66 percent had drunk in the past month. Almost 30 percent of college students reported binge drinking (38 percent males and 23 percent females). Although the legal drinking age is 21, 58 percent of college students age 18–20 reported drinking an alcoholic beverage in the past month.

The 2007–2008 NSDUH estimated that 47.03 percent of all Texans age 12 and older had drunk alcohol in the past month, below the national average of 51.39 percent; 23.21 percent had drunk five or more drinks on at least 1 day (binge drinking) in the past month, below the national average of 23.2 percent. Among underage Texas drinkers (age 12–20), 25 percent reported past-month alcohol use, compared with 28.1 percent nationally; 16.3 percent of Texas underage youths reported past-month binge drinking, compared with 18.8 percent nationally. Some 6.88 percent of Texas age 12 and older were found to be alcohol dependent or abusers in the past year, compared with 7.43 percent of the U.S. population. The highest rate of binge drinking was in Texas sub-State region 1, and the lowest rate was in Region 4. Region 10 had the highest proportion of the Texas population who thought there was great risk in drinking five or more drinks once or twice a week, while Region 7 had the lowest perception of great risk (appendix 1).

In 2009, 28 percent of all clients admitted to publicly funded treatment programs had a primary problem with alcohol. The characteristics of alcohol admissions have changed over the years. In 1988, 82 percent of the clients were male,

compared with 70 percent in 2009. The proportion of White clients declined from 63 percent in 1988 to 55 percent in 2009, and the proportion of Hispanic clients increased from 28 to 30 percent. The proportion of Black clients increased from 7 to 13 percent. The average age increased from 33 to 39 years. Alcohol clients are becoming more likely to be polydrug users: the proportion reporting no secondary drug problem dropped from 67 to 54 percent, and the proportion with a problem with cocaine (powder or crack) increased from 7 to 20 percent. Consuming cocaine and alcohol at the same time produces cocaethylene, which intensifies cocaine's euphoric effects. The characteristics of persons who entered treatment with a past-year offense for driving under the influence (DUI) have also changed over time. Between 1990 and 2008, the proportion of past-year DUI arrestees who went to DSHS-funded treatment who were female increased from 13 to 29 percent, and the proportion of DUI treatment admissions who had a primary problem with alcohol decreased from 88 to 67 percent. Of those DUI arrestees under the legal drinking age of 21 who entered treatment, the proportion reporting a primary problem with alcohol decreased from 75 percent in 1990 to 21 percent in 2008; the proportion with a primary problem of marijuana increased from 19 to 63 percent; and the proportion with a primary problem with cocaine increased from 5 to 7 percent.

## Heroin

Heroin indicators rose in 2008 and 2009 (exhibit 8), with more indications of growing use among teenagers and young adults. Outreach workers in Houston reported an increase in heroin use.

The proportion of Texas secondary students reporting lifetime use of heroin dropped from 2.4 percent in 1998 to 1.4 percent in 2008. The 2009 YRBS found 2.1 percent of Texas high school students had ever used heroin, compared with 2.4 percent in 2007 and 3.0 percent in 2005 and 2001. The 2005 college survey found 5 percent of students had ever used heroin or other opiates. The 2004–2006 NSDUH reported 0.1 percent of Texans age 12 and older had used heroin in the past year. Calls

to the Texas Poison Center Network involving confirmed exposures to heroin ranged from 181 in 1998 to a high of 296 in 2000, but they dropped to 209 in 2009 (exhibit 8).

Heroin was the primary drug of abuse for 13 percent of clients admitted to treatment in 2009. The characteristics of these addicts vary by route of administration, as exhibit 9 illustrates. Most heroin addicts entering treatment inject the drug, but the proportion inhaling heroin increased from 4 percent of all heroin admissions in 1996 to 19 percent in 2009. During that time, the proportion of inhalers who were Hispanic increased from 26 to 61 percent, and the average age of inhalers decreased from 30 to 28 years.

While the number of individuals who inhale heroin was small, the lag period between first use and seeking treatment for this group was 7 years, compared with 14 years for injectors. This shorter lag period means that, contrary to the street rumors that “sniffing or inhaling is not addictive,” inhalers can become dependent on heroin. They will either enter treatment sooner while still inhaling, or they will shift to injecting, thus increasing their risk of hepatitis C and HIV infection, becoming more impaired, and entering treatment later. The proportion of all treatment clients with a primary problem with heroin who are Hispanic increased from 23 percent in 1996 to 54 percent in 2009 (exhibit 10).

“Cheese heroin,” a mixture of Tylenol PM® and heroin (heroin combined with diphenhydramine and acetaminophen), continued to be a problem in Dallas, and heroin inhaling was increasing across the State. Diphenhydramine has traditionally been used as a “cut” to turn tar into inhalable powder. Cases of cheese heroin have been reported in other counties in the Dallas/Fort Worth area, but the term “cheese heroin” was rarely reported elsewhere in the State. However, heroin use by teenagers and persons in their twenties continued to increase statewide.

The number of teenagers with a primary problem with heroin entering treatment increased 61 percent between 2005 and 2009, while the number in their twenties increased 71 percent, those in their thirties increased 52 percent, those in their forties

increased 11 percent, and those in their fifties and older increased 31 percent. As age increased, users shifted route of administration, with 87 percent of clients age 40 and older reporting injecting the drug (exhibit 11).

Of all the 2009 heroin admissions, 47 percent reported no second substance problem, and 17 percent reported a problem with powder cocaine (which shows the tendency to “speedball,” or use heroin and cocaine sequentially). Nine percent reported a second problem with marijuana, followed by 8 percent with alcohol, 7 percent with other opiates, and 5 percent with crack cocaine.

In 2008, there were 395 deaths in Texas involving heroin (exhibit 12). Fifty-eight percent were White; 34 percent were Hispanic; 5 percent were Black; and 80 percent were male. The average age was 40.

Exhibit 8 shows that the proportion of items identified as heroin by DPS laboratories has remained low at 1–2 percent over the years. In the Dallas DEA FD, the purity of a gram of heroin decreased from 25.9 percent in 2008 to 10.1 percent through June 1, 2010.

The predominant form of heroin in Texas is black tar, which has a dark, gummy, oily texture that can be diluted with water and injected. Exhibit 13 shows the decline in price over the years. Depending on the location, black tar heroin sold on the street for \$5–\$20 per paper, balloon, or capsule; \$80–\$300 per gram; \$1,000–\$5,000 per ounce; and \$25,000–\$45,000 per kilogram. An ounce of black tar cost \$1,000–\$2,300 in El Paso; \$1,200–\$2,400 in Austin, San Antonio, and Waco; \$2,500–\$2,300 in Fort Worth; \$2,500–\$3,000 in Houston; and \$5,000 in Lubbock. Black tar heroin cost \$32,000–\$34,000 per kilogram in Dallas; \$25,000 in El Paso; and \$50,000–\$60,000 in San Antonio.

Mexican brown heroin, which is black tar heroin that has been cut with lactose, diphenhydramine, or another substance and then turned into a powder to inject or inhale, cost \$10–\$20 per cap and \$110–\$250 per gram. A gram ranged between \$250 and \$300 in El Paso. An ounce cost \$1,200–\$1,600 in San Antonio.

Colombian white heroin is rarely seen on the streets in Texas, but there are sporadic and recurring reports of wholesale quantities of South American white heroin transiting through Dallas to the Northeast. In addition, there have been anecdotal reports of Southwest Asian heroin being brought back into Texas from troops returning from Afghanistan.

Exhibit 14 shows the purity and price of heroin purchased by the DEA in four Texas cities under the DMP. Heroin is much purer at the border in El Paso and decreases in purity and increases in price as it moves north, since it is “cut” with other products as it passes through the chain of dealers.

### Other Opiates

The “other opiates” group excludes heroin but includes opiates such as methadone, codeine, hydrocodone (Vicodin®, Tussionex®), oxycodone (OxyContin®, Percodan®, Percocet-5®, Tylox®), buprenorphine (Suboxone® and Subutex®), d-propoxyphene (Darvon®), hydromorphone (Dilaudid®), morphine, meperidine (Demerol®), and opium.

The 2008 Texas secondary school survey queried about use of other opiates “to get high,” and reported that 2.0 percent had ever used hydrocodone; 1.8 percent reported ever having drunk codeine cough syrup; and 1.1 percent had ever used oxycodone in that manner.

The 2007–2008 NSDUH reported that 4.43 percent of Texans age 12 and older had used pain relievers nonmedically in the past year (compared with 4.89 percent nationally). Region 7 reported the highest level of past-year nonmedical use of pain relievers in 2004–2006, and sub-State region 6 had the lowest levels of use (appendix 1).

The proportion of deaths involving only methadone or methadone plus alcohol decreased from 58 percent of all methadone deaths in 1992 to 39 percent in 2007, while those involving combinations with illicit drugs decreased from 25 to 15 percent, and those involving combinations with prescription or licit drugs increased from 17 to 46 percent. The number involving overdose deaths of

clients in narcotic treatment programs has remained level, totaling 11 among all the methadone deaths in 1993 and 11 in 2007.

Seven percent of all clients who entered publicly funded treatment during 2009 used opiates other than heroin. Of these, 145 used illegal methadone and 5,844 used other opiate drugs (exhibit 15). Those who reported a primary problem with other opiates differed from those who reported a problem with heroin. They were much more likely to be female (57 percent), to be White (77 percent), to have sought help in an emergency department (45 percent), and to report more health and psychological or emotional problems in the month prior to entering treatment. Fifty-six percent of these clients with problems with other opiates also reported problems with other substances, such as sedatives (17 percent), alcohol (12 percent), and marijuana (9 percent). The clients with problems with illicit methadone were also more likely than heroin admissions to be female (49 percent); 71 percent were White, and 16 percent were Hispanic. Some 36 percent had no second drug problem, and of those who did have other problems, 17 percent had problems with other opiates, 14 percent had problems with alcohol, 11 percent had problems with sedatives, and 8 percent had problems with heroin.

Exhibit 15 shows the number of deaths involving methadone, “other opiates,” and “other synthetic narcotics.” These are the International Classification of Diseases (ICD) categories that are used to show the causes of death; other than “methadone,” they do not provide data on the specific drugs involved. Because data were available from copies of the death certificates prior to 2008, those numbers are included in Exhibit 15 to show which of these drugs pose larger problems. Persons who died from one of the other opiates in 2007 were more likely to be White and to be older than those persons whose death certificates mentioned heroin.

Of the 360 deaths with a mention of hydrocodone in 2007, 54 percent were male; 78 percent were White; 9 percent were Black; 13 percent were Hispanic; and the average age was 41. Of the 65 deaths in 2007 with a mention of oxycodone,



63 percent were male; 73 percent were White; 8 percent were Black; 1 percent was Hispanic; and the average age was 41. There were 48 deaths with a mention of fentanyl in 2007. Of these, 62 percent were male; 89 percent were White; 8 percent were Hispanic; and the average age was 42. Of the 170 deaths with a mention of methadone in 2008, 65 percent were male; 86 percent were White; 1 percent was Black; 11 percent were Hispanic; and the average age was 38.

Drinking codeine cough syrup with promethazine mixed with a soda, Karo® syrup, and flavored with Jolly Rancher® candies has been a problem in parts of Texas, especially around Houston, since 1999. Its popularity has been linked with the emergence of hip-hop music, which often refers to the practice as “Sippin’ on Syrup” or “Purple Rain.” In 2009, soft drinks in bottles and purple cans that imitate the mixture were available in convenience stores, including three named “Drank®,” “Sippin’ Syrup®,” and “Lean®.” These contain valerian roots, melatonin, and rose hips, which are reported to produce a “downer” or “sleepy” effect. Comments on the cans include “slow your roll,” “slow motion potion,” and “euphoric thoughts, extended relaxation, experience calmness.” Another version with alcohol is named “Sizzurp®” and is marketed in purple glass bottles that contain cognac, vodka, and fruit flavoring.

Promethazine or phenergan cough syrup with codeine sold for \$20 an ounce in Tyler and San Antonio. Hydrocodone sold for up to \$20 per pill in Dallas, \$1–\$3 per pill in El Paso, and \$5–\$7 per pill in San Antonio. OxyContin® cost \$1 per milligram in Dallas and \$10 per tablet in San Antonio. Dilaudid® sold for \$40–\$60, and a 10-milligram methadone tablet cost \$7–\$10 in Fort Worth, \$2 in El Paso, and \$4–\$8 in San Antonio.

In the Dallas DEA FD, hydrocodone, alprazolam, and promethazine with codeine are the most commonly diverted drugs. Other popular drugs are carisoprodol, diazepam, Adderall®, methadone, and oxycodone. The Houston DEA FD reported hydrocodone as one of the most commonly abused drugs, and codeine cough syrup continued to be abused. The El Paso DEA FD reported

hydrocodone, methadone, morphine, oxycodone, and Percocet were available, and there have been increased seizures of these drugs. In addition, Mexican pharmacies on the border can sell medications over the counter that require prescriptions in the United States, and these pharmacies continue to be popular sources of pain medications for El Paso residents. The number of exhibits of opioids examined by the DPS laboratories has increased over time, with some variations between years. Hydrocodone and methadone peaked in 2007, while oxycodone peaked in 2009 (exhibit 15).

In Houston, prescriptions for the “Houston Cocktail” or “Holy Trinity” (alprazolam, hydrocodone, and carisoprodol) sold for \$825–\$950, and 6 doctors at Houston area “pain clinics” wrote between 23,907 and 43,328 prescriptions for those drugs in a 15-month period. Outreach workers in Houston reported pain clinics appeared to be the biggest drug dealers in town. Hydrocodone, alprazolam, and codeine were the most diverted drugs in the Dallas area. Street outreach workers in Harris and Tarrant Counties report increased use of oxycodone and hydrocodone. In Fort Worth, pain clinics were reported as sources of opioid medications. In Beaumont, the number of pain pills ingested at one time was increasing.

## Marijuana

Marijuana homologs (synthetic marijuana) are appearing in Texas, according to the Texas poison centers. They are herbal products that contain synthetic compounds that mimic the primary psychoactive ingredient in marijuana, tetrahydrocannabinol (THC). The products are known and sold under a wide variety of names such as “K2,” “K2 summit,” “spice,” “spice gold,” “spice silver,” “spice diamond,” “genie,” “zohai,” “space,” “skunk,” “Yucatan fire,” “halo,” “black mamba,” “damiana,” and “drolle.” They are available through the Internet and in specialized stores and are marketed as herbal incense. When smoked, they give users a marijuana-like high.

Symptoms associated with use of the marijuana homologs include heart palpitations, respiratory issues, panic attacks, hallucinations, delusions,

vomiting, dilated pupils, and agitation. The substances may also produce withdrawal and dependence in users. Normal drug screens do not detect marijuana homologs. Between January 1 and June 30, 2010, the Texas poison center network received 99 calls involving 87 exposures. Age range was between 13 and 40; 31 percent were underage (20 and younger); 82 percent were male; and 91 percent had either misused or abused the substance.

Marijuana indicators have varied over the years (exhibit 16). Among Texas students in 2008 in grades 4–6, 1.7 percent had ever used marijuana, with 1.2 percent reporting use in the past school year. Among Texas secondary students (grades 7–12), 25 percent had ever tried marijuana, and 10 percent had used in the past month. From 2006 to 2008, this amounted to a 7-percent decrease in lifetime use and a 9-percent decrease in past-month use. Past-month use by grade level is shown in exhibit 17.

The 2008 survey found that of those youths who used marijuana, 66 percent smoked “blunts” at least one-half of the time, compared with 58 percent who smoked “joints” at least one-half of the time. The relationship between tobacco use, marijuana use, and cigars was also seen in the finding that of those youths who had ever used tobacco and never used marijuana, 2.5 percent had ever used cigars. In comparison, of those who had ever used tobacco and ever used marijuana, 72 percent had ever used cigars.

In 2009, the YRBS reported that 37 percent of Texas high school students in grades 9–12 had ever smoked marijuana, compared with 38 percent in 2007, 42 percent in 2005, and 41 percent in 2001.

The 2005 Texas college survey reported that 37 percent of students had ever used marijuana, and 11 percent had used in the past month. The 2007–2008 NSDUH estimated that 7.73 percent of Texans age 12 and older had used marijuana in the past year (compared with 10.22 percent nationally), with 4.3 percent using in the past month (compared with 5.9 percent nationally). Region 7 reported the highest level of past-year

use of marijuana, and region 10 had the lowest level (appendix 1).

The Texas Poison Center Network reported there were 133 calls confirming exposure to marijuana in 1998, compared with 544 in 2006, 502 in 2008, and 208 in 2009 (exhibit 16).

Marijuana was the primary problem for 24 percent of admissions to treatment programs in 2009. While 46 percent reported no second substance abuse problem, 28 percent had a problem with alcohol, and 8 percent had a problem with powder cocaine. The average age was 24. Approximately 41 percent were Hispanic; 28 percent were White; and 30 percent were Black. Eighty-one percent had legal problems or had been referred from the criminal justice system. Those who were referred from the criminal justice system were more likely to complete treatment, compared with nonreferred clients. Referred clients were more likely to have received less intensive forms of treatment and to have not used marijuana in the month prior to 90-day post-discharge follow-up. This study concluded that more public health information is needed on marijuana dependence and there is a need for increased availability of early and brief interventions in a variety of primary health care settings to reduce the late presentations of the more severely impaired voluntary clients (Copeland and Maxwell, 2007).

Marijuana was identified in 33 percent of all the exhibits analyzed by DPS laboratories in 2000 but in only 26 percent in 2009 (exhibit 16).

The El Paso DEA FD reported that most of the marijuana passing through the El Paso area was destined for other cities in the United States, and large quantities were routinely seized in the area, but there is little marijuana cultivation in the area. In the Dallas/Fort Worth area, large-scale amounts of imported Mexican marijuana, domestically cultivated plants, and indoor-grow operations provided large amounts of high-quality cannabis. The Houston DEA FD reported Mexican marijuana was the primary form in that area, but hydroponic and indoor grow houses operated by Asian and Anglo males have also been encountered in the FD.

Hydroponic marijuana sold for \$3,000–\$5,500 per pound in Austin and San Antonio and \$3,500–\$6,500 in Dallas. The average price for a pound of Mexican marijuana was \$50–\$75 in Matamoros; \$400 in San Antonio; \$200–\$300 in El Paso; \$500–\$600 in Lubbock; \$450–\$600 in Midland; \$250–\$650 in Alpine; and \$300–\$500 in Dallas. Sinsemilla sold for \$750–\$1,200 per pound in the Dallas/Fort Worth area. Exhibit 18 shows the decline in the price of a pound of marijuana since 1992.

Outreach workers in Dallas reported increased marijuana use among the homeless, and Houston workers reported the term “burn” was used to describe smoking marijuana.

### Stimulants

Amphetamine-type substances come in different forms and with different names. “Speed” (“meth,” “crank”) is a powdered methamphetamine that is sold in grams or ounces. It can be snorted or injected. “Pills” can be pharmaceutical grade stimulants such as dextroamphetamine, Dexedrine®, Adderall®, Concerta®, Vyvanse®, Ritalin® (methylphenidate), or phentermine, or they can be methamphetamine powder that has been pressed into tablets and sold as amphetamines, “Yaba,” or ecstasy. Stimulant pills can be taken orally, crushed for inhalation, or dissolved in water for injection.

There is also a damp, sticky methamphetamine powder of higher purity than speed that is known as “base” in Australia and “peanut butter” in parts of the United States. “Peanut butter” is a term that is more common with older long-term users who had previously had access to the P2P method of cooking (a method where the principal chemicals are phenyl-2-propanone, aluminum, methylamine, and mercuric chloride; this method yields lower quality dl-methamphetamine). “Ice,” also known as “crystal” or “tina” or “shards” is methamphetamine that has been “washed” in a solvent to remove impurities; it has longer-lasting physical effects and purity levels above 80 percent. Ice can be smoked in a glass pipe, “chased” on aluminum foil, mixed with marijuana and smoked through a “bong,” or mixed with water and injected.

The Texas secondary school survey reported that lifetime use of stimulants, or “uppers,” was 5 percent, and past-month use was 2 percent in 2008. Two percent responded positively to a separate question regarding lifetime use of methamphetamine, and 1 percent reported past-month use. The 2009 YRBS reported lifetime use of methamphetamine by Texas high school students was 3.7 percent, compared with 6.7 percent in 2007, 7.3 percent in 2005, and 8.4 percent in 2001. The 2005 Texas college survey reported that 10 percent had ever used stimulants, and 2 percent had used in the past month. The 2004–2006 NSDUH reported that past-year nonmedical use of stimulants (which included amphetamines, methamphetamine, methylphenidate, and prescription diet pills) in Texas was 1.4 percent, and past-year use of methamphetamine was 0.7 percent.

As exhibit 19 shows, all methamphetamine indicators except purity have decreased since 2005, when the precursor regulations were implemented. There were 144 calls to Texas poison control centers involving exposure to methamphetamine in 1998; 336 in 2006; 315 in 2007; 298 in 2008; and 190 in 2009 (exhibit 18).

Methamphetamine/amphetamine admissions to treatment programs increased from 5 percent of all admissions in 2000 to 11 percent in 2007 and dropped to 8 percent in 2009. The average age of clients admitted for a primary problem with these stimulants increased from 26 in 1985 to 33 in 2009 (exhibit 19). The proportion of White clients rose from 80 percent in 1985 to 85 percent in 2008, while the proportion of Hispanics remained at 11 percent, and the proportion of Blacks dropped from 9 to 2 percent. Unlike the other drug categories, more than one-half of the clients entering treatment were females (56 percent). Clients with a primary problem with methamphetamine reported secondary problems with marijuana (24 percent), alcohol (17 percent), and powder cocaine (5 percent); 41 percent reported no secondary substance abuse problem. GHB (gamma hydroxybutyrate) was also frequently mentioned. Of those clients who came to treatment with a problem with GHB, 57 percent reported that methamphetamine was their primary

problem. In addition, methamphetamine dealers are reported to be selling GHB.

Users of amphetamines or methamphetamine tend to differ depending on their route of administration, as exhibit 20 shows. Methamphetamine injectors were more likely to have been in treatment before (62 percent readmissions) than amphetamine pill takers (48 percent) or ice smokers or inhalers (both at 45 percent).

Smoking ice peaked in 2007 (exhibit 21). Since then, with the precursor bans, the availability of the different forms of methamphetamine has changed, with the percentage smoking ice decreasing slightly and injecting increasing.

Exhibit 19 shows the number of deaths due to all psychostimulants; data specifically for methamphetamine were not available for 2008. Earlier analysis looking only for amphetamines or methamphetamine found there were 17 deaths in 1998; 177 in 2005; 116 in 2006; and 106 in 2007. Of the decedents in 2007, 76 percent were male; 73 percent were White; 22 percent were Hispanic; 4 percent were Black; and the average age was 40.

Methamphetamine and amphetamine together represented 16 percent of all items examined by DPS laboratories in 2000 and reached a peak of 25 percent in 2005 before dropping to 14 percent in 2009 (exhibit 19). Some 13.2 percent of the exhibits in 2009 were methamphetamine, and 0.7 percent were amphetamine.

The National Clandestine Laboratory Database reported that 1,773 methamphetamine laboratories were seized in Texas in 1999, compared with 429 in 2000; 619 in 2001; 547 in 2002; 677 in 2003; 452 in 2004; 270 in 2005; 132 in 2006; 79 in 2007; 112 in 2008; and 10 in 2009. There are a number of recipes for making methamphetamine in local laboratories. The most common method in 2010 was the “cold method,” which uses ephedrine, red phosphorus, and iodine crystals. This recipe produces d-methamphetamine (dextromethamphetamine). The “Nazi method” includes ephedrine or pseudoephedrine, lithium, and anhydrous ammonia. The most commonly diverted pills are 60-milligram pseudoephedrine tablets, such as Sudafed®, Wal-pheds®, Xtreme Relief®, Mini-Thins®,

zolina, two-way, and ephedrine release. Prior to precursor regulations in the 1980s, most illicit laboratories used the P2P method, which is based on 1-phenyl-2-propanone. According to the DEA, the P2P method is the primary method used to produce ice or shards in Mexico, where the precursor chemicals for P2P are still available. The Mexican P2P process produces l-methamphetamine (levomethamphetamine), which is not thought to possess the same addiction potential of d-methamphetamine. Although Texas law requires purchasers of pseudoephedrine products to register when they buy the product, not all of the registries are computerized. Some methamphetamine “cooks” are returning to “smurfing” to obtain pseudoephedrine by paying hourly wages to people to purchase the product from every available outlet.

A new method of producing methamphetamine that has become common is the one pot or shake and bake method. All of the necessary chemicals are placed in a single container, such as a 2-liter soda bottle or Coleman fuel can. The container is turned upside down or shaken to start the chemical reaction. Some recipes use dry ammonia nitrite and cough syrup rather than liquid anhydrous ammonia and pseudoephedrine pills. Other recipes involve the use of other heavy metals, and users report ice can be produced in home laboratories with concentrated solutions the same way rock candy is grown. However, DEA toxicologists have tested this process and found the crystals are not methamphetamine.

A pound of powder methamphetamine sold for \$8,000–\$19,000 in Dallas; \$13,000 in Houston; \$8,000–\$14,000 in El Paso; and \$20,000–\$25,000 in San Antonio. A pound of ice sold for \$9,000–\$16,000 in San Antonio and \$10,000–\$19,000 in Dallas. An ounce of ice sold for \$1,000–\$1,800 in the Dallas FD, a change from \$1,350–\$1,500 1 year ago. An ounce also sold for \$1,000 in El Paso and \$1,000–\$1,600 in San Antonio.

The Dallas FD reported more local clandestine laboratories have been encountered. In Fort Worth, a box of 60-milligram, 36-count pseudoephedrine pills sold for \$18; in El Paso, a 100-tablet bottle cost \$100; in Tyler, a 60-milligram bottle with 30

tablets cost \$18. Red phosphorus sold for \$100 per ounce in Fort Worth.

The Dallas DEA laboratory, which covers Texas and six other States, reported the purity of a kilogram of methamphetamine increased from 62 percent in 2008, to 87 percent in 2009, to 94 percent in 2010. The purity of a gram increased from 41 to 78 percent, and the purity for an ounce increased from 42 to 73 percent in the same time period. The Dallas DEA FD reported that there had not been a significant increase in clandestine laboratories, and most of the large seizures of methamphetamine were of Mexican origin made using the P2P process. Additionally, street-level seizures were made in local laboratories. The Houston DEA FD reported the presence of Mexican methamphetamine, with distribution by the Mexican Mafia and Aryan Brotherhood. Local independent laboratories continued to be found.

Ice can be cut with methylsulfonylmethane. Methylsulfonylmethane is available in 5-gallon quantities at local feed stores, and it is added to the ice and heated. In Tulsa, methylsulfonylmethane cost \$17.95 per pound. The mixture of ice and methylsulfonylmethane is spread out to dry like peanut brittle and then crushed up to look like a pure ice mixture. The typical first cut of a pound of methamphetamine with methylsulfonylmethane can yield 2 pounds of medium-purity methamphetamine that retains the same crystalline appearance. In addition, the DEA reported powdered shards of ice being smuggled into Texas and then recrystallized prior to sale. Street outreach workers in Houston, Lufkin, and Huntsville reported methamphetamine was continuing to be abused in those areas.

## Depressants

The depressant category includes three groups of drugs: barbiturates, such as phenobarbital and secobarbital (Seconal®); nonbarbiturate sedatives, such as methaqualone, over-the-counter sleeping aids, chloral hydrate, and tranquilizers; and benzodiazepines, such as diazepam (Valium®), alprazolam (Xanax®), flunitrazepam (Rohypnol®), clonazepam (Klonopin® or Rivotril®), flurazepam (Dalmane®), lorazepam (Ativan®),

and chlordiazepoxide (Librium® and Librax®). Rohypnol® is discussed separately in the Club Drugs section of this report.

The 2008 Texas secondary school survey reported lifetime use of downers was 6 percent, and past-month use was 2 percent. Four percent had ever used alprazolam, and 1 percent had ever used diazepam. The 2005 Texas college survey reported 9 percent had ever used sedatives, and 2 percent had used them in the past month. The 2004–2006 NSDUH reported 0.2 percent of Texans age 12 and older had used sedatives in the past year.

About 1.7 percent of the clients entering DSHS-funded treatment in 2009 had a primary problem with barbiturates, sedatives, or tranquilizers. Sixty-five percent of these clients were female; 65 percent were White; 21 percent were Hispanic; and 13 percent were Black. They were users of multiple drugs; only 27 percent reported no other problem substance, compared with 46 percent of users of all other drugs. Of the “downer” clients, 23 percent reported a secondary problem with marijuana, compared with 15 percent with alcohol, 15 percent with other opiate drugs, and 7 percent with powder cocaine.

Exhibit 22 shows the increases in deaths due to benzodiazepines from 55 in 1999, to 451 in 2007, to 302 in 2008. Alprazolam, clonazepam, and diazepam were among the 13 most commonly identified substances, according to the 2009 DPS laboratory report, although none of them represented more than 5 percent of all items examined in a year.

Alprazolam tablets sold for \$4–\$5 in San Antonio; \$10 in El Paso; \$2–\$4 in Tyler; \$2–\$3 in Houston; \$3–\$5 in Fort Worth; and \$5 in Dallas. Alprazolam use had increased in Houston; it was the most common pill mentioned in San Antonio, according to street outreach workers; and it is one of the three ingredients, along with hydrocodone and carisoprodol, that form the “Houston Cock-tail” or “Holy Trinity.”

## Club Drugs and Hallucinogens

Exhibit 23 shows the demographic characteristics of clients entering DSHS-funded treatment programs

statewide with a problem with a club drug. The row “Primary Drug=Club Drug” shows the percentage of clients citing a primary problem with the club drug shown at the top of the column. The rows under the heading “Other Primary Drug” show the percentage of clients who had a primary problem with another drug, such as marijuana, but who had a secondary or tertiary problem with one of the club drugs shown at the top of the table. Note that the treatment data include a broader category, “Hallucinogens,” which includes LSD (lysergic acid diethylamide), DMT (dimethyltryptamine), STP (phencyclidine and 2,5-Dimethoxy-4-methylamphetamine), mescaline, psilocybin, and peyote.

Among the clients shown in exhibit 23, the GHB clients were the most likely to be White; PCP (phencyclidine) clients were the most likely to be Black; Rohypnol® clients were the most likely to be Hispanic and to be the youngest; and ketamine clients were the oldest. Users of PCP were the most likely to have a primary problem with PCP (55 percent); users of Rohypnol®, ecstasy, and hallucinogens were more likely to have primary problems with marijuana. Users of GHB tended to have a primary problem with methamphetamine (56 percent), and ketamine users were the most likely to have a history of injecting drug use, followed by GHB and steroid users.

### ***BZP and TFMPP***

BZP (1-benzylpiperazine) has pharmacological effects that are qualitatively similar to those of amphetamine. It is a schedule I drug that is often taken in combination with TFMPP (1-(3-trifluoromethylphenyl)piperazine), a noncontrolled substance, in order to enhance its effects as a substitute for MDMA (3,4-methylenedioxymethamphetamine). It is generally taken orally, but it can be smoked or inhaled. Piperazines are a broad class of chemicals that include several stimulants (BZP, TFMPP, etc.), as well as antivertigo agents (cyclizine, meclizine) and others (sildenafil/Viagra®).

According to the DPS laboratory, there were 19 BZP exhibits and 2 TFMPP exhibits in 2007, compared with 312 BZP and 66 TFMPP exhibits in 2008, and 436 BZP and 87 TFMPP exhibits in 2009.

### ***DXM***

The most popular DXM (dextromethorphan) products are Robitussin-DM®, Tussin®, and Coricidin Cough and Cold (CCC) Tablets HBP®, which can be purchased over the counter and can produce hallucinogenic effects if taken in large quantities. Coricidin HBP® pills are known as “Triple C” or “Skittles.”

The 2008 Texas school survey reported that 3 percent of secondary students indicated they had ever used DXM, and 2 percent had used in the past year. The 2005 Texas college survey found that 5 percent had ever used DXM, and less than 1 percent had used it in the past month.

Poison control centers reported the number of abuse and misuse cases involving DXM rose from 99 in 1998 to 505 in 2009. The average age was 21. The numbers of cases involving abuse or misuse of Coricidin HBP® were as follows: 7 in 1998; 189 in 2005; 288 in 2006; 483 in 2007; 158 in 2008; and 126 in 2009. The average age in 2009 was 17, which shows that youth can easily access and misuse this substance.

There were 12 deaths in 2007 in which DXM was 1 of the substances mentioned on the death certificate.

DPS laboratories examined 2 substances in 1998 that were DXM, compared with 13 in 1999; 36 in 2000; 18 in 2001; 42 in 2002; 10 in 2003; 15 in 2004; 10 in 2005; 12 in 2006; 5 in 2007; 9 in 2008; and none in 2009. In Lubbock, street outreach workers reported some youths were taking 10–16 Triple C or CCC pills at a time to achieve hallucinogenic effects.

### ***Ecstasy or MDMA and MDA***

The 2008 Texas secondary school survey reported that lifetime ecstasy use dropped from a high of 9 percent in 2002 to 5 percent in 2008, while past-year use dropped from 3 to 2 percent during that time.

The YRBS reported that 9 percent of high school students had ever used ecstasy in 2009, compared with 10 percent in 2007 and 8 percent in 2005. The 2005 Texas college survey found that 9 percent of college students had ever used ecstasy,

and less than 1 percent had used in the past year. The 2004–2006 NSDUH survey reported 1.1 percent of Texans had used ecstasy in the past year.

The Texas Poison Center Network reported 23 calls involving misuse or abuse of ecstasy in 1998, compared with 46 in 1999; 119 in 2000; 155 in 2001; 172 in 2002; 284 in 2003; 302 in 2004; 343 in 2005; 292 in 2006; 232 in 2007; 293 in 2008; and 310 in 2009 (exhibit 24). In 2009, the average age was 20.

Exhibit 25 shows that ecstasy has spread outside the White rave scene and into the Hispanic and Black communities, as evidenced by the fact that only 36 percent of the clients in 2009 were White.

Ecstasy is often used in combination with other drugs, and the increase in use and abuse of the drug was demonstrated in the increases in the numbers of clients seeking treatment who reported a primary, secondary, or tertiary problem with ecstasy (exhibit 24). In 1998, there were 63 of these polydrug admissions, compared with 114 in 1999; 199 in 2000; 349 in 2001; 521 in 2002; 502 in 2003; 561 in 2004; 640 in 2005; 1,212 in 2006; 1,247 in 2007; 1,189 in 2008; and 1,350 in 2009.

The DPS laboratories identified MDMA in 5 exhibits in 1998; 107 exhibits in 1999; 387 in 2000; 817 in 2001; 63 in 2002; 490 in 2003; 737 in 2004; 821 in 2005; 1,173 in 2006; 1,134 in 2007; 1,011 in 2008; and 703 in 2009 (exhibit 24). MDA (3,4-methylenedioxyamphetamine) was identified in no exhibits in 1998; 31 in 1999; 27 in 2000; 60 in 2001; 106 in 2002; 94 in 2003; 67 in 2004; 85 in 2005; 80 in 2006; 43 in 2007; 63 in 2008; and 7 in 2009.

The Dallas DEA FD reported the primary source of ecstasy in the area was southern California, where Asian groups had obtained wholesale quantities from western Canada. The drug is typically imported by vehicles into the Dallas area in 100,000-tablet quantities. Wholesale distribution was dominated by Asians, while retail-level distribution was conducted mainly by younger White males. The mid-level distributors were reported to be quick to establish new sources, and the drug (or counterfeits) was expected to remain readily available. According to the Houston DEA FD, ecstasy

was readily available, with Vietnamese and Chinese operators controlling trafficking. The drug was imported from Canada, with smaller amounts coming in from Europe. The El Paso DEA FD reported an increase in rave parties where ecstasy was present, and due to the violence in Ciudad Juarez, young adults were staying in the United States to party rather than participate in the night-life across the border.

Single dosage units of ecstasy sold for \$20 in Houston; \$15 in El Paso; \$6 in McAllen; \$25 in Dallas; \$20–\$25 in San Antonio; and \$20–\$25 in Lubbock. A “boat” (1,000 pills) cost \$4,500 in Dallas. The Partnership/MetLife Foundation study in Houston reported use of ecstasy had increased from 10 percent in 2009 to 67 percent in 2010.

### *GHB, GBL, and 1,4-BD*

The 2005 Texas college survey reported that 2 percent of the students had ever used GHB, and none reported past-month use. The numbers of cases of misuse or abuse of GHB or its precursors reported to the Texas Poison Center Network were 110 in 1998; 150 in 1999; 120 in 2000; 119 in 2001; 100 in 2002; 66 in 2003; 84 in 2004; 62 in 2005; 43 in 2006; 56 in 2007; 49 in 2008; and 46 in 2009. The average age of the abusers in 2008 was 28.

Adults and adolescents with a primary, secondary, or tertiary problem with GHB, GBL (gamma butyrolactone), or 1,4-BD (1,4-butanediol) have been admitted to DSHS-funded treatment. In 1998, there were 2 such clients, compared with 17 in 1999; 12 in 2000; 19 in 2001; 33 in 2002; 31 in 2003; 45 in 2004; 48 in 2005; 111 in 2006; 103 in 2007; 113 in 2008; and 91 in 2009. In 2009, clients who used GHB tended to be older (average age 30) and were more likely to be White (87 percent) (exhibit 23). GHB users were more likely to have used the so-called “hard-core” drugs; 48 percent had a history of injection drug use, and 57 percent had a primary problem with amphetamines or methamphetamine. Because of the sleep-inducing properties of GHB, users will also use methamphetamine to stay awake while they are “high” on GHB, or they use GHB to “come down” from their use of methamphetamine. Others report methamphetamine dealers also sold

GHB and that they consistently use both substances in combination.

There were three deaths that involved GHB in 1999, compared with five in 2000; three in 2001; two in 2002; two in 2003; three in 2004; three in 2005; one in 2006; and two in 2007. There were 18 items identified by DPS laboratories as being GHB in 1998, compared with 112 in 1999; 45 in 2000; 34 in 2001; 110 in 2002; 150 in 2003; 99 in 2004; 92 in 2005; 89 in 2006; 56 in 2007; 57 in 2008; and 36 in 2009. There were no items identified as GBL in 1998, compared with four in 1999; seven in 2000; seven in 2001; nine in 2002; five in 2003; two in 2004; one in 2005; nine in 2006; none in 2007; three in 2008; and none in 2009. There were no items identified as 1,4-BD in 1988, compared with 4 in 1989; 4 in 2000; 19 in 2001; 5 in 2002; none in 2003, 2004, 2005, 2006, 2007, or 2008; and 1 in 2009. In San Antonio, a pint of GHB cost \$100 wholesale. In Dallas, it sold for \$20 per dosage unit and \$500–\$1,600 per gallon.

### *Ketamine*

The 2005 Texas college survey found that 2 percent of the students had ever used ketamine, and none reported past-month use. Eight cases of misuse or abuse of ketamine were reported to Texas Poison Control Centers in 1998, compared with 7 in 1999; 15 in 2000; 14 in 2001; 10 in 2002; 17 in 2003; 7 in 2004; 5 in 2005; 3 in 2006; 1 in 2007; 1 in 2008; and 1 in 2009.

In 2008, there were nine admissions to treatment with a primary, secondary, or tertiary problem with ketamine. The average age was 31; 67 percent were male; 56 percent had an injection drug use history; 67 percent were White; 11 percent were Hispanic; and none percent were Black (exhibit 23). None had a primary problem with ketamine, but 44 percent had a primary problem with heroin and 33 percent had a primary problem with methamphetamine and a secondary or tertiary problem with ketamine. There were two deaths in 1999 that involved use of ketamine, compared with none in 2000; one in 2001; one in 2002; none in 2003; two in 2004; one in 2005; none in 2006; and two in 2007.

In 1998, two substances were identified as ketamine by DPS laboratories. There were 26 items identified in 1999; 49 in 2000; 120 in 2001; 116 in 2002; 85 in 2003; 79 in 2004; 19 in 2005; 140 in 2006; 154 in 2007; 76 in 2008; and 56 in 2009. Ketamine cost \$2,200–\$2,500 per liter in Fort Worth and \$65 per vial in Tyler. A dose sold for \$20 per pill or gram in Tyler, \$20–\$40 in Lubbock, and \$15–\$20 in San Antonio (for 0.2 grams).

### *LSD and Other Hallucinogens*

The Texas secondary school survey showed that use of hallucinogens (defined as LSD, PCP, or mushrooms) continued to decrease. Lifetime use peaked at 7.4 percent in 1996 and dropped to 4.4 percent in 2008. Past-month use dropped from a peak of 2.5 percent in 1998 to 1.5 percent in 2008. The 2005 Texas college survey found that 10 percent of college students had ever used hallucinogens, and less than 1 percent had used in the past month. The 2002–2004 NSDUH reported past-year use by Texans age 12 and older at 0.3 percent.

The Texas Poison Center Network reported 82 mentions of abuse or misuse of LSD in 1998, compared with 113 in 1999; 97 in 2000; 70 in 2001; 129 in 2002; 20 in 2003; 22 in 2004; 38 in 2005; 33 in 2006; 31 in 2007; 17 in 2008; and 26 in 2009. There were also 98 cases of intentional misuse or abuse of hallucinogenic mushrooms reported in 1998, compared with 73 in 1999; 110 in 2000; 94 in 2001; 151 in 2002; 130 in 2003; 172 in 2004; 82 in 2005; 96 in 2006; 125 in 2007; 93 in 2008; and 96 in 2009. The average age in 2009 was 19 for the LSD cases and 21 for the mushroom cases.

The number of adults and youths with a primary, secondary, or tertiary problem with hallucinogens entering treatment has increased since 2005. There were 636 such admissions in 2000; 486 in 2001; 436 in 2002; 319 in 2003; 266 in 2004; 223 in 2005; 338 in 2006; 370 in 2007; 404 in 2008; and a decline to 322 in 2009. Of the hallucinogen admissions in 2009, the average age was 26; 72 percent were male; 50 percent were White; 24 percent were Hispanic; and 25 percent were Black. Seventy-six percent were referred from the



criminal justice or legal system, and 23 percent had an injection drug use history (exhibit 23).

Statewide, there were two deaths in 1999 and one in 2000 with a mention of LSD. No deaths with a mention of LSD have been reported since then. DPS laboratories identified 69 substances as LSD in 1998, compared with 406 in 1999; 234 in 2000; 122 in 2001; 11 in 2002; 10 in 2003; 25 in 2004; 14 in 2005; 1 in 2006; 29 in 2007; 19 in 2008; and 33 in 2009. A dosage unit of LSD sold for \$1–\$10 in Dallas, \$7 in Lubbock, and \$8–\$12 in San Antonio. Psilocybin mushrooms sold for \$10–\$14 per gram in Lubbock.

### *PCP*

The 2002–2004 NSDUH reported past-year use of PCP in Texas at 0.1 percent. The Texas Poison Center Network reported cases of “fry,” “amp,” “water,” “wet,” “wack,” PCP, or formaldehyde. Often, marijuana joints are dipped in formaldehyde that contains PCP, or PCP is sprinkled on the joint or cigarette. The number of poison cases involving PCP increased from 102 in 1998, to 290 in 2008, and to 125 in 2009 (exhibit 26).

Exhibit 26 shows the increases in the number of clients entering treatment with a primary problem with PCP. Of the clients in 2009, 86 percent were Black; 46 percent were male; and 66 percent were involved in the criminal justice system. While 58 percent reported a primary problem with PCP, another 20 percent reported a primary problem with marijuana, which demonstrates the link between these two drugs (exhibit 23).

There were eight death certificates in 2007 that mentioned PCP (exhibit 26). DPS laboratories identified 10 substances as PCP in 1998 and 195 in 2009 (exhibit 26).

According to the DEA, PCP cost \$5 per dipped cigarette and \$45–\$80 for 1 ounce retail. In San Antonio, a gallon cost \$700–\$1,200. PCP use was reported by street outreach workers to be increasing among youths and young adults age 16–30 and to remain a problem in Houston.

### *Flunitrazepam*

Flunitrazepam (Rohypnol®) is a benzodiazepine that was never approved for use in the United States. The drug is legal in Mexico, but since 1996, it has been illegal to bring it into the United States. Rohypnol® continued to be a problem along the Texas–Mexico border. The 2008 secondary school survey found that students from the border area were about three times more likely to report Rohypnol® use than those living elsewhere in the State (6 versus 2 percent lifetime, and 2 versus 1 percent current use). Use in both the border and nonborder areas has declined since its peak in 1998. Among Texas college students in 2005, 1 percent reported lifetime use of Rohypnol®, and none reported past-month use.

The number of confirmed exposures to Rohypnol® reported to the Texas Poison Control Centers peaked at 102 in 1998, before totaling 22 in 2005; 10 in 2006; 11 in 2007; 12 in 2008; and 23 in 2009. The average age in 2008 was 17; 61 percent were male; and 82 percent lived in counties on the border.

The number of youths and adults admitted into treatment with a primary, secondary, or tertiary problem with Rohypnol® has varied: 247 in 1998; 364 in 1999; 324 in 2000; 397 in 2001; 368 in 2002; 331 in 2003; 221 in 2004; 198 in 2005; 278 in 2006; 272 in 2007; 207 in 2008; and 287 in 2009. In 2009, clients abusing Rohypnol® were among the youngest of the club drug clients (age 18), and they were mostly Hispanic (97 percent), reflecting the availability and use of this drug along the border. Seventy-six percent were involved with the criminal justice or legal system. While 21 percent of these clients said that Rohypnol® was their primary problem drug, 48 percent reported a primary problem with marijuana, and 14 percent had a problem with heroin (exhibit 23).

DPS laboratory exhibits for flunitrazepam numbered 43 in 1988; 56 in 1999; 32 in 2000; 33 in 2001; 26 in 2002; 17 in 2003; 17 in 2004; 10 in 2005; 9 in 2006; 1 in 2007; none in 2008; and 3 in 2009. Rohypnol® sold for \$2–\$4 per pill in San Antonio in 2008.

## Other Abused Substances

### *Inhalants*

The 2008 elementary school survey found that 9 percent of students in grades 4–6 had ever used inhalants, and 7 percent had used in the school year. The 2008 secondary school survey found that 9 percent of students in grades 7–12 had ever used inhalants, and 3 percent had used in the past month. Inhalant use exhibits a peculiar age pattern not observed with any other substance. The prevalence of lifetime and past-month inhalant use was higher in the lower grades and lower in the upper grades. This decrease in inhalant use as students' age may be partially related to the fact that inhalant users drop out of school early and are not in school in later grades to respond to school-based surveys. In addition, the Texas school surveys have consistently found that eighth graders reported use of more different kinds of inhalants than any other grade, this may be a factor that exacerbates the damaging effects of inhalants and leads to dropping out.

The 2009 YRBS reported that 11.9 percent of Texas high school students had ever used inhalants, compared with 12.9 percent in 2007, 13.2 percent in 2005, and 13.9 percent in 2001. Respondents to the 2005 Texas college survey reported 4 percent lifetime and 0.3 percent past-month use of inhalants. The 2002–2004 NSDUH estimated that 0.7 percent of Texas age 12 and older had used inhalants in the past year.

Out of the 77 calls to the poison control centers in 2009 that involved human exposure to the inhalation of chemicals, there were 40 calls for exposure to automotive products, such as carburetor cleaner, transmission fluid, and gasoline; 96 calls for misuse of air fresheners or dusting sprays containing tetrafluoroethane or difluoroethane; 29 calls for abuse or misuse of spray paint or toluene; 7 calls for deodorant or body spray; and 20 calls involving gases such as butane, helium, nitrous oxide, or propane.

Inhalant abusers represented 0.1 percent of the admissions to treatment programs in 2009. The clients tended to be male (67 percent) and Hispanic (58 percent). The overrepresentation of Hispanics

is related to the fact that DSHS had developed and funded treatment programs targeted specifically to this group. The average age of the clients was 27. Fifty-five percent were involved with the criminal justice system; the average education was 10.1 years; 12 percent were homeless; and 22 percent had a history of injection drug use. Of the inhalant abusers, 37 percent reported no secondary drug problem; 26 percent had a second problem with marijuana; and 26 percent had a second problem with alcohol.

The HIV/AIDS outreach programs are reporting increased use of amyl and butyl nitrate in the gay community, and teenagers are using nitrous oxide (“Whippets”). Whippits are available at local smoke shops in valves (14 valves for \$24), and they are learning how to use them from YouTube videos.

### *Steroids*

The Texas school survey reported that 1.5 percent of all secondary students surveyed in 2008 had ever used steroids, and 0.5 percent had used steroids during the month before the survey. The 2009 YRBS found lifetime use among Texas high school students was 2.9 percent, with use being 3.5 percent among males and 2.3 percent among females. In 2007, overall use was 3.9 percent, with 4.8 percent among males and 3.0 percent among females. The 2005 Texas college survey found less than 1 percent had ever used steroids, and 0.1 percent had used in the past month.

There were 33 persons admitted to DSHS-funded treatment in 2009 with a primary, secondary, or tertiary problem with steroids. Seventy-three percent were male; 67 percent were White; 24 percent were Hispanic; and the average age was 34. Sixty-seven percent were involved with the criminal justice or legal system; 36 percent had a primary problem with steroids; and 24 percent had a primary problem with marijuana (exhibit 23).

The NFLIS data for Texas reported testosterone was the steroid most likely to be identified in forensic testing, although it only constituted 0.1 percent of all the items tested in 2009. The Dallas

DEA FD reported that Mexico was the source for anabolic steroids, and China was the source of HGH (human growth hormone).

### *Carisoprodol*

Poison control centers confirmed that exposure cases of intentional misuse or abuse of the muscle relaxant carisoprodol (Soma®) increased from 83 in 1998 to 428 in 2009; the average age of these cases was 34.

In 2007, carisoprodol was mentioned on 208 death certificates, up from 51 in 2003. Only four of the 2007 death certificates mentioned only carisoprodol; all of the others listed combinations of drugs. Hydrocodone and alprazolam were substances most often mentioned on the other carisoprodol death certificates. Of the 2007 deaths, 50 percent were male, and the average age was 39.

DPS laboratory exhibits of carisoprodol reported to NFLIS increased from 13 in 1998 to 90 in 1999; 153 in 2000; 202 in 2001; 232 in 2002; 277 in 2003; 253 in 2004; 336 in 2005; 558 in 2006; 700 in 2007; 471 in 2008; and 552 in 2009. According to the Dallas DEA FD, Soma® and Soma® with codeine sold for \$2–\$5 per tablet. Carisoprodol is one of the most popular drugs in the illicit drug market in the Dallas/Fort Worth area and is part of the combination with hydrocodone and alprazolam that is known as the “Houston Cocktail” or “Holy Trinity.”

## **DRUG ABUSE PATTERNS ON THE TEXAS–MEXICO BORDER**

The 2008 Texas Secondary School Survey reported that students living in counties along the Texas border were more likely to report lifetime use of tobacco (33 versus 31 percent nonborder), powder cocaine (10 versus 6 percent), crack cocaine (3 versus 2 percent), and Rohypnol® (6 versus 2 percent), while nonborder students were more likely to report use of marijuana (25 versus 22 percent border), alcohol (63 versus 61 percent), alprazolam (14 versus 8 percent), ecstasy (5 versus 4 percent), and methamphetamine (4 versus 3 percent). One percent of each group reported lifetime use of heroin.

When asked which substances were very easy to obtain, border students reported Rohypnol® (12 versus 6 percent), powder cocaine (16 versus 11 percent), and crack cocaine (11 versus 8 percent), while nonborder students reported tobacco (40 versus 32 percent), alcohol (47 versus 39 percent), and marijuana (26 versus 23 percent).

Different patterns were also seen in border and nonborder admissions to DSHS-funded treatment in 2009. Border clients were more likely to report problems with alcohol (39 versus 28 percent nonborder), powder cocaine (17 versus 7 percent), and marijuana (26 versus 23 percent). Nonborder clients were more likely to report problems with heroin (13 versus 10 percent), other opiates (7 versus 1 percent nonborder), methamphetamine (8 versus 0.4 percent), and crack cocaine (11 versus 4 percent). In addition to differences in primary problem, nonborder clients were less likely to be first admissions (47 versus 63 percent), less likely to be male (61 versus 82 percent), more likely to be homeless (11 percent 6 percent), and more likely to have a history of injection drug use (27 versus 15 percent). The nonborder clients reported more days of problems on the Addiction Severity Index in the month prior to admission than did border admissions.

Over time, the drug use problems have changed on the border and in the nonborder areas. Exhibit 27 shows the increase in use of marijuana, the decrease in heroin, and the low levels of use of crack cocaine and methamphetamine on the border. In comparison, in the nonborder areas, the use of crack cocaine has decreased, while the use of marijuana has increased. Use of methamphetamine peaked in 2005 (exhibit 28).

The drug problem also differed in cities along the border. The primary problems at treatment admission in El Paso in 2009 were alcohol (42 percent), marijuana (19 percent), powder cocaine (16 percent), and heroin (12 percent). In Laredo, 24 percent of the admissions were for heroin, 23 percent were for marijuana, 22 percent were for powder cocaine, and 16 percent were for alcohol. In McAllen, 41 percent were for alcohol, 38 percent were for marijuana, and 13 percent were for powder cocaine.

These variations were due both to historical funding decisions (the largest methadone program in El Paso is not State-funded and does not report treatment data and there is an adolescent residential program in Laredo) and to trafficking patterns. The DPS laboratory in El Paso in 2009 reported 57 percent of the items examined were marijuana; 20 percent were cocaine; and 0.8 percent were heroin. In Laredo, 53 percent of the items examined were marijuana; 25 percent were cocaine; 5 percent were heroin; and 5 percent were carisoprodol. In McAllen, 49 percent of the items examined were cocaine, and 10 percent were marijuana.

While poverty, unemployment, lack of social services and drug treatment programs to meet the increasing demand, drug trafficking, and cartels and gangs are not new to the border, street outreach workers have reported increasing fear, trauma, and mental health issues related to loss of partners and parents. There is less ability to coordinate services across the border, while at the same time there is an increasing need for greater collaboration. There were growing concerns by workers about their personal safety in providing substance abuse services in communities that are experiencing increases in violence and crimes related to drugs. The workers also reported increasing numbers of youth involved in drug trafficking and fewer options for these youth. Choosing whether or not to become involved in drugs and gangs seemed less like a choice and more like a decision based on threats and fear. There was also concern that people in need of substance abuse and mental health services were becoming more “closeted” and afraid to ask for help due to repercussions related to the safety of their families and/or immigration issues.

## **INFECTIOUS DISEASES RELATED TO DRUG ABUSE**

DSHS estimates that 1.8 percent of Texans are infected with hepatitis C (HCV). The number of acute HCV cases fluctuated from 241 in 2000; to 496 in 2001; to 284 in 2002; to 54 in 2003; to 56 in 2004; to 102 in 2005; to 57 in 2006; to 71 in 2007; to 59 in 2008; and to 36 cases reported as of May 2010.

The case rate for syphilis increased from 3.5 per 100,000 population in 1997 to 6.6 in 2009; the highest case rates were for African-American males (45.5) and African-American females (24.5). The case rate for chlamydia increased from 260.7 per 100,000 population in 1997 to 417.0 in 2009; the highest rates were for African-American females (1,574.9). The case rate for gonorrhea decreased from 136.9 per 100,000 population in 1997 to 115.7 in 2009; the highest rates were for African-American females (531.7) and African-American males (510.5). Exhibit 29 shows the case rates by age group. Notice that the case rates for all three diseases are higher for female teenagers, and it is not until females are 45 and older that the female case rates for all three diseases drop below that of males.

With the recent problems in the economy, HIV/AIDS outreach workers have reported increases in the numbers of people engaging in sex work to support themselves and their families or to obtain drugs, which is resulting in increases in STDs. In addition, outreach workers were reporting increasing numbers of cases of syphilis and untreated HCV and HIV cases, as well as the use of Viagra in Austin by men who are in their twenties and thirties and who have sex with other men. In Houston, illegal homeless immigrants were turning to prostitution because they do not have legal documentation to work.

## **HIV/AIDS Cases**

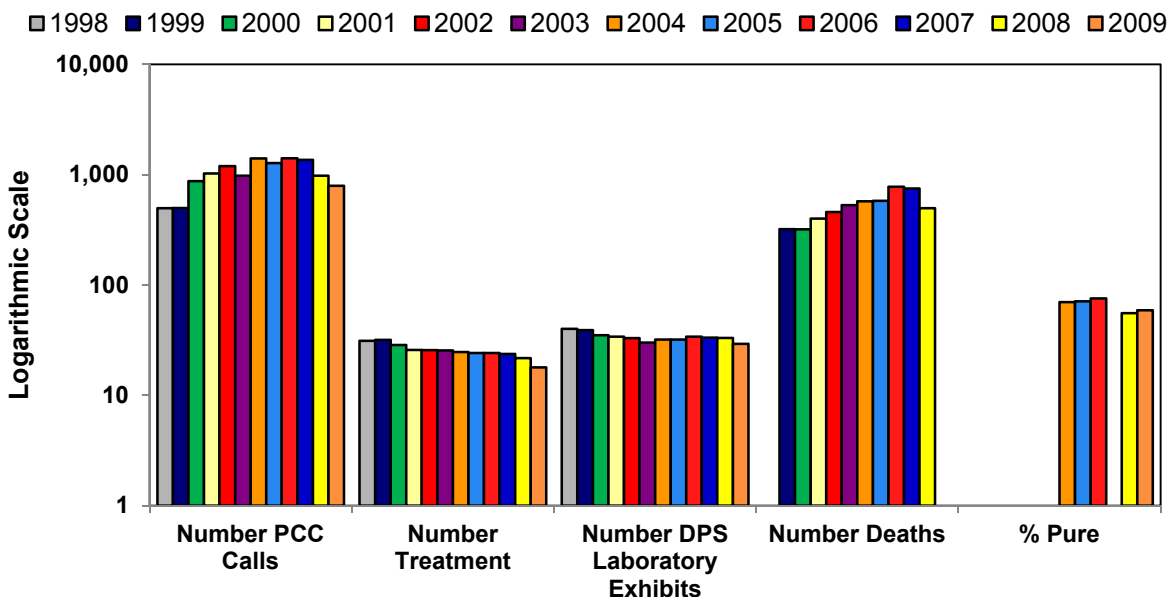
The proportion of HIV cases among men having sex with men (MSM) increased from 46 percent in 1999 to 65 percent in 2008 (exhibit 30), and the proportion of AIDS cases among MSM decreased from 81 percent in 1987 to 59 percent in 2008 (exhibit 31). Of the HIV cases in 2008, 23 percent were heterosexual mode of exposure, and 10 percent involved injection drug use. Of the 2008 AIDS cases, 25 percent were heterosexual and 12 percent were injection drug users (IDUs). HIV cases that later seroconverted to AIDS are excluded from the HIV exhibits. The proportions of cases involving IDUs or IDU/MSMs have decreased over time.

Persons infected with HIV or AIDS were increasingly more likely to be people of color. Among HIV cases in 2008, 45 percent were Black; 27 percent were White; and 26 percent were Hispanic (exhibit 32). Among AIDS cases in 2008, 42 percent were Black; 28 percent were White; and 28 percent were Hispanic (exhibit 33).

The proportion of IDUs entering DSHS-funded treatment programs decreased from 32 percent in 1988 to 17 percent in 2009. In 2009, 60 percent of heroin injectors were people of color (exhibit 9), while injectors of cocaine (exhibit 3) and of stimulants (exhibit 20) were far more likely to be White.

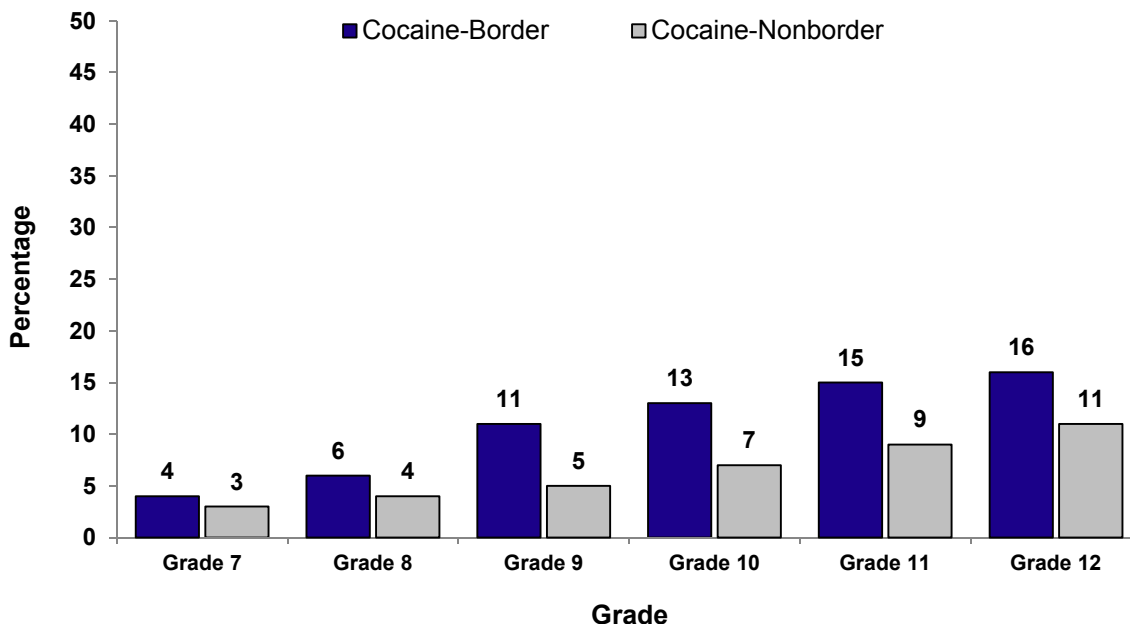
*For inquiries regarding this report, contact Jane C. Maxwell, Ph.D., Senior Research Scientist, Addiction Research Institute, Center for Social and Behavioral Research, University of Texas at Austin, 1717 West 6th Street, Suite 335, Austin, TX 78703, Phone: 512-232-0610, Fax: 512-232-0617, E-mail: [jcmaxwell@sbcglobal.net](mailto:jcmaxwell@sbcglobal.net).*

**Exhibit 1: Number of Poison Control, Treatment Admissions, Laboratory Exhibits, Deaths, and Percent Purity for Cocaine, Texas: 1998–2009**



SOURCES: Texas Poison Control Network; Texas Department of State Health Services (DSHS); Texas Department of Public Safety (DPS); Texas Bureau of Vital Statistics; and DMP, DEA

**Exhibit 2: Percentage of Border and Nonborder Secondary Students Who Had Ever Used Power or Crack Cocaine, by Grade, in Texas: 2008**



SOURCE: Texas Department of State Health Services

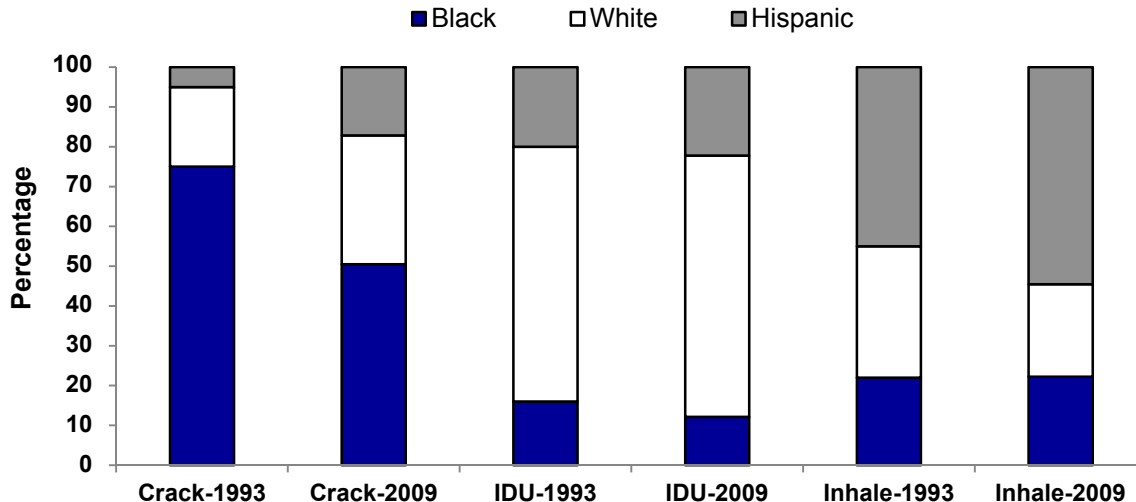
**Exhibit 3. Characteristics of Clients Admitted to Texas DSHS-Funded Treatment With a Primary Problem With Cocaine, by Route of Administration: 2009**

	Crack Cocaine Smoke	Powder Cocaine Inject	Powder Cocaine Inhale	Cocaine All <sup>†</sup>
# Admissions	9,785	627	5,127	16,234
% of Cocaine Admits	60	4	32	100
Lag-1st Use to Treatment-Yrs.	15	17	11	14
Average Age	40	38	32	37
% Male	49	65	52	51
% Black	50	12	11	39
% White	32	65	23	30
% Hispanic	17	22	54	30
% Criminal Justice Involved	55	58	67	55
% Employed	6	9	16	10
% Homeless	20	15	5	14

<sup>†</sup>Total includes clients with "other" routes of administration.

SOURCE: Texas Department of State Health Services; analysis by J.C. Maxwell

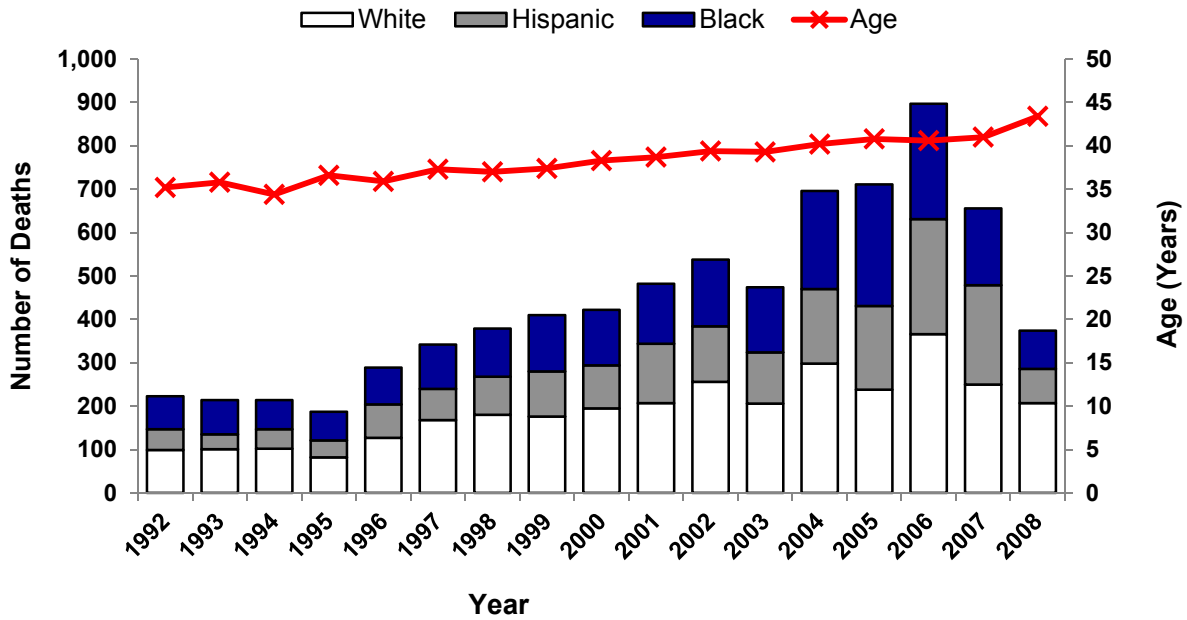
**Exhibit 4. Route of Administration of Cocaine by Race/Ethnicity, From DSHS Treatment Admissions, Texas: 1993 and 2009**



Note: IDU=injection drug user.

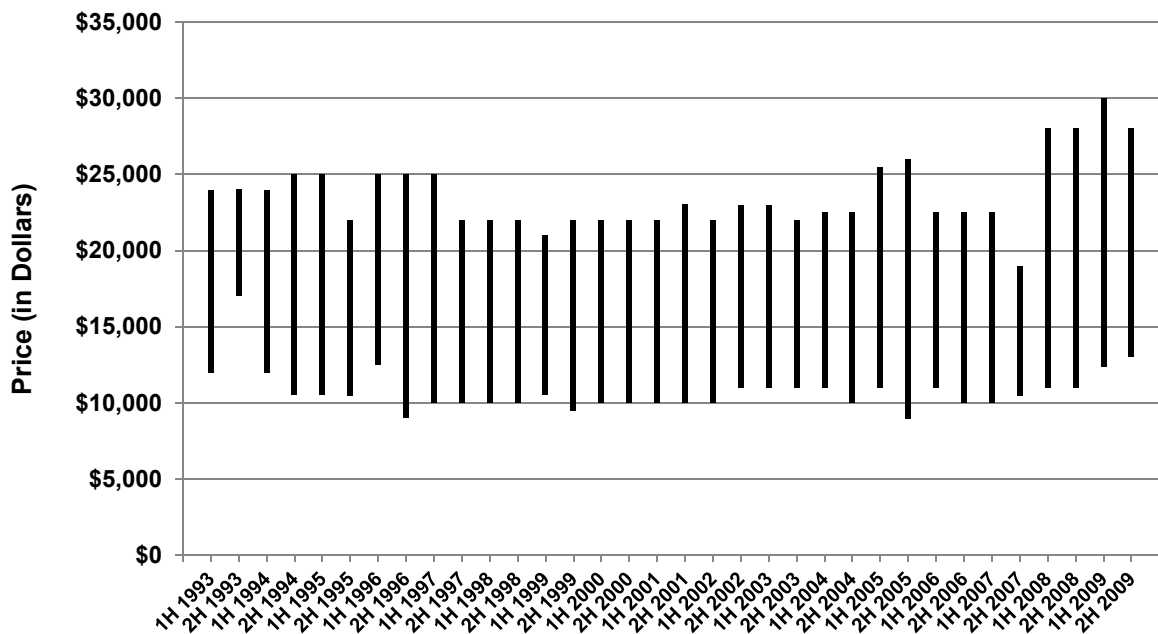
SOURCE: Texas Department of State Health Services; analysis by J. C. Maxwell

**Exhibit 5. Number of Deaths With a Mention of Cocaine, by Age and Ethnicity, in Texas: 1992–2008**



SOURCE: Texas Department of State Health Services

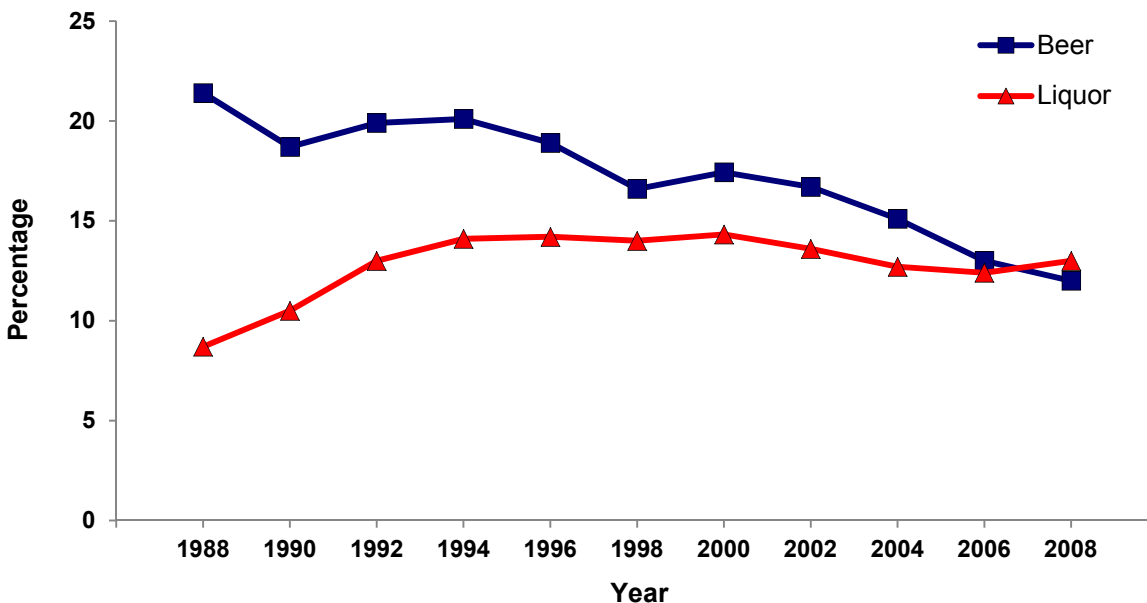
**Exhibit 6. Price of a Kilogram of Cocaine as Reported by the DEA, in Texas: 1993–2009, in Half-Yearly Intervals**



SOURCE: DEA

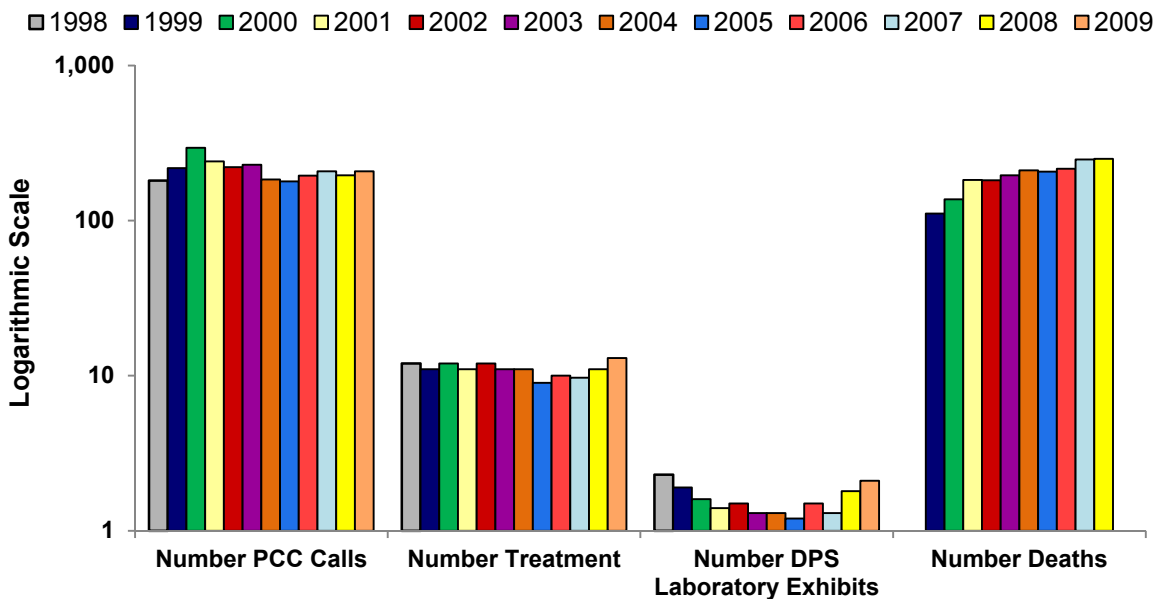


**Exhibit 7. Percentage of Texas Secondary Students Who Reported They Normally Consumed Five or More Drinks at One Time, by Specific Alcoholic Beverage: 1988–2008**



SOURCES: Texas Department of Health Services; YRBSS

**Exhibit 8. Number of Texas Poison Control Calls, Treatment Admissions, DPS Laboratory Exhibits, and Deaths for Heroin: 1998–2009**



SOURCES: Texas Poison Control Network; Texas Department of State Health Services (DSHS); Texas Department of Public Safety (DPS); Texas Bureau of Vital Statistics

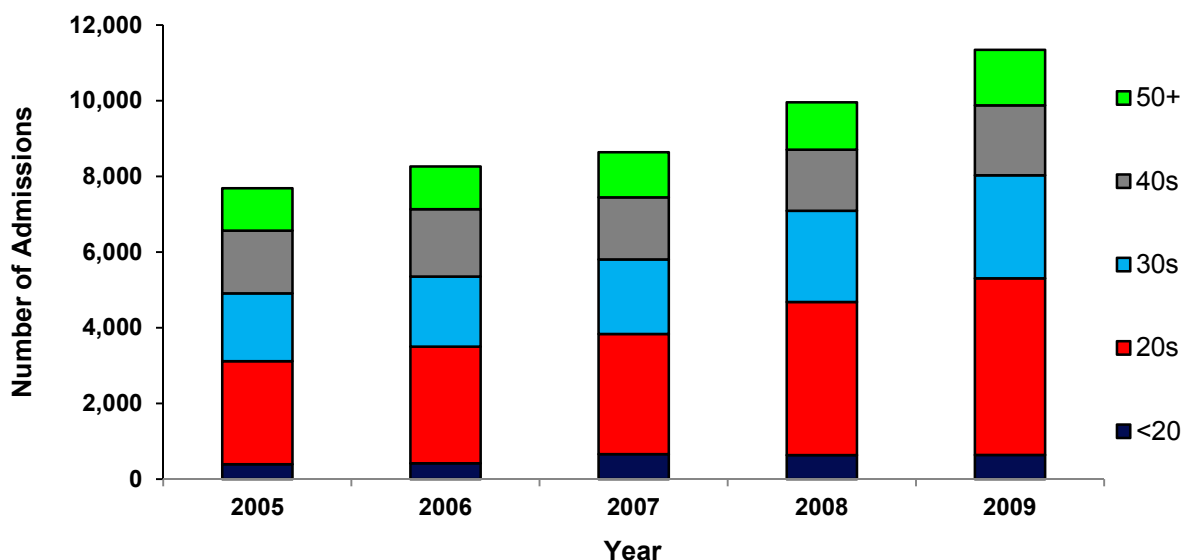
**Exhibit 9. Characteristics of Clients Admitted to DSHS-Funded Treatment With a Primary Problem With Heroin, by Route of Administration: 2009**

	Inject	Inhale	Smoke	All <sup>1</sup>
# Admissions	8,736	2,216	108	11,368
% of Heroin Admits	77	19	1	100
Lag-1st Use to Treatment-Yrs.	14	7	9	13
Average Age	35	28	30	34
% Male	64	57	56	62
% Black	6	15	7	8
% White	40	12	39	37
% Hispanic	53	61	49	54
% Criminal Justice Involved	29	37	33	31
% Employed	5	5	8	5
% Homeless	16	8	8	14

<sup>1</sup>Total includes clients with other routes of administration.

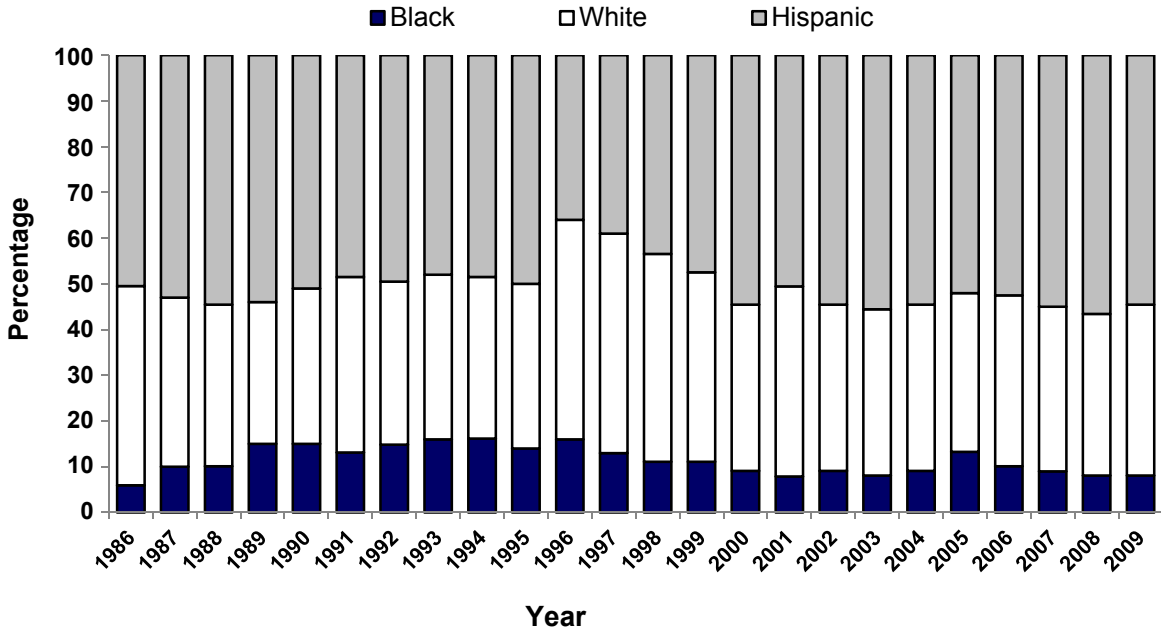
SOURCE: Texas Department of State Health Services; analysis by J. C. Maxwell

**Exhibit 10. Number of Heroin Admissions to Treatment, by Age Groups, Texas: 2005–2009**



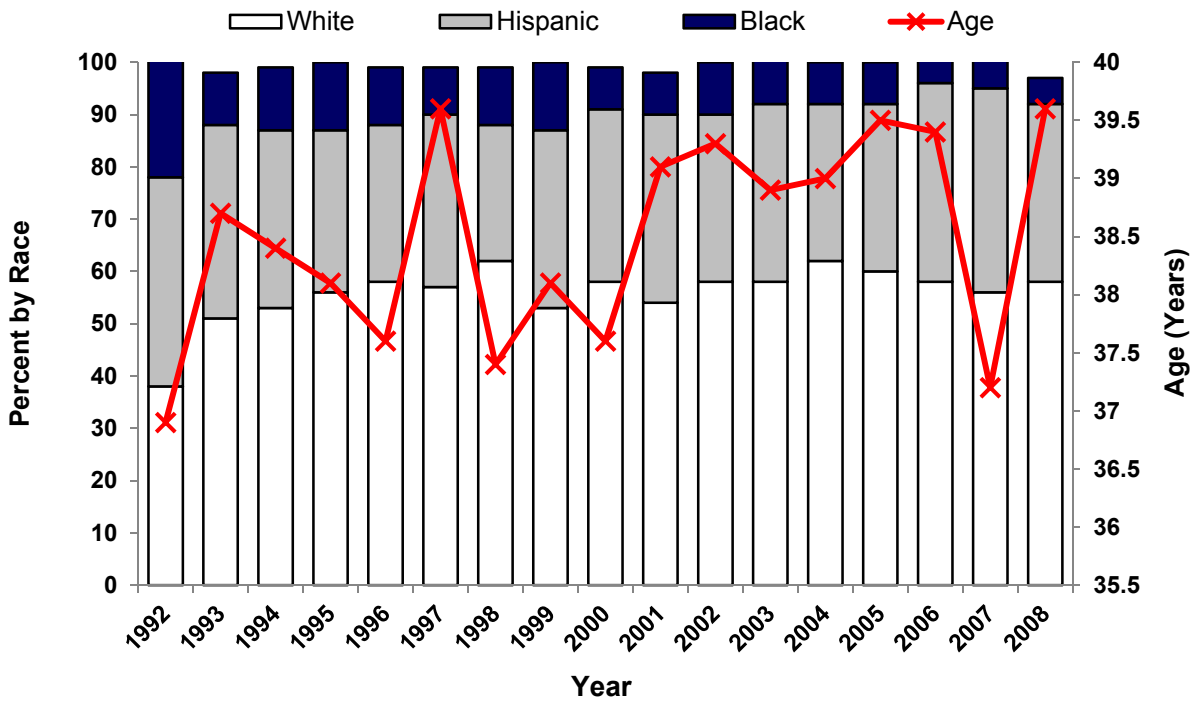
SOURCE: Texas Department of State Health Services; analysis by J. C. Maxwell

**Exhibit 11. Percentage of Heroin Admissions to DSHS-Funded Treatment by Race/Ethnicity: 1986–2009**



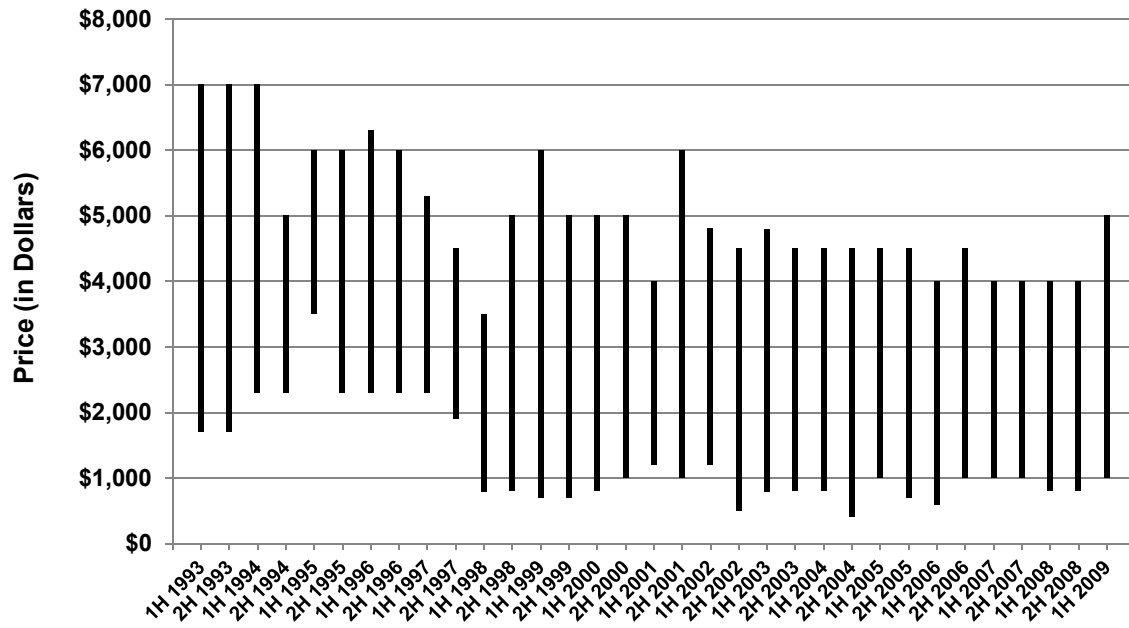
SOURCE: Texas Department of State Health Services

**Exhibit 12. Age and Race/Ethnicity of Persons Dying With a Mention of Heroin, by Percent, in Texas: 1992–2008**



SOURCE: Texas Department of State Health Services

**Exhibit 13. Price of an Ounce of Mexican Black Tar Heroin, as Reported by the DEA, in Texas:  
1H 1993–1H 2009, in Half-Yearly Intervals**



SOURCE: DEA

**Exhibit 14: Price and Purity of Heroin Purchased in Dallas, El Paso, Houston, and San Antonio by the DEA: 1995–2008**

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Dallas Purity (%)	6.8	3.5	7.0	11.8	14.0	16.0	13.4	17.2	13.3	16.3	11.6	17.7	20.6	13.5
Price/Milligram Pure	\$2.34	\$6.66	\$4.16	\$1.06	\$1.01	\$0.69	\$1.36	\$0.75	\$0.98	\$0.90	\$1.11	\$1.10	\$1.09	\$0.93
El Paso Purity (%)					56.7	50.8	41.8	40.3	44.7	50.5	44.7	44.8	39.8	41.1
Price/Milligram Pure					\$0.49	\$0.34	\$0.44	\$0.27	\$0.40	\$0.27	\$0.40	\$0.33	\$0.49	\$0.61
Houston Purity (%)	16.0	26.1	16.3	34.8	17.4	18.2	11.3	28.2	27.4	24.8	24.4	18.1	7.0	6.2
Price/Milligram Pure	\$1.36	\$2.15	\$2.20	\$2.43	\$1.24	\$1.14	\$1.51	\$0.64	\$0.45	\$0.44	\$1.11	\$1.90	\$1.66	\$3.05
San Antonio Purity (%)									8.2	6.4	11.2	17.4	7.1	7.6
Price/Milligram Pure									\$1.97	\$2.24	\$0.56	\$0.79	\$1.88	\$1.42

SOURCE: DEA

**Exhibit 15. Hydrocodone, Oxycodone, Methadone, and Fentanyl Indicators in Texas: 1998–2009**

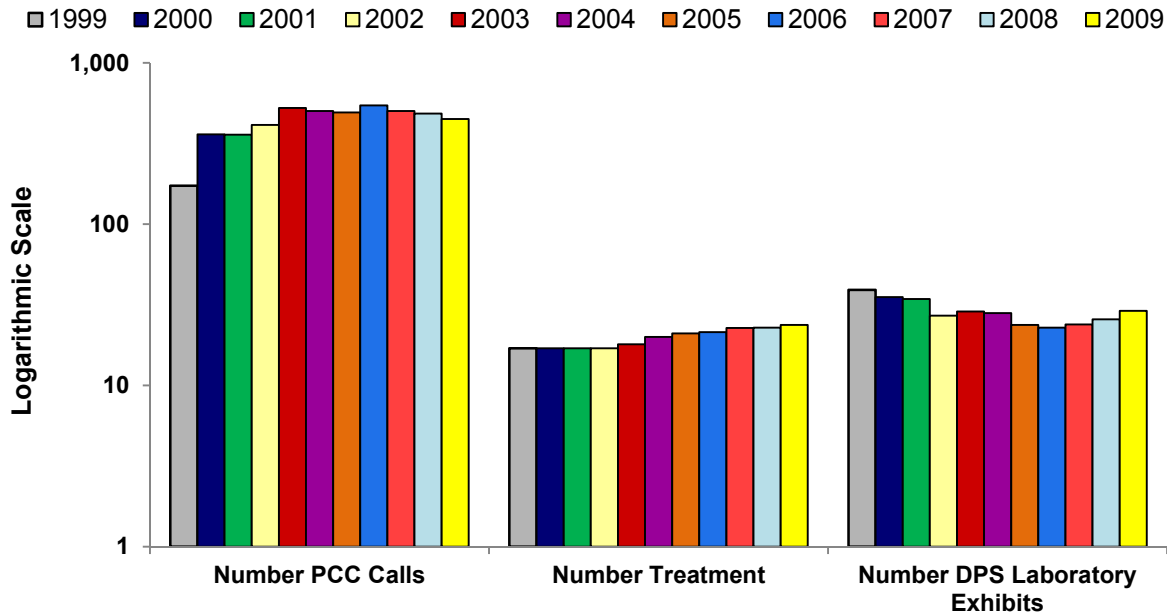
	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
<b>Poison Control Center Cases of Abuse and Misuse</b>												
Fentanyl			9	2	3	11	17	10	36	28	31	143
Hydrocodone	192	264	286	339	429	414	516	505	657	703	723	748
Methadone	17	15	30	27	50	41	69	69	73	91	217	223
Oxycodone	12	26	22	34	68	64	77	50	68	67	81	74
<b>DSHS Treatment Admissions</b>												
Methadone	55	69	44	52	75	86	63	91	101	113	160	145
“Other Opiates” <sup>1</sup>	553	815	890	1,386	2,084	2,794	3,433	3,482	3,903	4,529	5,221	5844
<b>Deaths with Mention of Substance (DSHS)</b>												
Other Opioids		122	168	224	313	370	369	402	577	572	429	
Synthetic Narcotics		52	52	80	120	80	94	93	113	142	61	
Methadone		27	62	89	141	161	164	205	222	224	174	
Fentanyl <sup>2</sup>	8	5	4	7	22	10	32	30	43	49		
Hydrocodone <sup>2</sup>	5	25	52	107	168	140	201	269	400	360		
Oxycodone <sup>2</sup>	1	8	20	40	56	60	66	62	81	65		
<b>Drug Exhibits Identified by DPS Laboratories (NFLIS)</b>												
Fentanyl	0	3	1	7	4	2	14	7	14	10	10	12
Hydrocodone	52	479	629	771	747	1,212	1,598	1,789	2,324	2,812	2,177	2,346
Methadone	1	19	22	42	58	70	130	133	169	209	181	193
Oxycodone	10	36	72	115	106	174	270	237	264	244	258	278

<sup>1</sup>“Other Opiates” refers to those other than heroin.

<sup>2</sup>2007 cases were incomplete and numbers for these drugs in 2008 are not available.

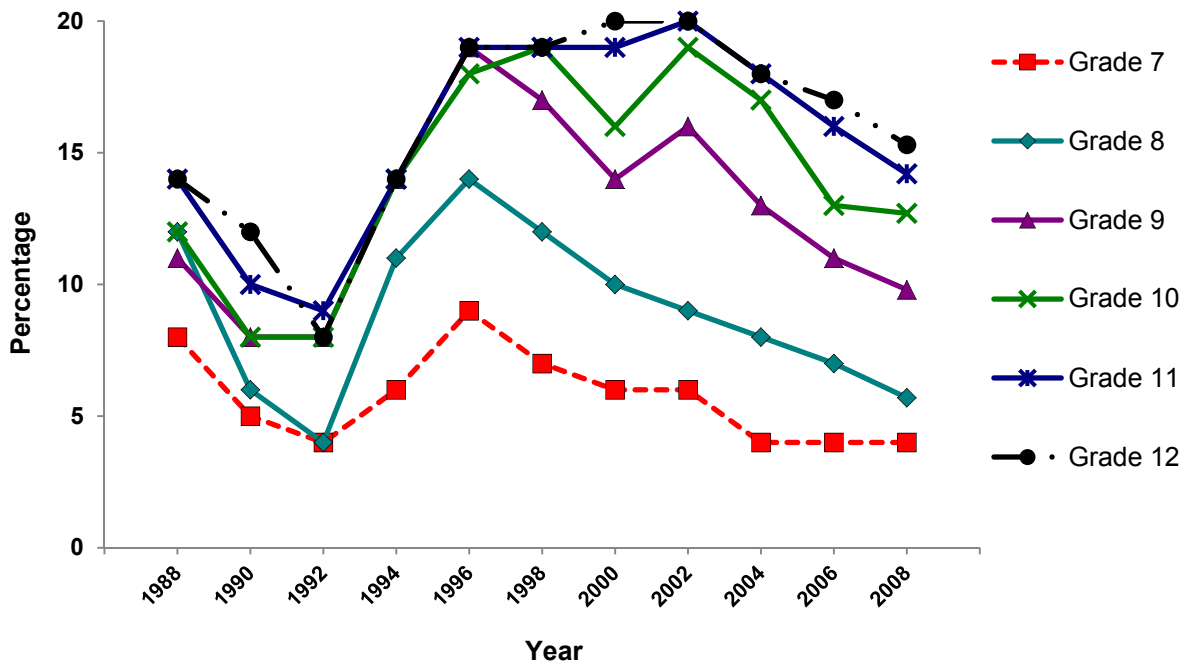
SOURCES: Texas Poison Control Network; Texas Department of State Health Services (DSHS); Texas Department of Public Safety (DPS); Texas Bureau of Vital Statistics; and DMP, DEA

**Exhibit 16. Number of Poison Control Calls, Treatment Admissions, and DPS Laboratory Exhibits for Marijuana/Cannabis, Texas: 1999–2009**



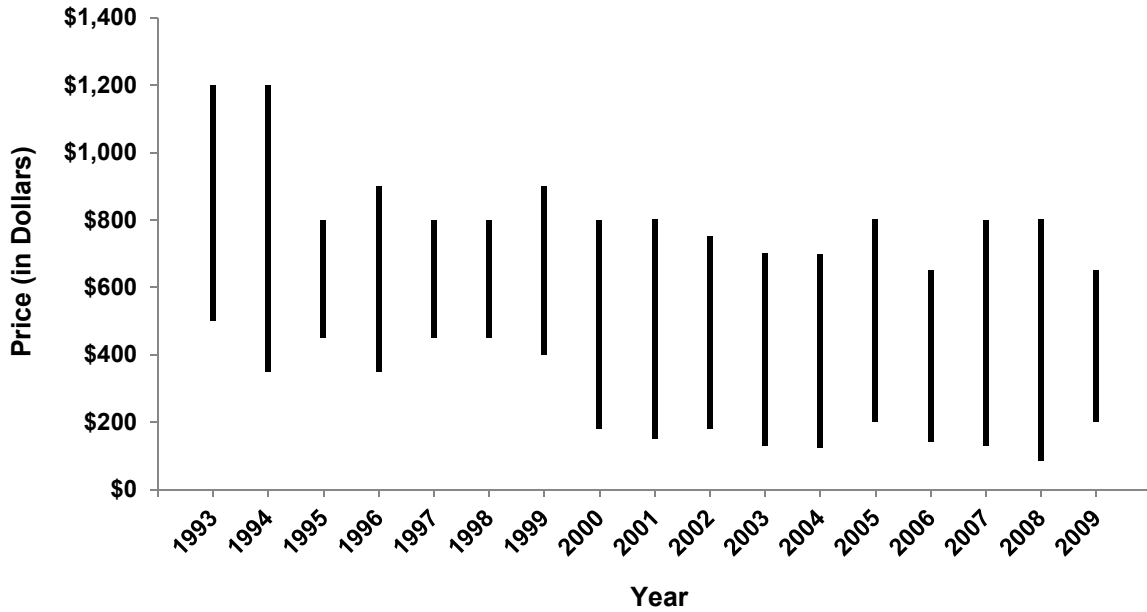
SOURCES: Texas Poison Control Network; Texas Department of State Health Services (DSHS); Texas Department of Public Safety (DPS)

**Exhibit 17. Percentage of Secondary Students Who Had Used Marijuana in the Past Month, by Grade, in Texas: 1988–2008**



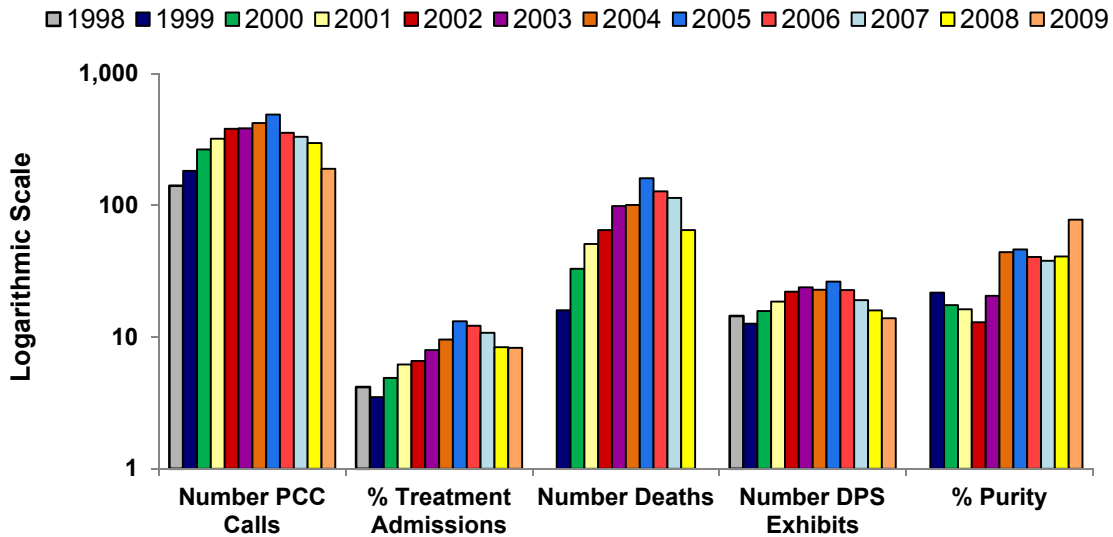
SOURCE: Texas Department of State Health Services

**Exhibit 18. Price of a Pound of Commercial Grade Marijuana, as Reported by the DEA, in Texas: 1993–2009**



SOURCE: DEA

**Exhibit 19. Number of Texas Poison Control Calls, Percentage Treatment Admissions, Number of Deaths, Percentage Laboratory Exhibits, and Percentage Purity of Methamphetamine: 1998–2009**



SOURCES: Texas Poison Control Network; Texas Department of State Health Services (DSHS); Texas Department of Public Safety (DPS); Texas Bureau of Vital Statistics; and DMP, DEA



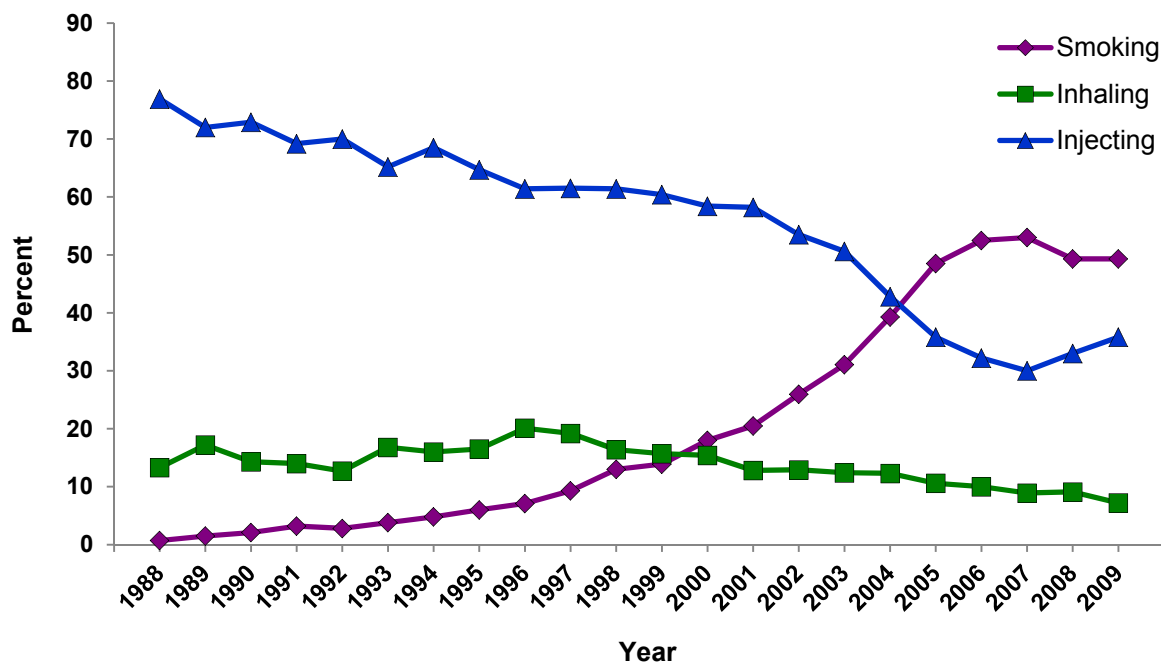
**Exhibit 20. Client Characteristics of Amphetamine and Methamphetamine Primary Admissions, by Route of Administration, Texas: 2009**

	Smoke	Inject	Inhale	Oral	All <sup>1</sup>
# Admissions	3,713	2,700	544	342	7,535
% of Stimulant Admits	49	36	82	45	100
Lag-1st Use to Treatment-Yrs.	11	15	13	12	12
Average Age-Yrs.	32	34	36	34	33
% Male	47	48	50	47	44
% Black	2	1	2	3	2
% White	84	92	84	76	85
% Hispanic	15	6	11	18	11
% Criminal Justice Involved	65	62	68	57	64
% Employed	12	9	12	16	11
% Homeless	8	12	5	6	9

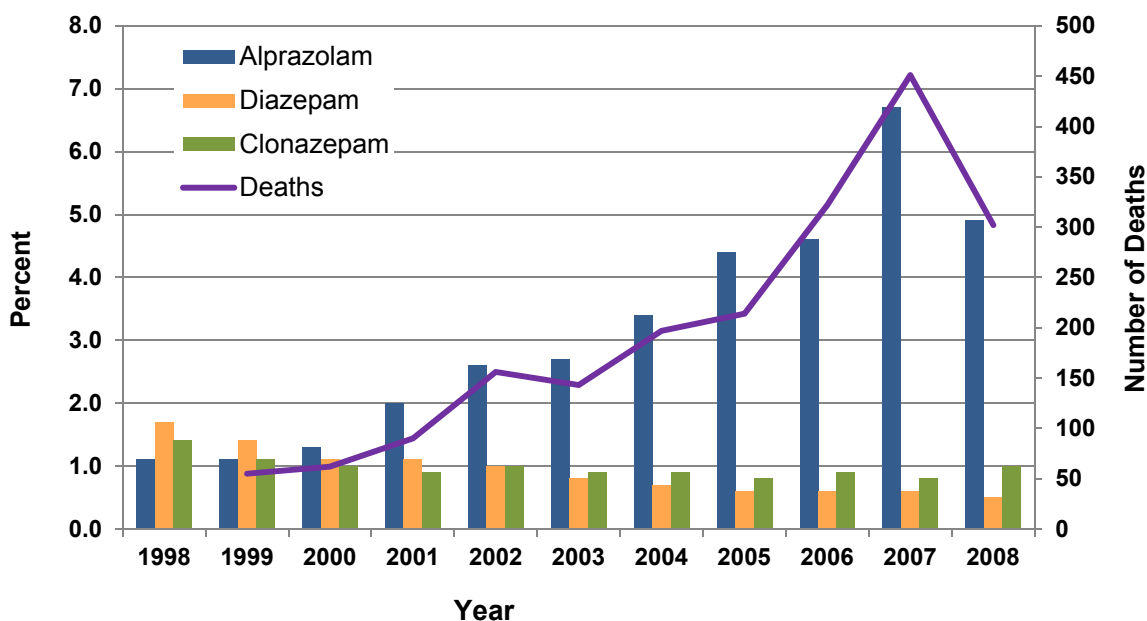
<sup>1</sup>Total includes clients with "other" routes of administration.

SOURCE: Texas Department of State Health Services; analysis by J. C. Maxwell

**Exhibit 21. Route of Administration of Methamphetamine, by Clients Admitted to DSHS-Funded Programs, by Percent, Texas: 1998–2009**



SOURCE: Texas Department of State Health Services

**Exhibit 22. Benzodiazepines as Percent of All Items Identified by DPS Laboratories and Number of Deaths, in Texas: 1998–2008**

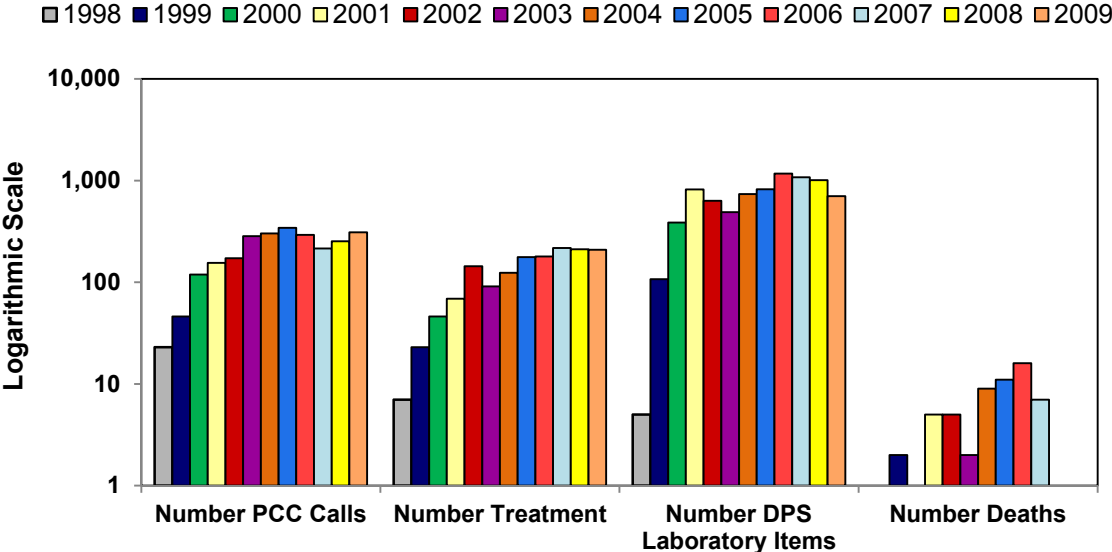
SOURCES: NFLIS; Texas Department of Public Safety

**Exhibit 23. Characteristics of Clients Admitted to DSHS-Funded Treatment With a Primary, Secondary, or Tertiary Problem With Club Drugs, Texas: 2009**

Club Drug	GHB	Hallucinogens	Ecstasy	PCP	Rohypnol®	Ketamine	Steroids
# Admissions	91	322	1350	1072	287	9	33
Average Age (Years)	30	26	24	29	18	31	34
% Male	47	72	58	46	71	67	73
% Black	4	25	36	86	0	0	6
% White	87	50	36	8	3	67	67
% Hispanic	6	24	36	6	97	11	24
% History Needle Use	48	23	12	5	12	56	39
% Criminal Justice Involved	68	76	76	66	76	78	67
% Primary Drug=Club Drug	20	28	16	58	21	0	36
<b>Other Primary Drug</b>							
% Marijuana	6	31	48	20	48	11	24
% Alcohol	9	12	9	6	2	11	9
% Methamphetamines/ Amphetamines	57	10	8	1	1	33	0
% Powder Cocaine	0	5	8	5	9	0	9
% Crack Cocaine	0	5	5	6	1	0	3
% Heroin	3	3	1	1	14	44	3
% Other Opiates	2	2	2	1	1	0	3

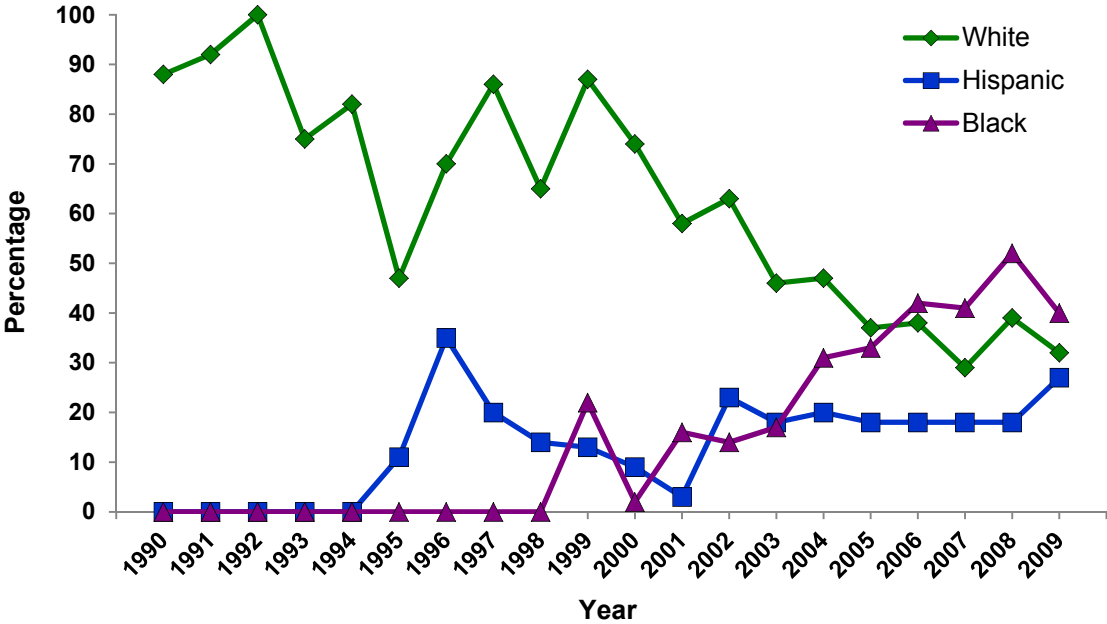
SOURCE: Texas Department of State Health Services

**Exhibit 24. Number of Poison Control Calls, Treatment Admissions, Laboratory Exhibits, and Ecstasy Deaths, Texas: 1998–2009**



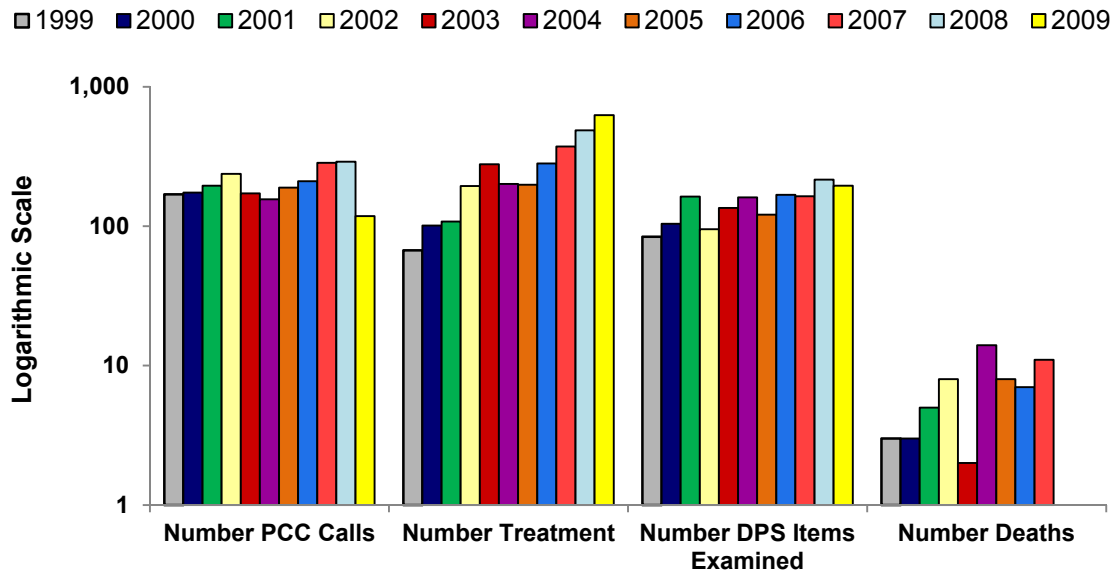
SOURCES: Texas Poison Control Network; Texas Department of State Health Services (DSHS); Texas Department of Public Safety (DPS); Texas Bureau of Vital Statistics

**Exhibit 25. Percentage by Ethnicity of Clients Admitted to DSHS-Funded Treatment With a Primary Problem With Ecstasy, Texas: 1990–2009**



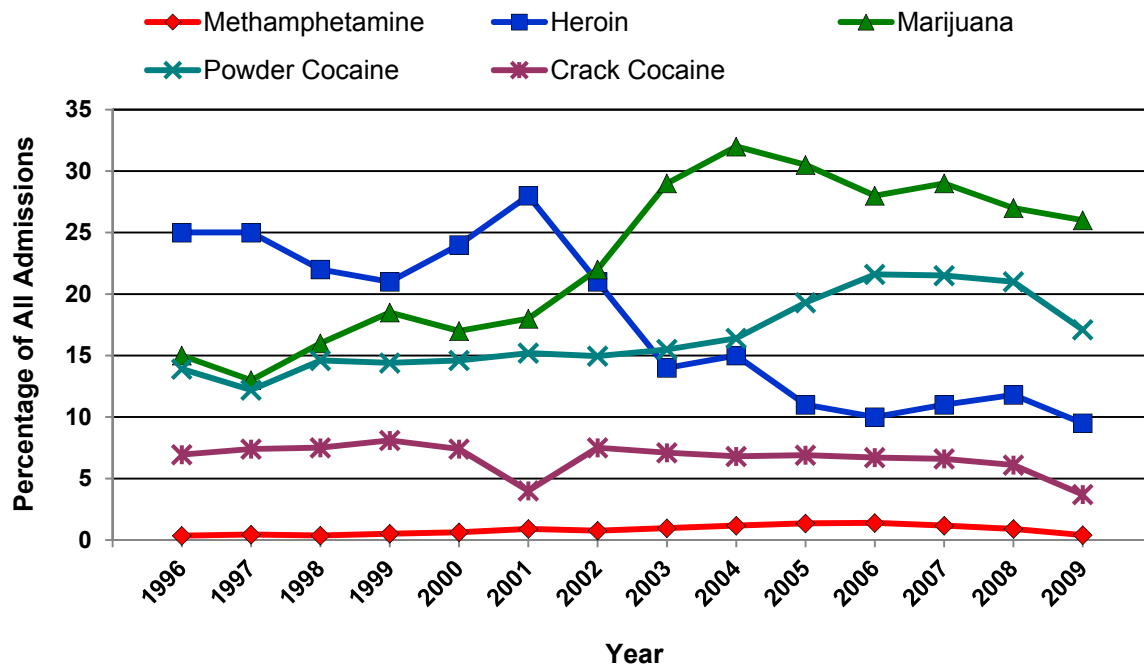
SOURCE: Texas Department of State Health Services

**Exhibit 26. Number of Poison Control Calls, Treatment Admissions, Laboratory Exhibits, and Deaths, for PCP, Texas: 1999–2009**



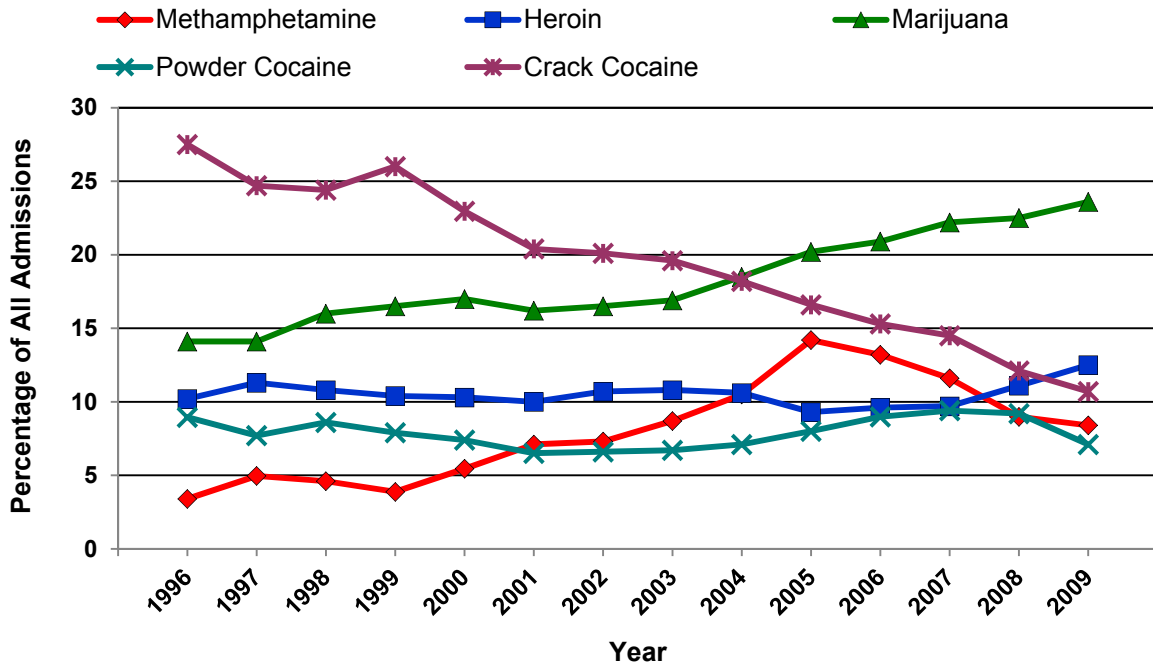
SOURCES: Texas Poison Control Network; Texas Department of State Health Services (DSHS); Texas Department of Public Safety (DPS); Texas Bureau of Vital Statistics

**Exhibit 27. Percentage by Ethnicity of Clients Admitted to DSHS-Funded Treatment, Select Drugs, Border: 1996–2009**



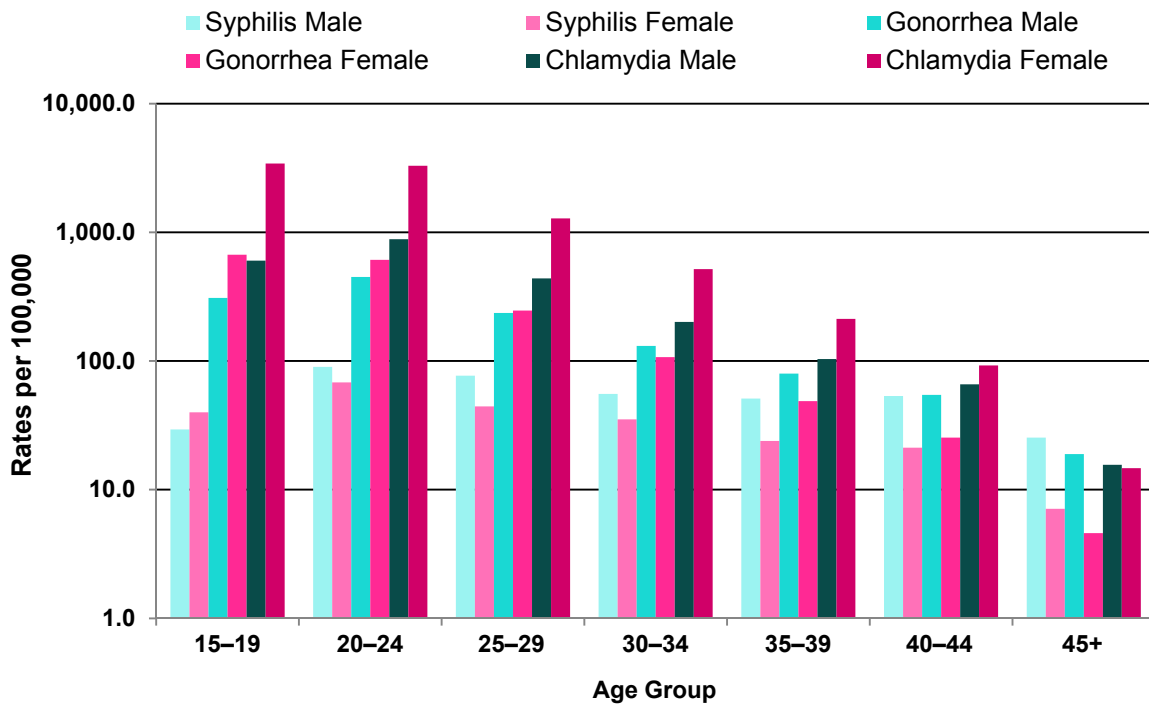
SOURCE: Texas Department of State Health Services

**Exhibit 28. Percentage of Admissions to Texas DSHS-Funded Treatment, Select Drugs, Nonborder: 1996–2009**



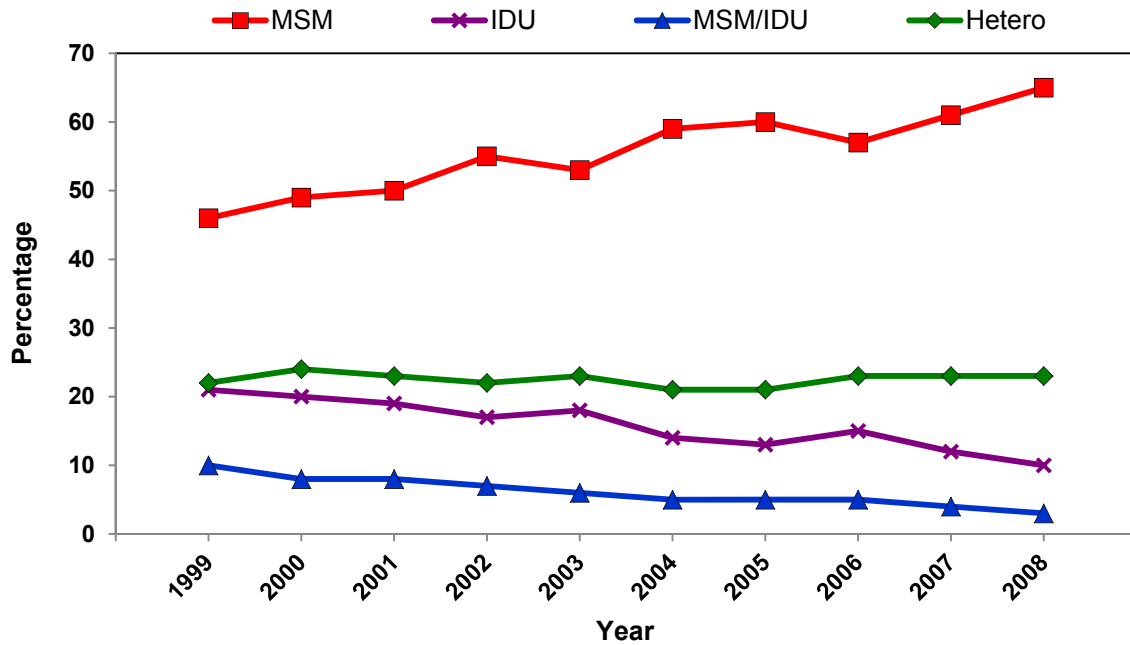
SOURCE: Texas Department of State Health Services

**Exhibit 29. STD Case Rates per 100,000, by Age Group, Texas: 2009**



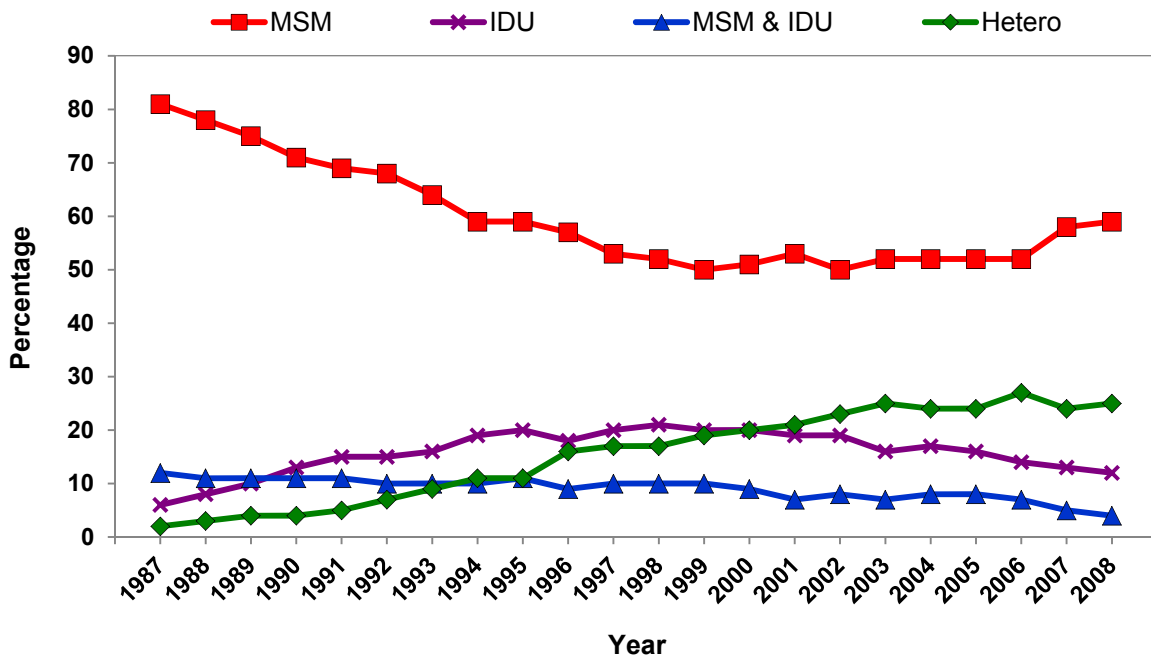
SOURCE: Texas Department of State Health Services

**Exhibit 30. Percentage HIV Cases by Selected Modes of Exposure, Cases With Risk Not Classified Excluded, Texas: 1999–2008**



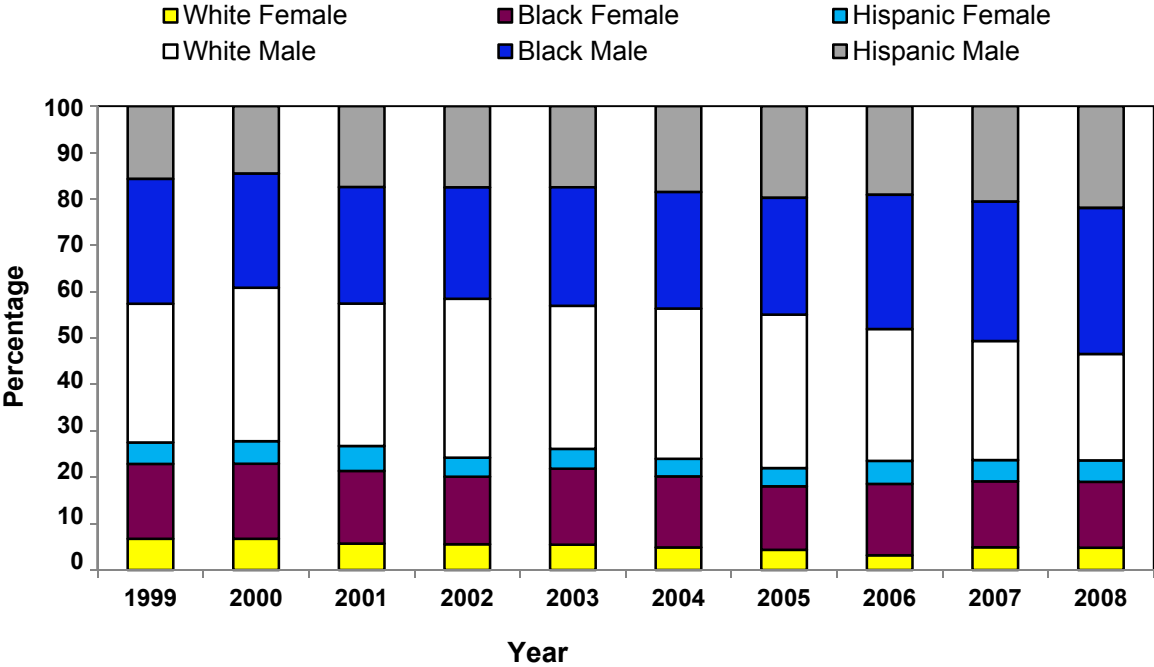
Note: MSM=men who have sex with men; IDU=injection drug user; Hetero=Heterosexual  
 SOURCE: Texas Department of State Health Services

**Exhibit 31. Percentage of AIDS Cases by Modes of Exposure, Cases With Risk Not Classified Excluded, Texas: 1987–2008**



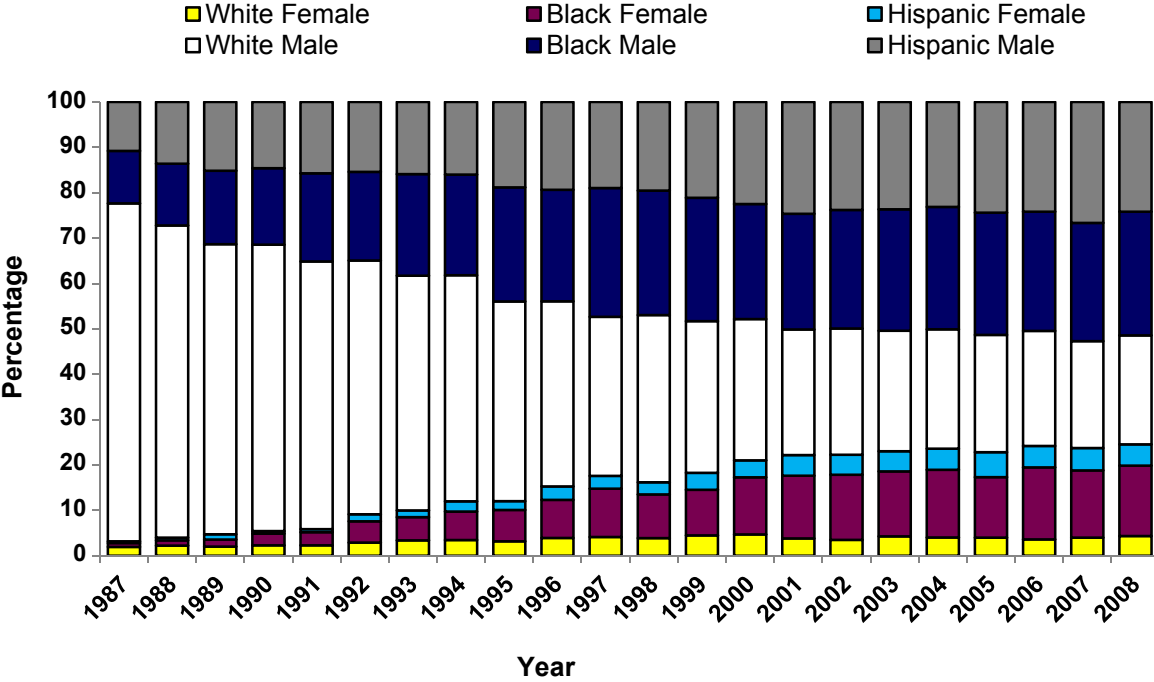
Note: MSM=men who have sex with men; IDU=injection drug user; Hetero=Heterosexual  
 SOURCE: Texas Department of State Health Services

Exhibit 32. Percentage of Male and Female HIV Cases, by Race/Ethnicity, Texas: 1999–2008



SOURCE: Texas Department of State Health Services

Exhibit 33: Percentage of Male and Female AIDS Cases by Race/Ethnicity, Texas: 1987–2008



SOURCE: Texas Department of State Health Services

## Appendix 1

**Marijuana Use in Past Year, Cocaine Use in Past Year, and Nonmedical Use of Pain Relievers in Past Year Among Persons Age 12 or Older, by Substate Region: Percentages, Annual Averages Based on 2004, 2005, and 2006 National Survey on Drug Use and Health (NSDUH)**

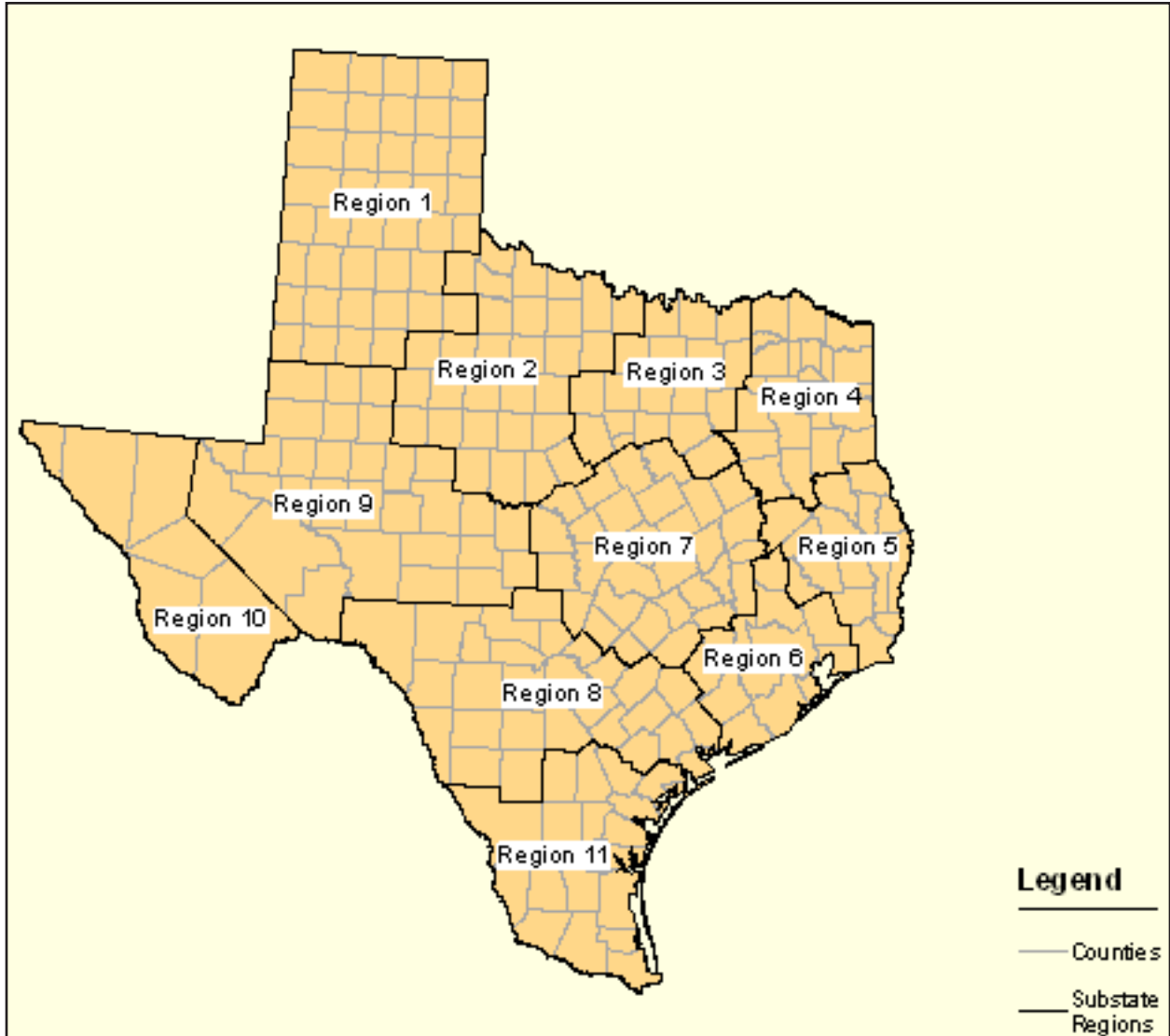
	Marijuana Use in Past Year		Cocaine Use in Past Year		Nonmedical Use of Pain Relievers in Past Year	
	Estimate	95% Prediction Interval	Estimate	95% Prediction Interval	Estimate	95% Prediction Interval
<b>Total United States</b>	10.47	(10.24–10.69)	2.38	(2.26–2.49)	4.89	(4.75–5.03)
<b>Texas</b>	8.49	(7.91–9.11)	2.46	(2.16–2.80)	4.66	(4.25–5.10)
Region 1	9.92	(8.02–12.22)	2.84	(2.06–3.90)	5.71	(4.47–7.28)
Region 2	8.21	(6.37–10.53)	2.38	(1.64–3.45)	4.92	(3.73–6.47)
Region 3	8.59	(7.67–9.60)	2.06	(1.63–2.59)	4.98	(4.31–5.75)
Region 4	6.95	(5.50–8.75)	2.24	(1.61–3.11)	4.82	(3.77–6.16)
Region 5	8.67	(6.74–11.08)	2.55	(1.77–3.67)	5.02	(3.81–6.57)
Region 6	7.93	(6.84–9.19)	2.21	(1.76–2.77)	3.78	(3.16–4.53)
Region 7	11.96	(10.49–13.61)	3.26	(2.59–4.08)	5.82	(4.91–6.89)
Region 8	7.73	(6.44–9.25)	2.80	(2.13–3.68)	4.42	(3.52–5.54)
Region 9	6.88	(5.23–9.00)	2.43	(1.69–3.50)	4.79	(3.58–6.38)
Region 10	6.82	(5.23–8.86)	2.66	(1.83–3.85)	4.18	(3.08–5.66)
Region 11	7.26	(5.96–8.81)	2.81	(2.14–3.69)	4.12	(3.30–5.13)

**Alcohol Use in Past Month, Binge Alcohol Use in Past Month, and Perceptions of Great Risk of Having Five or More Drinks of an Alcoholic Beverage Once or Twice a Week Among Persons Age 12 or Older, by Substate Region: Percentages, Annual Averages Based on 2004, 2005, and 2006 National Survey on Drug Use and Health (NSDUH)**

	Alcohol Use in Past Month		Binge Alcohol Use in Past Month <sup>1</sup>		Perceptions of Great Risk of Having 5 or More Drinks Once or Twice a Week	
	Estimate	95% Prediction Interval	Estimate	95% Prediction Interval	Estimate	95% Prediction Interval
<b>Total United States</b>	51.01	(50.44–51.58)	22.84	(22.52–23.16)	41.45	(41.06–41.84)
<b>Texas</b>	49.14	(47.75–50.53)	24.02	(22.96–25.11)	44.15	(42.80–45.51)
Region 1	47.53	(42.17–52.95)	26.89	(23.31–30.80)	41.42	(37.20–45.76)
Region 2	46.30	(40.85–51.84)	22.79	(19.25–26.76)	41.52	(37.18–45.99)
Region 3	49.68	(47.31–52.05)	22.69	(21.05–24.43)	42.98	(40.91–45.08)
Region 4	43.24	(38.02–48.61)	21.14	(17.91–24.78)	41.46	(37.34–45.70)
Region 5	42.75	(37.61–48.06)	21.47	(18.13–25.24)	43.14	(38.99–47.38)
Region 6	52.46	(49.76–55.14)	24.10	(22.04–26.29)	44.36	(41.84–46.91)
Region 7	54.78	(51.54–57.97)	25.84	(23.58–28.24)	40.88	(38.15–43.67)
Region 8	47.96	(44.29–51.66)	25.07	(22.28–28.07)	45.89	(42.63–49.18)
Region 9	42.60	(36.85–48.55)	22.21	(18.51–26.41)	47.29	(42.60–52.03)
Region 10	43.75	(38.30–49.35)	25.34	(21.37–29.77)	51.31	(47.10–55.51)
Region 11	43.32	(39.37–47.36)	26.07	(23.27–29.09)	50.02	(46.91–53.12)

<sup>1</sup>Binge Alcohol Use is defined as drinking five or more drinks on the same occasion (i.e., at the same time or within a couple of hours of each other) on at least 1 day in the past 30 days.





SOURCES: 2004, 2005, and 2006 NSDUH

**INTERNATIONAL  
REPORTS**

# Monitoring the Drug Situation in Canada: 2009

Judy Snider, M.Sc.<sup>†</sup>

## INTRODUCTION

Monitoring the drug situation in Canada is based on analyses of Health Canada's data from many sources including: the general population survey; surveys of youth in school; surveys of high-risk populations; chemical analysis of exhibits from drug seizures; and seizure data from requests to destroy controlled substances. These data are complemented by those captured by stakeholders, including nongovernment organizations, researchers, and the provinces and territories.

## Data Sources

Multiple data sources were used to prepare this report:

- **Canadian Alcohol and Drug Use Monitoring Survey (CADUMS) 2008** Led by Health Canada, the Canadian Alcohol and Drug Use Monitoring Survey (CADUMS) is the first ongoing general population survey on alcohol and drug use in Canada. The results provide a benchmark for tracking the evolution of the alcohol and drug situation in the general population, including the impact of the National Antidrug Strategy.
- **Canadian Addiction Survey (CAS) 2004** The Canadian Addiction Survey (CAS) conducted in 2004 by the Canadian Centre on Substance Abuse (CCSA) was designed to provide detailed national and provincial estimates of alcohol and drug-related behaviors and outcomes.
- **Youth Smoking Survey (YSS) 2008–2009** The YSS was designed to measure smoking behaviors among youth. However, since 2002,

it also captures information on other substances consumed and supports the timely monitoring of alcohol and drug use among youth in the seventh grade and higher.

- **High-risk Populations Studies 2009** Health Canada sponsored a Comprehensive Alcohol and Other Drug Epidemiological Monitoring System in British Columbia and in Newfoundland and Labrador. One component of these projects captured information from three distinct high-risk populations: adult drug users (19 and older); street-entrenched youth (age 15–18) and recreational drug users age 19 and older (e.g., attendees at clubs, bars, and raves).
- **Enhanced Surveillance of Risk Behaviors among People who Inject Drugs in Canada (I-Track) 2005–2008** The Public Health Agency of Canada's I-Track project provides national surveillance of human immunodeficiency virus (HIV)/hepatitis C (HCV) associated risk behaviors among injection drug users (IDUs) in Canada. Their main objectives are to describe the changing patterns in drug injecting practices, HIV and HCV testing behaviors, and sexual behaviors among IDUs. Data used are unpublished.
- **Drug Analysis Service's (DAS) Laboratory Information Management System (LIMS) 1988–2009** Health Canada's Drug Analysis Service (DAS) conducts chemical analyses of suspected illicit substances for cases proceeding to trial (where a "not guilty" plea is entered). Numbers of seizures over time and regions are affected by the extent, focus, and effectiveness of interception/detection activities by police and border services (e.g., a targeted crackdown on methamphetamine will increase the number of arrests, but does not necessarily indicate increased presence or use of that drug). Analyses of exhibits for purity (based on quantity of substance within the exhibit) are only carried out on a small subset of some exhibits. Therefore, results on purity of samples are not necessarily representative of overall drug seizures or what is available on the street.

<sup>†</sup>The author is affiliated with Health Canada, Ottawa, Canada.

Caution is advised when interpreting these data as they underestimate the total number of illicit drug seizures since they exclude guilty pleas and noncase seizures, and the full range of controlled substances found in a sample may not be captured in the LIMS database.

## DRUG ABUSE PATTERNS AND TRENDS

### Cannabis

Cannabis continued to be the dominant illicit drug in Canada, both from self-reported past-year use and from laboratory analysis of exhibits from seized substances (exhibits 1, 2, and 3). Among the general population age 15 and older, reported past-year use of cannabis decreased from 14 percent in 2004 to 11 percent in 2008 (exhibit 1). When analyzed separately by gender and age (data not shown) a decrease in past-year cannabis use was noted among males age 15 and older and among adult Canadians age 25 and older. In 2008–2009, approximately one in four (27 percent) youth in grades 7 to 12 reported using cannabis in the past 12 months, with a higher prevalence of males (30 percent) reporting this behaviour than females (24.5 percent) (exhibit 2).

Results from the two high-risk population projects found that cannabis use was among the top three substances used by respondents in the past week in British Columbia and in the past year in Newfoundland and Labrador.

The DAS analyzes more exhibits from marijuana seizures than any other substance seized in Canada (approximately 50,000 in 2009). Although the number of cannabis exhibits examined has declined compared with 2004, there has been little change in the number of exhibits analyzed each year since 2005 (exhibit 3).

The number of marijuana exhibits in most regions has remained relatively stable. Since 2003, there has been an increase in marijuana exhibits in Ontario, although it has not exceeded the highest peak measured in 2002.

### Cocaine (Includes Cocaine and Crack Cocaine)

There has been no change in reported past-year cocaine use (2 percent) among Canadians (age 15 and older) between 2004 and 2008 (exhibit 1). Among students in grades 7 to 12 in 2008–2009, 3 percent reported using cocaine in the past 12 months (exhibit 2).

In British Columbia, among adult drug users, crack cocaine was the second most reported substance used in the past week (75 percent), while 16 percent of street youth reported using crack cocaine (ranked fifth). Among recreational drug users, cocaine was also the fifth most common substance with 10 percent reporting past week use. Past-year cocaine use was reported in the top five substances by all three high-risk populations in Newfoundland and Labrador.

Slightly less than 24,000 cocaine exhibits were analyzed by the DAS laboratories in 2009, and this represents a 23 percent decrease since 2007 (exhibit 3). In recent years, a decline in the number of exhibits analyzed has been noted in all regions except the Atlantic Canada where the numbers have remained relatively constant over the years (between 1,500 and 2,500).

### Hallucinogens

The past-year use of hallucinogens increased from less than 1 percent in 2004 to 2 percent in 2008. However, the addition of items (e.g., *Salvia divinorum* [salvia] and magic mushrooms) to the list of substances considered to be hallucinogens in 2008 makes interpretation of these results difficult (exhibit 1). The most notable increase was among youth age 15–24, where reported past-year use more than doubled (from 4 to 10 percent).

Among students, 7 percent of youth in grades 7 to 12 reported using hallucinogens, not including salvia, in the past 12 months (exhibit 2). Salvia use was reported by 5 percent of students with the highest prevalence being reported by students in grades 10 to 12 (7 percent). Although not a controlled substance in Canada, a small number of

exhibits containing salvia have been analyzed annually since 2006.

## Ecstasy

Approximately 1 percent of Canadians (age 15 and older) reported ecstasy use in 2004 and 2008 (exhibit 1). According to the YSS, 7 percent of students (grades 7–12) reported past-12-month use of ecstasy (exhibit 2).

Ecstasy past-week use ranked fourth among street youth (28 percent) and recreational drug users (33 percent) in British Columbia. It also was among the most common substances used in the past year reported by adult drug users (68 percent) and recreational drug users (46 percent) in Newfoundland and Labrador.

Overall in Canada, the number of exhibits of ecstasy (MDMA [3,4-methylenedioxyamphetamine], MDA [3,4-methylenedioxyamphetamine], MDEA [methylenedioxyethylamphetamine], and MMDA [3-methoxy-4,5-methylenedioxyamphetamine]) increased until 2008 and appeared to have declined in 2009 (fewer than 5,300) (exhibit 4). The number of MDMA exhibits has increased in most regions since the late 1990s; however, decreases in MDMA exhibits have been noted in Ontario since 2007 and British Columbia since 2008. An increasing trend was seen in Québec, which in 2009 had the greatest number of exhibits analyzed ( $n=1,845$ ) compared with the other regions.

## Amphetamine and Methamphetamine

Less than 1 percent of Canadians reported past-year methamphetamine (methamphetamine and crystal methamphetamine) use, and 1 percent reported using speed over the same time period (exhibit 1). Among students in grades 7 to 12, 3 percent reported past-12-month amphetamine use (e.g., speed, ice, methamphetamine) (exhibit 2).

Among high-risk populations, 15 percent of street youth in British Columbia reported past-week use of crystal methamphetamine, while 54 percent of this group in Newfoundland and Labrador reported using amphetamine (speed) in the past year.

The number of exhibits analyzed for seizures of methamphetamine has increased 37 percent since 2004, from 5,251 to 7,170 (exhibit 4). Between 2000 and 2008, a steady increase in methamphetamine exhibits analyzed for Québec and Ontario was seen, whereas in Atlantic Canada a slight increase in exhibits was also noted since 2003 onwards. There appeared to be a decrease in the number of methamphetamine exhibits analyzed in the Prairies and British Columbia since the mid-2000s.

After years of fairly stable numbers, amphetamine exhibits have also increased in the past 5 years, from 73 in 2003 to a high of 471 exhibits in 2008. In 2009, there were 234 exhibits (data not shown).

## Heroin

Past-year heroin use is not reportable among Canadians age 15 and older. Among students in grades 7 to 12, 1 percent reported past-12-month use (exhibit 2). Past-week heroin use was reported by 23 percent of adult drug users in British Columbia.

Overall in Canada, the number of heroin exhibits seemed mostly stable (exhibit 4). Regionally, the highest number of heroin exhibits originated in British Columbia. There was a sizeable decrease there (approximately 25 percent) in the number of heroin exhibits analyzed, from 1,024 in 2008 to 742 in 2009. Regardless of region, heroin exhibits peaked in 1999 and decreased in the early 2000s; however, they seemed to be rebounding in Ontario.

## Psychoactive Pharmaceutical Drugs

In 2008, 28 percent of Canadians age 15 and older indicated that they had used (including for medical use) a pharmaceutical drug (e.g., opioid pain reliever, stimulant, sedative, or tranquilizer) in the past year (exhibit 5). Among these users, 2 percent reported that they used such a drug to get high; this represents less than 1 percent of the Canadian population. Among students in grades 7 to 12, 7 percent reported the past-12-month use of a pharmaceutical drug to get high; the prevalence

of pain reliever use to get high was 5 percent, compared with 4 percent for stimulants and 2 percent for tranquilizers or sedatives (exhibit 6).

In Canada, the number of exhibits analyzed for seizures of prescription opioids has increased since 2004. Regional analyses of the number of exhibits indicated an almost sixfold increase in pharmaceutical opioid exhibits in Ontario since 2000. The numbers of exhibits in all other regions have had more moderate increases over the same period of time.

### Emerging Substances

Health Canada is monitoring emerging substances either through surveys, beginning in 2010, (e.g., energy drinks and alcohol, jimson weed, and dextromethorphan) or by exhibit analysis (e.g., 2C family of drugs, salvia, tryptamine, BZP [1-benzylpiperazine], and TFMPP [1-3-(trifluoromethylphenyl)piperazine]), or both. Results from the laboratory analyses of seized substances have identified that the number of exhibits of BZP and TFMPP has increased sevenfold between 2007 and 2008 and has doubled in 2009 (exhibit 7). It is important to note that the low number of exhibits may be due to the fact that these substances, except 2C-B (a synthetic substance, 2,5-dimethoxy-4-bromophenylethylamine), are not currently controlled in Canada.

### INFECTIOUS DISEASES RELATED TO DRUG ABUSE (HIV/AIDS AND HEPATITIS)

According to the Public Health Agency of Canada's I-Track project, between 2005 and 2008, the prevalence of HIV infections in selected Canadian cities and regions ranged from a low of 3 percent in Kingston, Ontario to a high of 21 percent among participants in the SurVIDU network (Québec region and Ottawa). The prevalence of HCV ranged from 51 percent in Thunder Bay, Ontario to 77 percent in Prince George, British Columbia. It is important to note that a positive HCV result indicates past or present HCV infection and does

not discriminate acute from chronic or resolved infections.

Among the study participants who injected drugs, the most common drugs injected in the past month were: cocaine, 45 percent; nonprescribed morphine, 12 percent; hydromorphone (Dilaudid®), 7 percent; heroin, 6 percent; crack, 4 percent; and oxycodone (OxyContin®), 3 percent.

### CONCLUSIONS

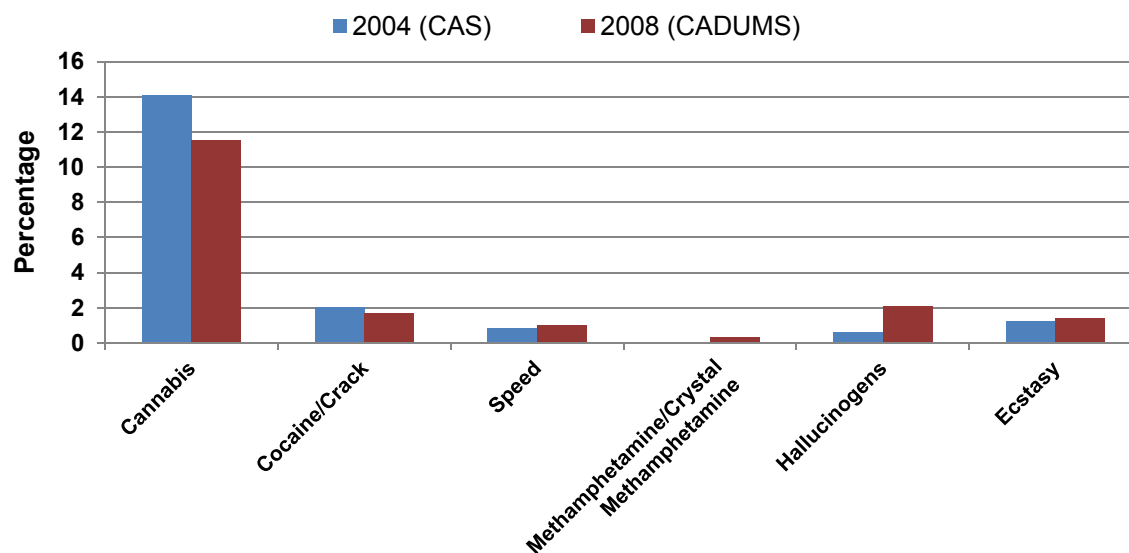
Monitoring the drug situation in Canada continues to improve with the advent of new surveillance tools and the increased capacity to carry out data analyses. These data provide a fairly comprehensive picture of the drug situation in Canada; however, the standard caveats associated with surveys apply (e.g., underreporting, response rates, and cell phones) and the results of analyses of exhibit and destruction data may not reflect actual trends in illicit drug availability. More research is needed to determine the extent of these differences. Overall positive results are seen with the overall decrease in reported substance use by the Canadian population.

### REFERENCES

Unpublished data from I-Track: Enhanced Surveillance of Risk Behaviors among People who Inject Drugs, Phase 2 (2005–2008). Public Health Agency of Canada, Surveillance and Risk Assessment Division, Centre for Communicable Diseases and Infection Control. Dec. 2009.

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**Exhibit 1: Prevalence (by Percentage) of Illicit Drug Use, Past-Year, Age 15 and Older, Canada: 2004 and 2008**



Notes: In the CADUMS, substances were defined as follows

**Cannabis** refers to marijuana, hashish, hash oil, or other cannabis derivatives.

**Cocaine/Crack** includes freebase, powder, snow.

**Speed** (amphetamines).

**Methamphetamine/Crystal Methamphetamine** (Ice).

**Hallucinogens** such as PCP, LSD (acid), salvia (*Salvia divinorum*), and magic mushrooms (includes mescaline, mesc, mess, angel dust, peyote, psilocybin).

**Ecstasy** includes MDMA, E, Xtc, Adam, X.

In the CAS, methamphetamine was not asked and the other substances were defined as follows:

**Cannabis** refers to cannabis, marijuana, or hashish.

**Cocaine/Crack.**

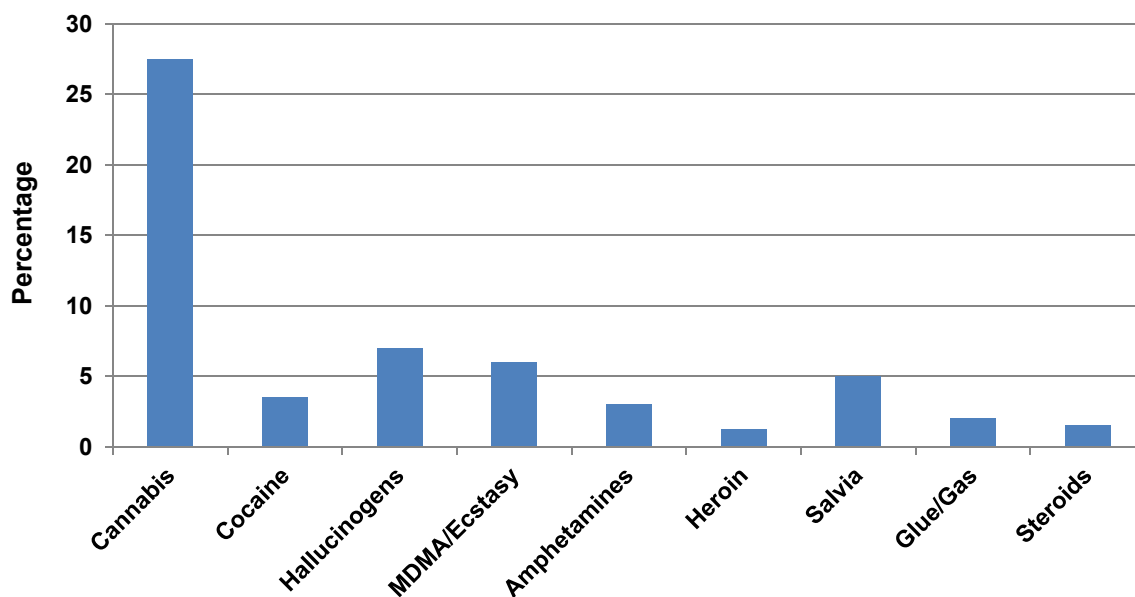
**Speed** (amphetamines)

**Hallucinogens** PCP, or LSD (acid).

**Ecstasy** (MDMA) or other similar drugs.

SOURCES: Health Canada: Canadian Alcohol and Drug Use Monitoring Survey (CADUMS), 2008; Canadian Centre on Substance Abuse: Canadian Addiction Survey (CAS), 2004

**Exhibit 2: Prevalence (by Percentage) of Past-12-Month Substance Use, Among Youth in Grades 7–12, Canada: 2008–2009**



Note | In the YSS, substances were defined as follows:

**Cannabis** refers to marijuana or cannabis (a joint, pot, weed, hash).

**Cocaine** (crack, blow, snow).

**Hallucinogens** (LSD, PCP, acid, magic mushrooms, mescaline).

**MDMA** (ecstasy, E, X).

**Amphetamines** (speed, ice, methamphetamine).

**Heroin** (smack, junk, crank).

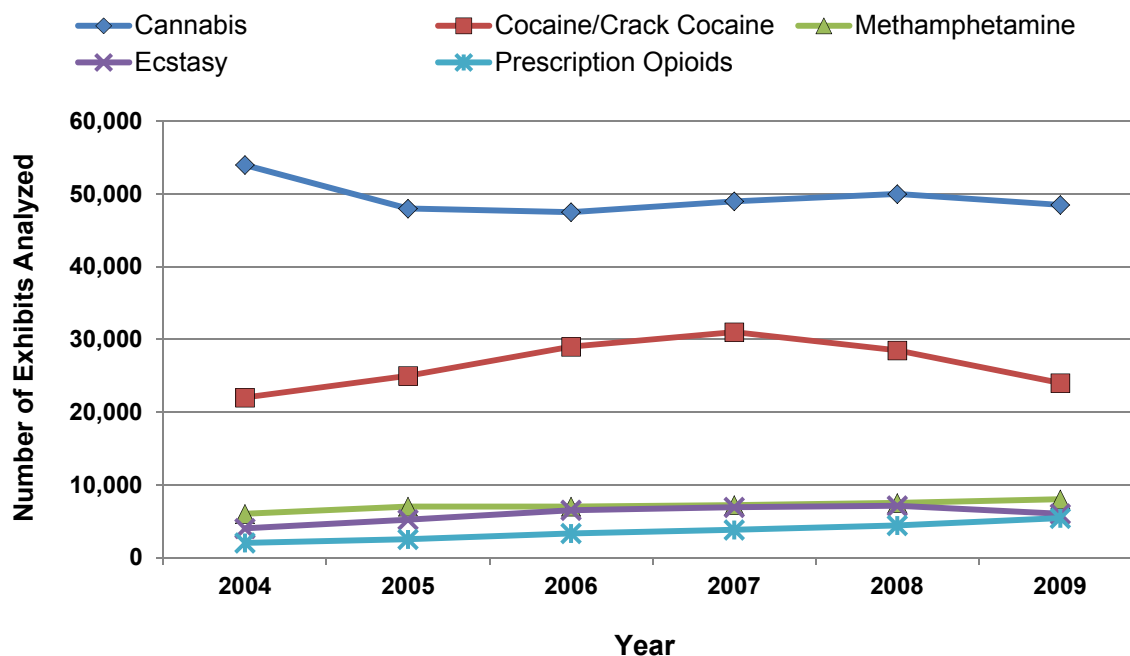
**Salvia** (Divine sage, Magic Mint, Sally D) to get high.

**Glue** includes gasoline or other solvents to get high.

**Steroids** (e.g., testosterone, growth hormones, Dianabol®, juice).

SOURCE: Health Canada: Youth Smoking Survey (YSS), 2008–2009



**Exhibit 3: Trends (Number) in Top Five Most Frequently Analyzed Exhibits, Canada: 2004–2009**

Note: In the LIMS, substances were defined as follows

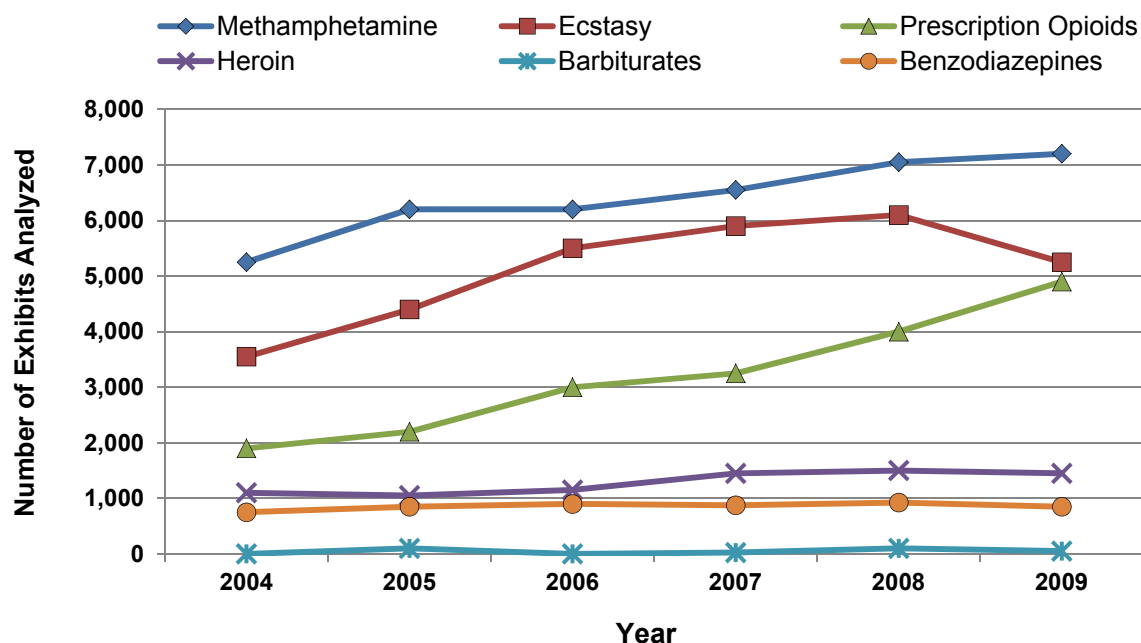
**Cannabis** includes marijuana, hashish, and hash oil.

**Ecstasy** includes MDMA, MDA, MDEA, and MMDA

**Prescription Opioids** include: acetyldihydrocodeine, alfentanil, anileridine, apomorphine, buprenorphine, butorphanol, codeine (methylnormine), codeine salt, dihydrocodeine, dihydromorphine, diphenoxylate, ethylmorphine, fentanyl, hydrocodone(dihydrocodeinone), hydromorphanol, hydromorphone (dihydromorphinone), levomethorphan, levorphanol, methadone, morphine, morphine salt, nalbuphine, oxycodone(dihydrohydroxycodone), oxymorphone, pentazocine, pethidine, propoxyphene, racemethorphan, sufentanil, and tramadol.

SOURCE: Health Canada, Drug Analysis Service, Laboratory Information Management System (LIMS), 2004–2008

Exhibit 4: Trends (Number) in Items Analyzed, for Selected Substances, Canada: 2004–2009



Note In the LIMS, substances were defined as follows

**Ecstasy** includes MDMA, MDA, MDEA, and MMDA.

**Prescription Opioids** include: acetyldihydrocodeine, alfentanil, nalbuphine, apomorphine, buprenorphine, butorphanol, codeine (methylmorphine), codeine salt dihydrocodeine, dihydromorphine, diphenoxylate, ethylmorphine, fentanyl, hydrocodone (dihydrocodeinone), hydromorphanol, hydromorphone (dihydromorphinone), levomethorphan, levorphanol, methadone, morphine, morphine salt, nalbuphine, oxycodone (dihydrohydroxycodone), oxymorphone, pentazocine, pethidine, propoxyphene, racemethorphan, sufentanil, and tramadol.

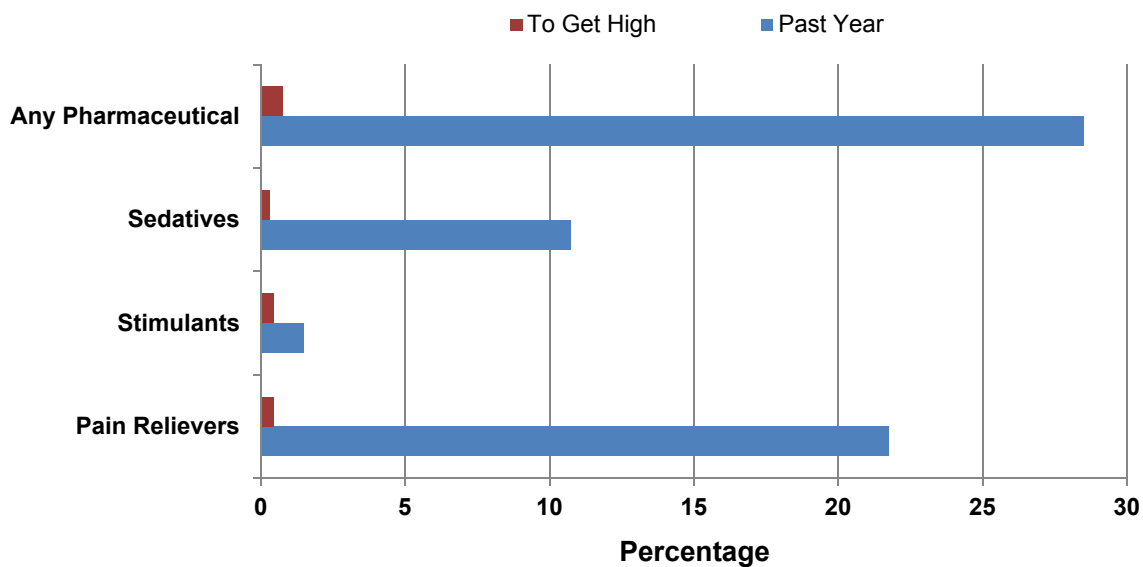
**Heroin** includes: heroin, heroin base, and heroin salt.

**Barbiturates** include: amobarbital, barbital, barbituric acid, butalbital, butobarbital, cyclobarbitol, methobarbital, mephobarbital, thiopental, pentobarbital, phenobarbital, and secobarbital.

**Benzodiazepines** include: alprazolam, bromazepam, clobazam, clonazepam, lorazepam, diazepam, estazolam, flunitrazepam, flurazepam, ketazolam, chlordiazepoxide, loperazolam, lorazepam, medazepam, midazolam, nitrazepam, nordazepam, oxazepam, temazepam, triazolam, zolpidem, and zopiclone.

SOURCE: Health Canada, Drug Analysis Service, Laboratory Information Management System (LIMS), 2004–2008

**Exhibit 5: Prevalence (by Percentage) of Psychoactive Pharmaceutical Drug Use Past-Year, Age 15 and Older, Canada: 2008**



Note In the CADUMS, substances were defined as follows:

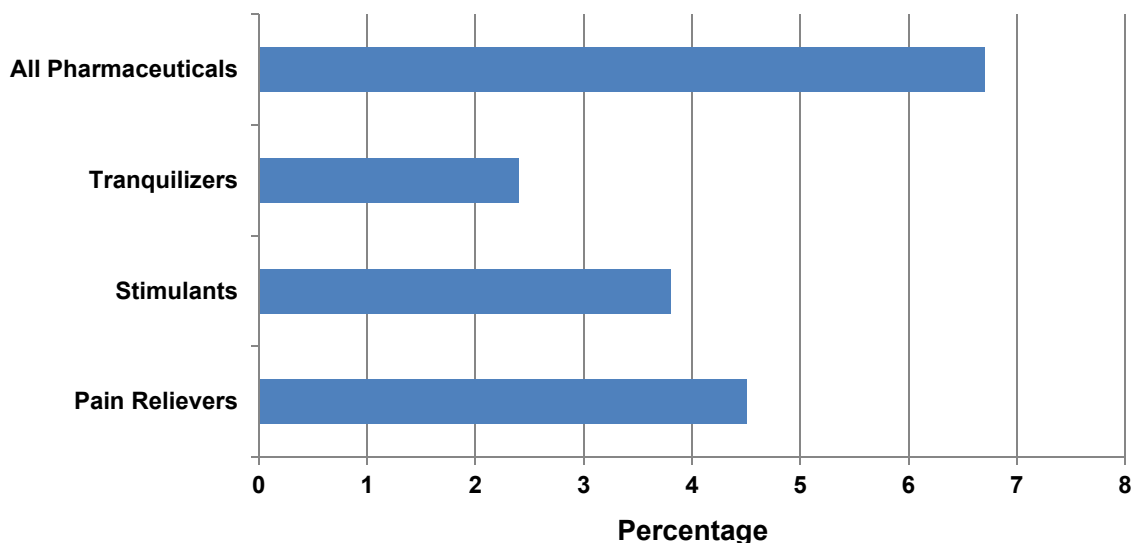
**Stimulants** obtained from a doctor such as Ritalin®, Concerta®, Adderall®, Dexedrin®, or others.

**Sedatives** obtained from a doctor such as Valium®, Ativan®, Xanax®, or others.

**Pain relievers** doctor or dentist prescribed such as Percodan®, Demerol®, OxyContin®, or pain relievers with codeine obtained from a pharmacist without a prescription (such as Robaxacet® 8, 222, or theirs).

SOURCE: Health Canada: Canadian Alcohol and Drug Use Monitoring Survey (CADUMS) 2008

**Exhibit 6: Prevalence (by Percentage) of Past-12-Month Psychoactive Pharmaceutical Drug Use “To Get High,” Among Youth in Grades 7–12, Canada: 2008–2009**



Note: In the YSS, substances were defined as follows:

**Stimulants** such as diet pills and stay awake pills (uppers, bennies) or medicine to treat ADHD (such as Ritalin®, Concerta®, Adderall®, or Dexedrine®) to get high.

**Sedatives or tranquilizers** (such as Valium®, Ativan®, Xanax®, also known as tranqs downers, etc.) to get high.

**Pain relievers** (such as Percocet®, Percodan®, Demerol®, OxyContin®, or any pain reliever with codeine) to get high.

SOURCE: Health Canada, Youth Smoking Survey (YSS), 2008–2009

**Exhibit 7: Number of Items Analyzed, Emerging Substances, Canada: 2005–2009**

	2005	2006	2007	2008	2009
2C Family	6	81	53	104	161
Salvia	0	9	8	4	18
Tryptamine	11	5	124	242	144
BZP	0	5	146	1,061	2,121
TFMPP	0	3	129	920	2,079

SOURCE: Health Canada, Drug Analysis Service, Laboratory Information Management System (LIMS), 2004–2008

# Vancouver and British Columbia Drug Use Epidemiology Report: 2009

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## ABSTRACT

*This report collates and interprets the most recent drug use epidemiology data currently available from various sources for Vancouver and/or British Columbia (BC). The Downtown Eastside (DTES) core continued to be the center of injection drug use in Vancouver. Males and Aboriginal people were overrepresented and had poor health and social outcomes, including lower education and average income and higher unemployment than British Columbia. The Vancouver Police Department reported an increase in offences under the criminal code from 2003 to 2006 related to each of the four drug types—cocaine, heroin, cannabis, and “other drugs”—in part associated with a change in reporting. However, offences related to all drug types declined in 2007 and again in 2008 by at least 10 percent. Overall, BC has the highest crime rate in Canada. Provincial drug crime rates showed cannabis crimes were relatively constant from 2007 to 2008, while cocaine, heroin, and other drugs declined. Substances seized by the police and customs officers where prosecution occurs are analyzed by the Health Canada Drug Analysis Service (DAS). Marijuana was the most frequent “exhibit” analyzed; while the increase in crack cocaine since 1997 continued into 2008, as heroin remained stable. Surveys of three high-risk populations (club users, street-involved*

*youth, and street-involved adults) continued in Victoria and Vancouver in 2009. The most frequently reported drug injected in the past year in adult injection drug users (IDUs) continued to be cocaine at 79 percent and heroin at 65 percent. Almost 70 percent of adult IDUs reported using noninjection crack, while 20 percent of street youth used noninjection crack. In 2009, there were provisionally 60 illicit drug overdose deaths of Vancouver residents reported to the Coroner and 106 in the rest of BC. These numbers are subject to change with follow-up. Using attributable fraction methodology, BC deaths related to illicit drugs declined, from 8.1/100,000 in 2002 to 6.5/100,000 in 2008. At the same time, hospitalizations related to illicit drugs increased from 82/100,000 to 109/100,000. Cases of neutropenia related to smoking crack containing levamisole continued to be sporadically reported in BC. Newly identified hepatitis C virus infections in Vancouver have continued to decline, and recently so has seroconversion within 24 months, despite an increase in testing in Vancouver and BC overall. New positive human immunodeficiency virus (HIV) cases have also declined in the IDU population. Over 5 million sterile needles/syringes and 2.7 million sterile water vials were sent to harm reduction distribution sites in BC in the fiscal year 2009/2010; 3.1 million needles were received in Vancouver, and of these 1.5 million went to InSite (the supervised injection site) for use in the facility and for distribution. Rigorous research of Vancouver’s IDU cohorts and the supervised injection facility continued to be published in peer-reviewed journals. Recently an increase in crack smoking with IDUs was associated with HIV infection. In May 2008, the BC Supreme Court Judge found the Federal government’s application of drug laws to InSite was not in accordance with the principles of fundamental justice. In January 2010, the BC Court of Appeal dismissed the appeal by the Federal government; however in February 2010, the Federal government announced they will appeal this decision.*

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## INTRODUCTION

### Area Description

Vancouver, British Columbia is on the southwest coast of Canada. Port Metropolitan Vancouver is the largest and busiest port in Canada. The 2009 population estimates of BC were 4.46 million, 643,000 of whom lived in Vancouver City. Vancouver is divided into six Community (Local) Health Areas (CHAs), including the Downtown Eastside (DTES), with a population 64,648. The DTES Core continued to be the center of the Vancouver injection drug epidemic. Males and Aboriginal persons were overrepresented in the Vancouver DTES, compared with BC as a whole.

### Crime and Enforcement

In Canada, offences involving drugs are prosecuted under the Controlled Drugs and Substances Act (CDSA) and are categorized by drug type (i.e., heroin, cocaine, cannabis, and other). Drug offence data are influenced by police enforcement practices and reporting styles. In 2004, the Vancouver Police Department (VPD) adapted a new reporting style that took into account four separate offences per incident instead of the previous single most serious offence. Offences rose substantially from 2003 to 2006, but declined for each drug in 2007 and 2008. In 2008, the highest numbers of drug offences in Vancouver were related to cocaine (48 percent). Cannabis accounted for 34 percent; heroin, 12 percent; and other drugs, 5 percent.

The Health Canada Drug Analysis Service (DAS) performs chemical composition analysis of suspected illegal substances seized by Canadian police and customs officers (called exhibits). Only substances where the arrestee is prosecuted are analyzed. Data are recorded in the Laboratory Information Management System (LIMS), which does not record the quantity of drug seized. Marijuana was the most frequent exhibit (data not shown). Crack cocaine showed the most dramatic increase in the number of exhibits analyzed by DAS over the past 10 years (exhibit 1).

## DRUG ABUSE PATTERNS AND TRENDS

### Prevalence of Illicit Drug Use

Prevalence of drug use can be obtained from general population or school surveys. However, these surveys underestimate true prevalence as those with problematic substance use are less likely to answer the surveys or be in school. The Canadian Alcohol and Drug Use Survey in 2008 found that one-half of the residents of BC reported lifetime use of marijuana. Males and females in BC reported using marijuana more frequently in the previous year than residents of the rest of Canada, at 16 versus 14.1 percent for males, and 10.6 versus 8.3 percent for females, respectively.

The fourth BC Adolescent Health Survey was completed in 2008 and included over 10,000 youth age 16–18. Forty-six percent of the youth reported having tried marijuana. The proportion who reported trying mushrooms, cocaine, and amphetamines had declined from the previous surveys in 2003 and 1998. However, as shown in exhibit 2, the most commonly used drug other than alcohol and marijuana was prescription pills without a doctor's consent, which rose to 18 percent. Face-to-face interviews of three high-risk populations (club and party attendees, street-involved youth age 16–24, and street-involved adults) have been performed in Vancouver and Victoria. To monitor patterns and trends, the survey data was collected in waves—two waves in 2008 and two in 2009—of a convenience sample of 50 participants in each group and both sites. Qualitative and quantitative data were collected, including drug use in the past 12 months, last 30 days, and last week. The relative frequency of survey administration enabled the survey to be responsive and explore current concerns. The frequency of drugs used by club and party attendees at both sites in 2008 and 2009 combined and used by street youth are shown in exhibits 3 and 4 respectively. While lifetime ecstasy and cocaine use in these groups were high, the rates of drug use declined steeply for the more recent time periods.

In the most recent (2009) club and party drug user survey, cocaine, ecstasy, and LSD (lysergic acid diethylamide) were extensively used in the last year, while heroin, crack, amphetamine, and crystal methamphetamine were relatively uncommon. The street youth were also surveyed regarding their injection drug use in the past year; 11 percent reported injecting heroin, and 11 percent reported injecting crystal methamphetamine. Cocaine injection was reported by 6 percent and crack cocaine by 3 percent of the youth.

Among the adult street entrenched drug users interviewed in Vancouver and Victoria, lifetime cocaine and crack use was almost universal (>95 percent). Injection of cocaine in the past year was reported by 79 percent of the street-involved adults; 65 percent reported injecting heroin; crack cocaine and crystal methamphetamine injection was reported by 48 and 37 percent, respectively (exhibit 5).

Noninjection crack cocaine use in the past month was reported by 20 percent of street-involved youth. A total of 90.7 percent of street-involved adults reported using crack cocaine in the past 30 days; 69 percent reported noninjection use, and 21.5 percent reported injecting crack cocaine.

## **Harms from Illicit Drug Use**

### *Illicit Drug Overdose Deaths*

The BC Coroners Service reports on illicit drug overdose deaths. It conducts a toxicological examination for all deaths where the abuse of street drugs is suspected. In 2008, there were 34 illicit drug overdose deaths reported in residents of Vancouver, which was a decrease from a high of 191 in 1998 (exhibit 6). The number of illicit drug overdose deaths in the rest of BC also declined. Provisional data from 2009 indicated 60 deaths in Vancouver and 104 in the rest of BC. However, these data are subject to change as cause of death and region of residence are determined.

### *Hospitalization and Deaths Attributable to Substance Use in British Columbia*

Hospitalization and deaths attributable to substance use in BC are calculated using the etiologic

fraction methodology. Aggregate data is received from BC Ministry of Health Discharge Abstract Database and BC Vital Statistics agency for more than 70 individual ICD-10 codes, by sex, 5-year age group, and health region. The hospitalizations and deaths are calculated for tobacco, alcohol, and illicit drugs, both as absolute numbers and age/sex adjusted rates. Illicit drug morbidity and mortality included a proportion of hospitalizations and deaths due to HIV and hepatitis C, mental and behavioral disorders due to drugs, as well as accidental and intentional illicit drug overdose deaths. The most recent data available was for 2008.

Exhibit 7 shows provincial hospitalization and mortality rates for the three categories of substance use. Overall deaths and hospitalizations related to tobacco are declining over time; hospitalizations related to alcohol and illicit drugs have increased while deaths for both alcohol and illicit drugs have remained fairly constant. A description of the methodology can be found at the Alcohol and Other Drug Monitoring Project Web site (see references).

Exhibit 8 shows the hospitalization and mortality rates attributable to illicit drugs by Health Authorities. Although the hospitalization rates have increased from 82/100,000 in 2002, to 109/100,000 in 2008, there appeared to be a flattening or decrease in the most recent rates in all health authorities. Hospitalization rates in 2007 and 2008 were highest in northern BC and the interior of the country, and lower in Vancouver and Fraser Health, which have the largest populations. Deaths attributable to illicit drugs have declined since 2006 in all health authorities except Northern Health, where the small population may make the rates unstable. The overall death rate attributed to illicit drugs in Canada declined from 8.1/100,000 in 2002 to 6.5/100,000 in 2008.

### *Neutropenia Related to Cocaine Use*

Cases of neutropenia associated with exposure to cocaine and levamisole, an antihelminthic agent, were first identified in Alberta and BC in 2008. In BC, a report form was developed to collect and

collate the information. Cases continued to be sporadically reported, but underreporting was likely considerable. Two-thirds of the cases were female. Fifty-eight percent of those with a known route of exposure reported smoking cocaine/crack cocaine, and 80 percent where type of cocaine was known reported using crack cocaine. Cases were distributed throughout the province, although relatively few (3 of 37 cases reported as of May 2010) were in persons residing in Vancouver, where crack cocaine use is common.

### **Infectious Diseases Related to Drug Use: HCV and HIV**

In BC, more than 67,000 persons were reported to have been infected with hepatitis C virus (HCV) since it became a reportable disease in 1992. As some cases have died, and about 25 percent of cases clear the virus naturally, it is estimated that 40,000 persons in BC have chronic HCV and are aware of their diagnosis (with an additional 20,000 projected to be unaware of their infection). Sharing of needles and other injecting equipment during intravenous drug use is the most common risk factor for contracting the disease; sharing snorting and smoking equipment such as straws and pipes have also been implicated.

A positive HCV antibody result indicates that infection has occurred, but is unable to distinguish if the virus has been cleared or has become a chronic infection. People may be tested for HCV due to past or ongoing risk factors, such as drug use. However, others may be tested as they develop symptoms as a result of chronic HCV infection such as cirrhosis, having been infected many years ago. Newly identified HCV infections do not necessarily mean a person has recently acquired HCV. In BC, newly identified HCV positive results are entered into the provincial integrated Public Health Information System. Exhibit 9 shows the rate of HCV infection per 100,000 population in Vancouver, BC and Canada. The peak of identification in 1996–1997 was associated with the notification from the BC Ministry of Health for blood product recipients prior to 1992 to be tested for HCV.

In 2009, 459 cases of HCV were reported in Vancouver, a slight increase from the previous year but a general historical decrease. Cases identified are also dependent on testing patterns as well as actual cases. Although females test more frequently than males, more cases of HCV were identified in males over the age of 25 (exhibit 10).

The Provincial Public Health Reference Laboratory performs 95 percent of anti-HCV (HCV antibody) testing and has positive and negative anti-HCV results from more than 900,000 individuals since 1992. This longitudinal data set allows identification of persons who have seroconverted from HCV negative to positive antibody. Only 25 percent of persons infected with HCV develop symptoms at the time of infection, and acute infections are often missed. Therefore, new infections of HCV can be more completely identified using laboratory data.

Looking at seroconversion within 24 months (i.e., negative anti-HCV within 24 months of a positive anti-HCV), more females than males were identified in 2007, 2008, and 2009 (data not shown). The number of individual anti-HCV testers per year has steadily increased since 1998, with more than 120,000 persons tested for anti-HCV in 2009. Despite this increase in testing, the number of HCV seroconversions within 24 months appears to have decreased since 2006 (exhibit 11).

Since 2004, there has been a decline in HIV cases that identify injection drug use as the main risk factor. The decline was especially noticeable from 163 cases in 2007 to 67 cases in 2008. A number of reasons are being considered for the decline and include: the impact of harm reduction programs such as needle distribution introduced in BC in 2003 (prior to this it was a needle exchange policy), increase in methadone maintenance uptake, and the opening of the supervised injection facility in Vancouver; changing patterns of drug use, with an increase in smoking and decrease in injection; an increase in uptake of Highly Active Antiretroviral Treatment among IDUs; and a decrease in sexual transmission of HIV in injection drug users.



In a data linkage study performed at the BC Centre for Disease Control, positive cases of HIV were linked to the combined laboratory database (of negative and positive HCV antibody results) and HCV reported cases in BC. Of 4,598 HIV cases with personal identifiers, 3,219 (70 percent) were linked to the combined HCV database; 1,700 (53 percent) of these were anti-HCV positive. HCV was diagnosed first in over one-half (52 percent) of co-infected cases with a median time to HIV identification of 3.5 years.

### **Reducing Harms From Illicit Drug Use**

Harm reduction aims to keep people safe and minimize death, disease, and injury from high risk behavior. It involves a range of services and strategies to enhance knowledge, skills, and supports to enable individuals, families, and communities to be safer and healthier. Harm reduction initiatives in BC include: methadone maintenance therapy; harm reduction supplies (e.g., condoms, needles/syringes, and sterile water); and the supervised injection site (Insite).

#### *Methadone Maintenance Therapy*

The College of Physicians and Surgeons of BC administers the methadone program and maintains a register of patients receiving methadone for the treatment of opioid dependency throughout BC. Studies have found that methadone maintenance therapy programs reduce morbidity and mortality among opiate-addicted clients and diminish the users' involvement in crime, as well as reducing the risk of contracting HIV and helping drug users to gain control of their lives. As of December 31, 2009, 11,033 clients were registered with the methadone maintenance therapy (MMT) program. Exhibit 12 shows the number of patients receiving MMT as of December of that year. Prior to 2003, all clients on methadone, whether for maintenance or prescribed for pain, were included. Following a general decline from 2002 to 2005, there has been a steady increase in clients receiving MMT.

In order to receive authorization (section 56 of CDSA exemption) to prescribe methadone for

maintenance to their patients, a physician must complete a 1-day workshop and 2 half-days of a preceptorship. Twenty-eight physicians were granted methadone maintenance exemptions in 2009. In BC, 390 physicians are methadone maintenance exempted, and 218 of these have patients registered with them; 218 physicians provide methadone to over 11,000 patients receiving MMT.

#### *Harm Reduction Supplies*

Policies regarding harm reduction supply distribution in BC are developed by the BC Harm Reduction Strategies and Services Committee. Harm reduction supplies, such as sterile needles/syringes, sterile water vials, cookers, and acidifiers for injecting drugs; mouthpieces and pushsticks for smoking crack cocaine; and safer sex products, are coordinated through BC Centre for Disease Control pharmacy. Supplies are distributed through a central warehouse location. The orders for supplies are tracked by individual items to more than 300 approved ordering sites. In the fiscal year 2009–2010, more than 5 million needles/syringes and 2.66 million sterile water vials were sent to harm reduction distribution sites in BC. Of these, 3.1 million needles were received in Vancouver and 1.5 million went to Insite for use for injection within the facility and distribution for use off-site.

A map of needle and other supply distribution can be found in the May 2010 Strategies Newsletter available on the BC Centre for Disease Control Web page ([bccdc.ca](http://bccdc.ca)). Exhibit 13 shows the distribution of harm reduction supplies by fiscal year (April 1 to March 31) from 2006–2007 to 2009–2010 by health authority in BC. Exhibit 14 shows totals for needles and water vials distributed to Vancouver sites.

#### *Supervised Injection Site*

Supervised injection sites (SISs) are controlled health care settings where people who use drug can inject under supervision illicit drugs which they have personally acquired. Counseling, health care, and referral to social services, health, and

drug use treatment services are available from staff at the facility. There are 70 SISs in 6 countries around the world, including Europe and Australia. A supervised injection site was established in Vancouver in 2003.

Since it opened in September 2003, Insite has had more than 1.5 million visits. In 2009, more than 275,000 visits were reported, averaging 700 visits and 500 injections per day. Also in 2009, 484 interventions for overdose were given with no fatalities, and there were 2,492 clinical treatment interventions and 6,242 referrals to other social and health services, mostly for detoxification and addiction treatment. A 12-bed detoxification unit (Onsite) has been opened, to which there have been 411 admissions.

Rigorous peer-reviewed research of the cohorts of people who inject drugs and youth who use drugs in Vancouver and the supervised injection facility continued to be published in eminent journals. A recently published paper found an increase in crack smoking in people who inject drugs was associated with HIV infection.

When Insite opened in September 2003, it received a Section 56 exemption from Health Canada. The exemption renewal was deferred until the end of 2007 while an external evaluation was performed. The exemption was extended until the end of 2008. In May 2008, the BC Supreme Court Judge found the application of the Federal drug laws to InSite deprives injection drug users of their rights to life, liberty, and security of the person, and is not in accordance with the principles of fundamental justice. In January 2010, the BC Court of Appeal dismissed the appeal by the Federal Government, stating that health responses to drug addiction fall under provincial jurisdiction. However, in February 2010, the Federal Government announced it will again appeal this decision.

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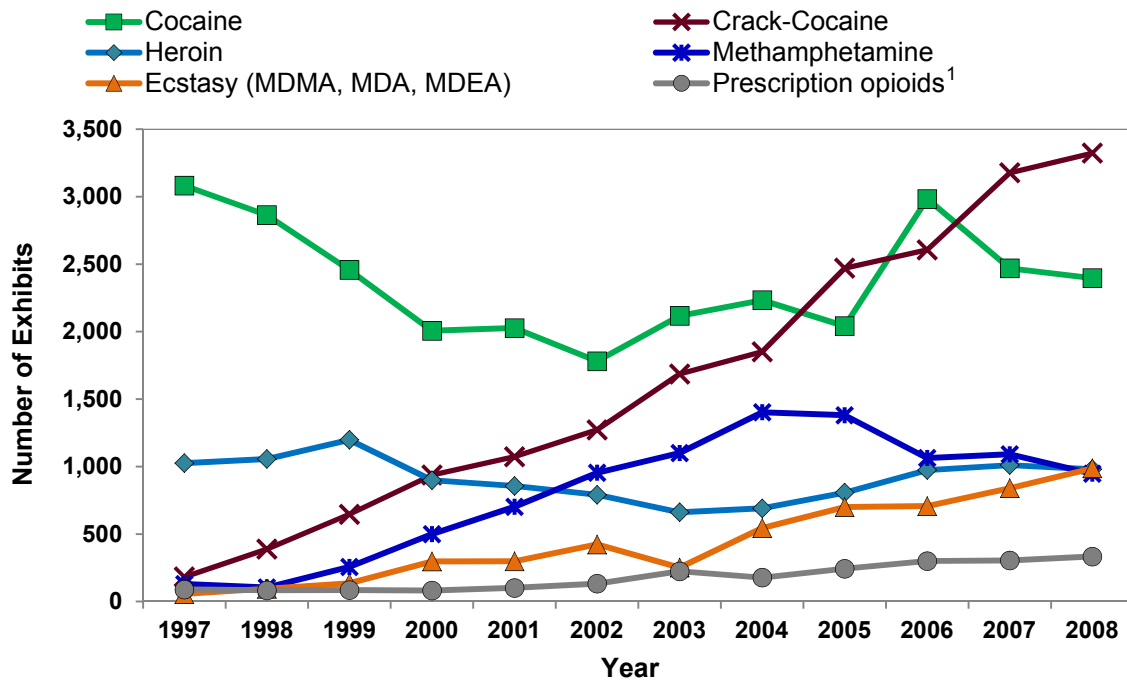
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**Exhibit 1. Number of Exhibits Analysed by the Drug Analysis Service, BC: 1997–2008**



Prescription opioids include: morphine, methadone, pethidine, fentanyl, codeine, oxycodone, hydromorphone, buprenorphine, mep-  
eridine, pentazocine, propoxyphene, tramadol, sufentanil.

SOURCE: British Columbia Alcohol and Other Drug Monitoring Project

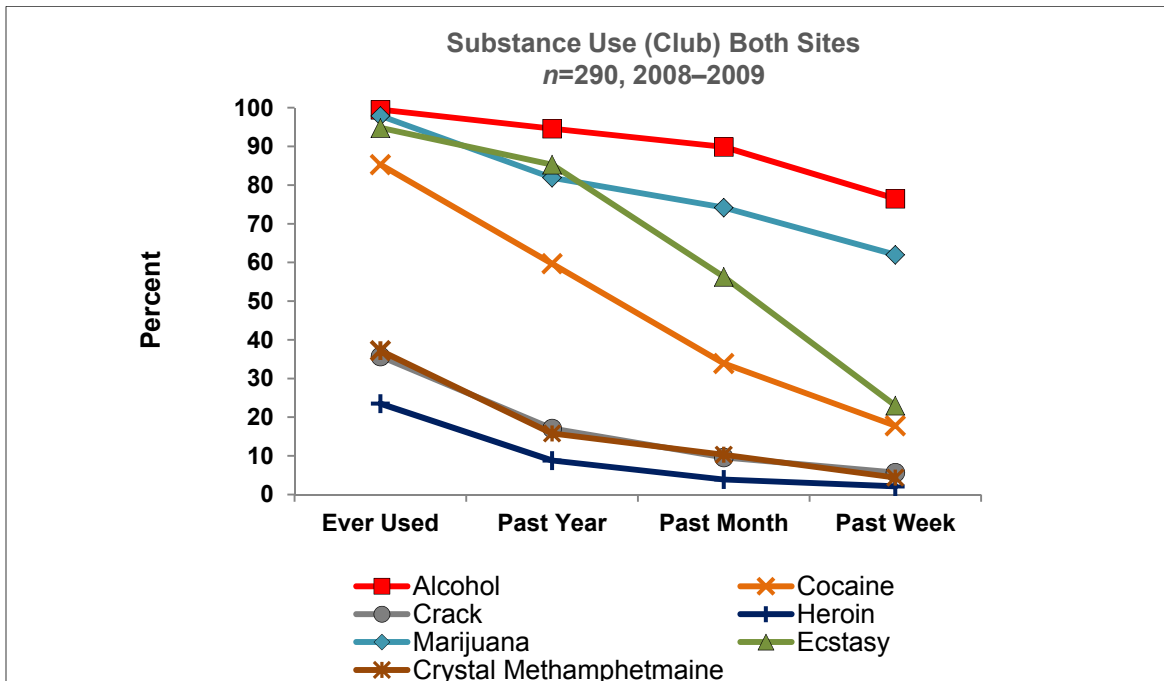
**Exhibit 2. Reported Drug Use Among Students Age 16–18, British Columbia: 1998, 2003, and 2008**

Report of substance use among 16–18-year-old students			
	1998	2003	2008
Prescription pills (without a doctor's consent)	13%	11%	18%
Any hallucinogens (including ecstasy)	19%	12%	15%
Mushrooms	27%	21%	13%
Cocaine	11%	8%	7%
Inhalants	5%	4%	4%
Any amphetamines (including crystal methamphetamine)	7%	6%	4%
Steroids	1%	1%	2%
Heroin	2%	1%	2%
Injected an illegal drug	1%	<1%	1%

Drugs "tried."

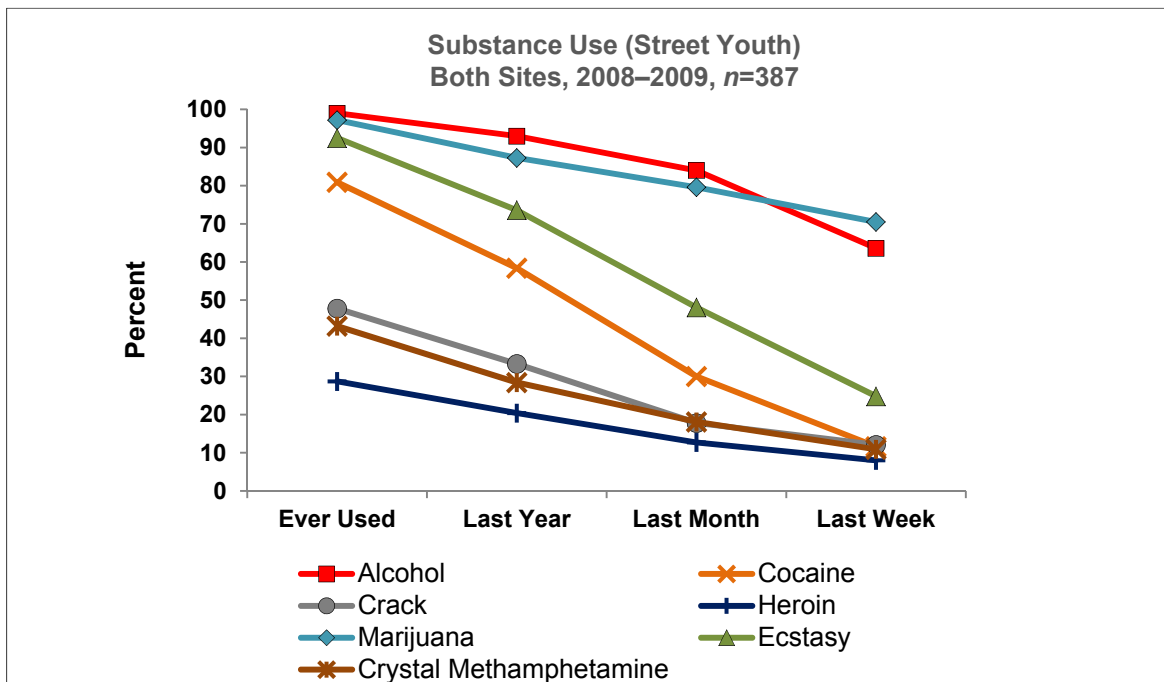
SOURCE: 2008 BC Adolescent Health Survey Bulletin

**Exhibit 3. High-Risk Survey Results for Substance Use, by Percent, in Vancouver and Victoria: 2008–2009**



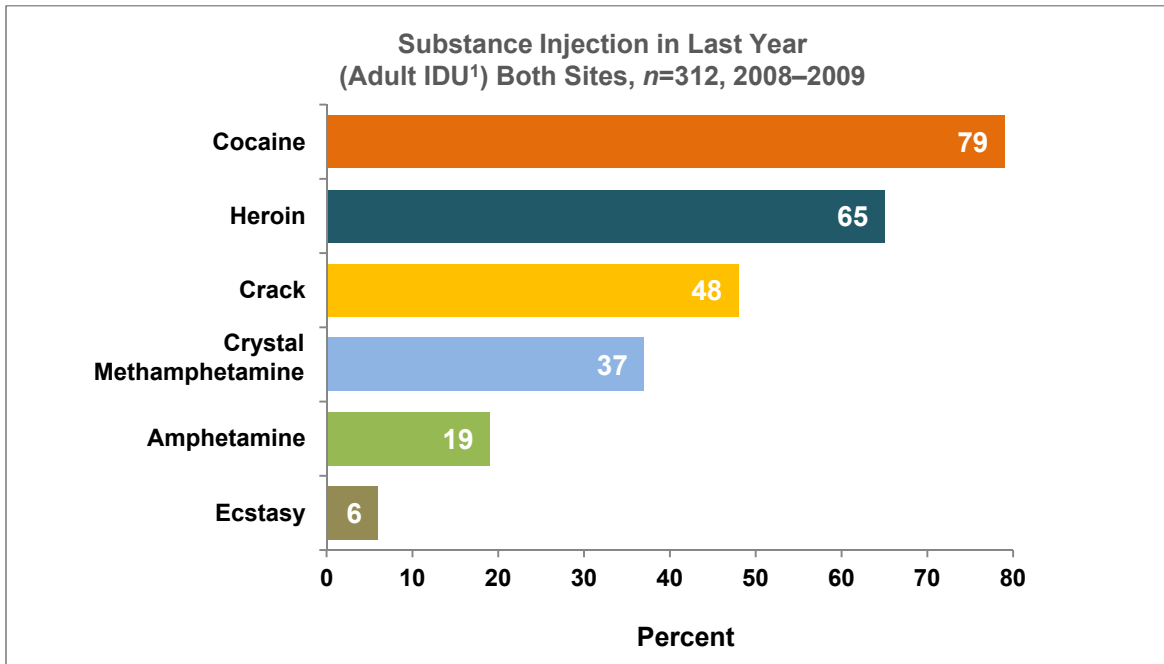
Note: See Vancouver report "Prevalence of Illicit Drug Use" section for methodology.  
SOURCE: British Columbia Alcohol and Other Drug Monitoring Project

**Exhibit 4. High-Risk Survey Results for Substance Use in Street Youth, by Percent, in Vancouver and Victoria: 2008–2009**



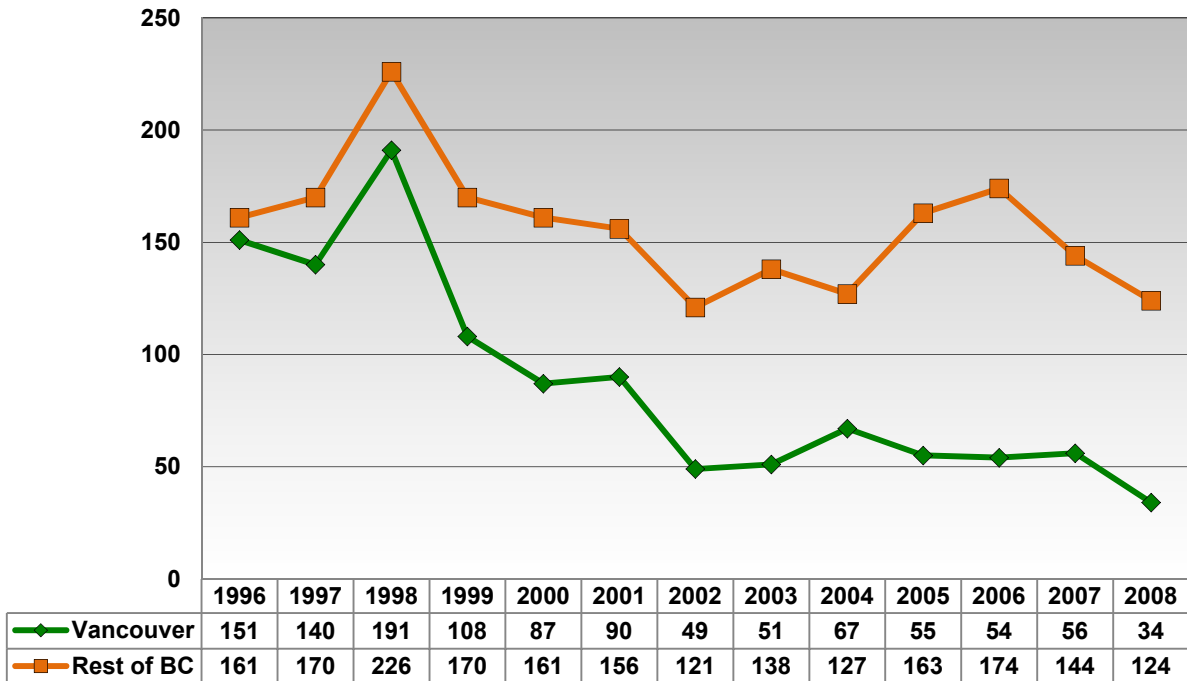
Note: See Vancouver report "Prevalence of Illicit Drug Use" section for methodology.  
SOURCE: British Columbia Alcohol and Other Drug Monitoring Project

**Exhibit 5. High-Risk Survey Results, Injection in Last Year, by Percent, in Vancouver and Victoria: 2008–2009**



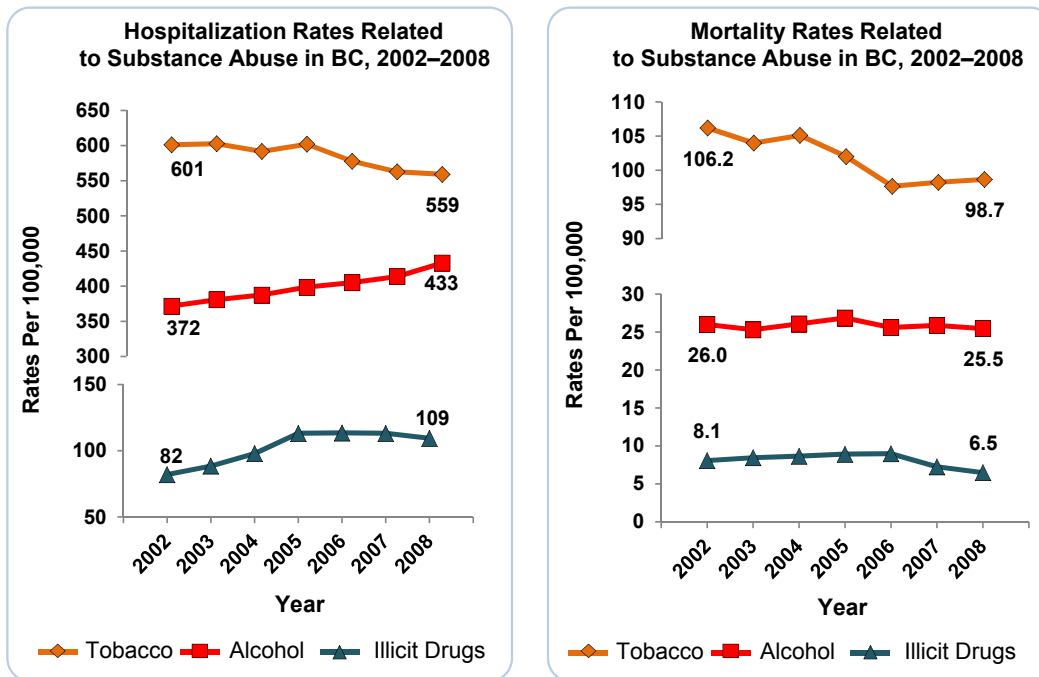
¹IDU=Injection drug user  
 SOURCE: British Columbia Alcohol and Other Drug Monitoring Project

**Exhibit 6. Number of Illicit Drug Deaths, Vancouver Versus the Rest of British Columbia: 1996–2008**



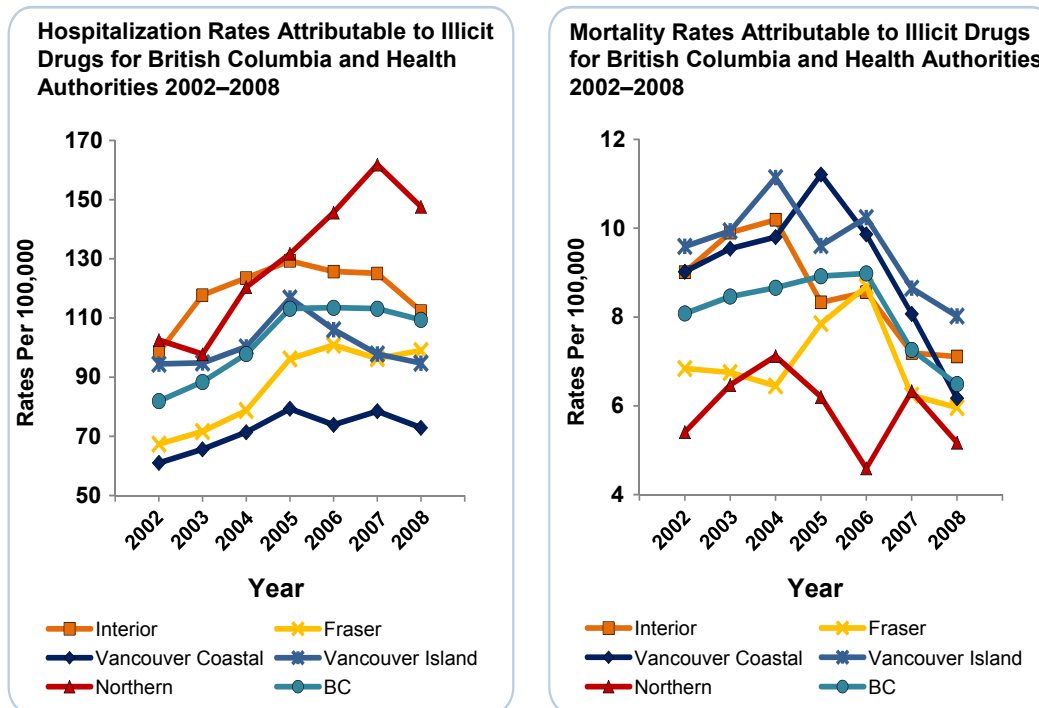
SOURCE: British Columbia Coroner's Service

**Exhibit 7. Hospitalization and Mortality Rates (per 100,000 Population) Attributable to Tobacco, Alcohol, and Illicit Drugs, British Columbia: 2002–2008**



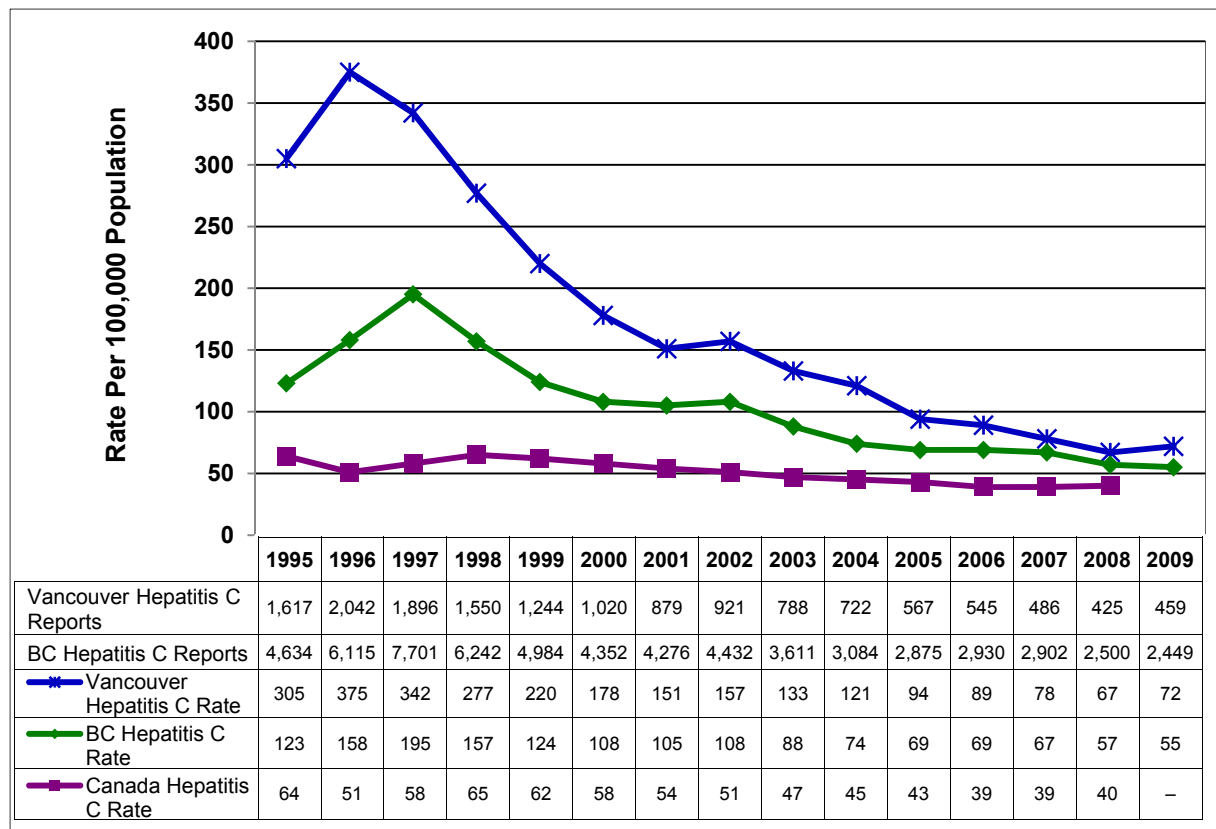
SOURCE: British Columbia Alcohol and Other Drug Monitoring Project

**Exhibit 8. Hospitalization and Mortality Rates (per 100,000 Population) Attributable to Illicit Drugs, by Health Authority, Canada: 2002–2008**



SOURCE: British Columbia Alcohol and Other Drug Monitoring Project

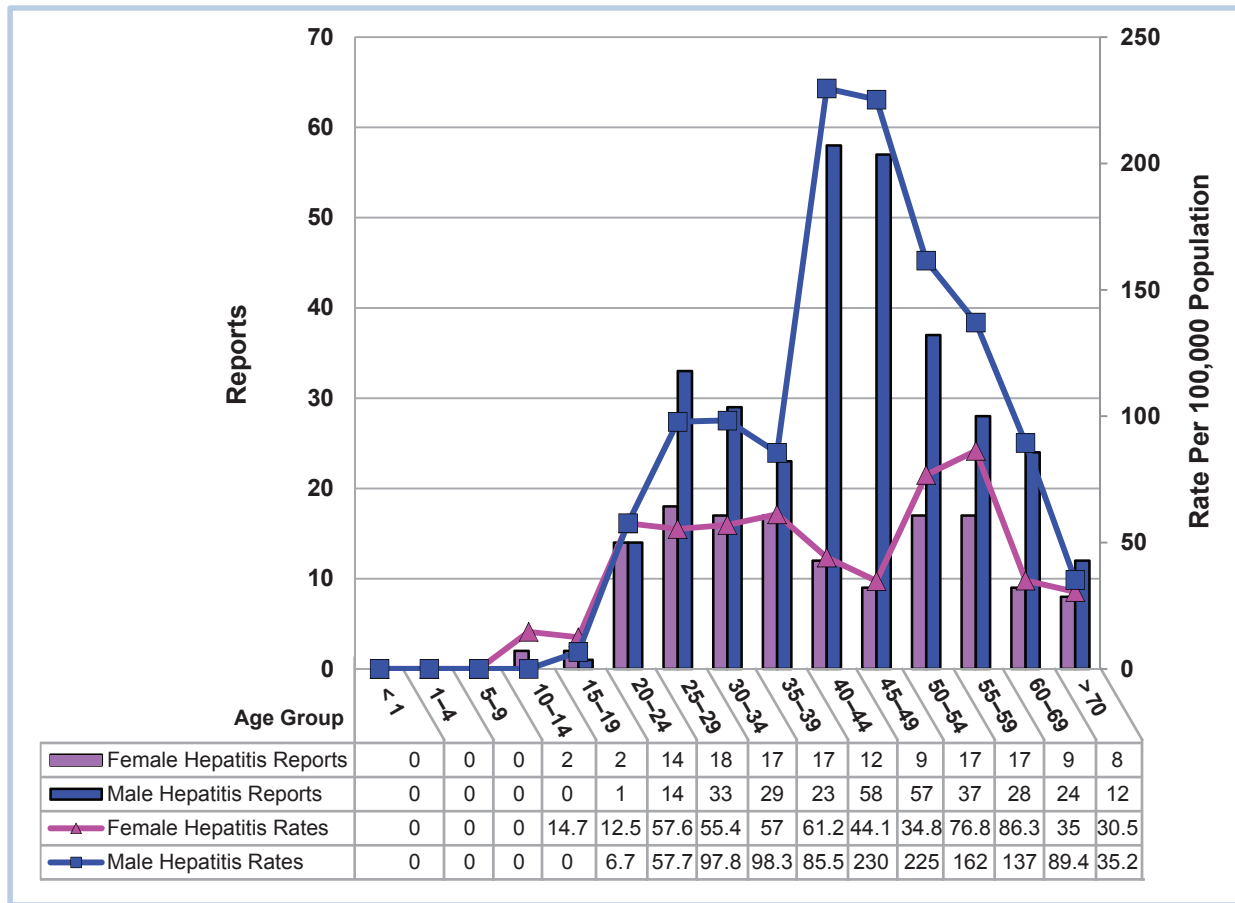
**Exhibit 9. Hepatitis C Virus Reported (Rate per 100,000 Population), Vancouver, BC and Canada: 1995–2009**



SOURCE: British Columbia Integrated Public Health Information System

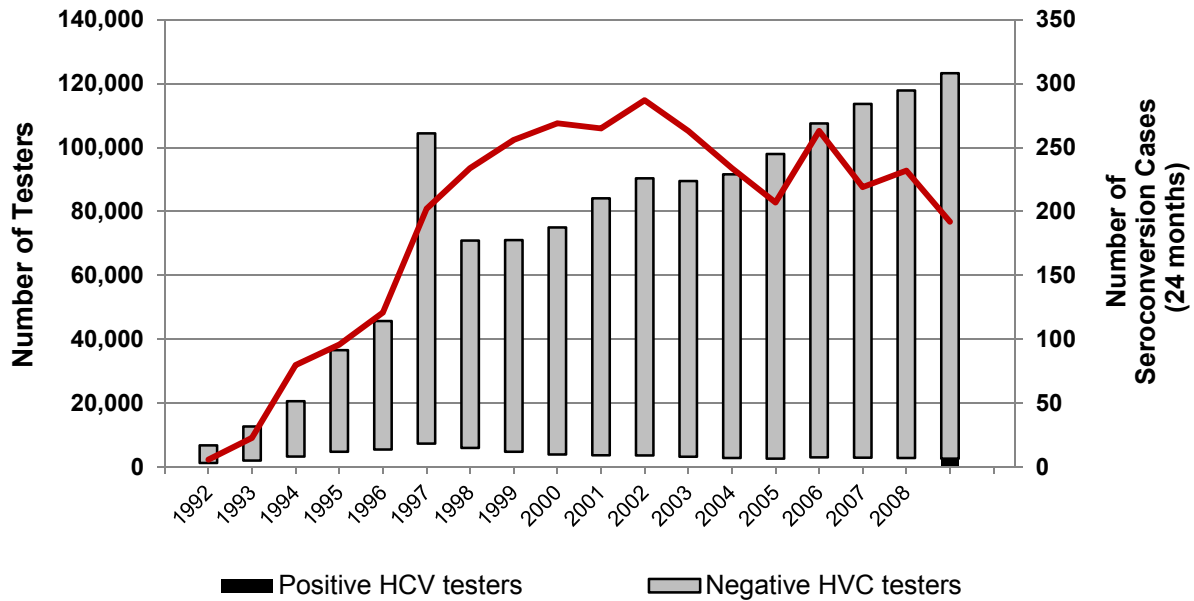


Exhibit 10. Hepatitis C Virus Reported, by Gender and Age Group, Vancouver: 2009



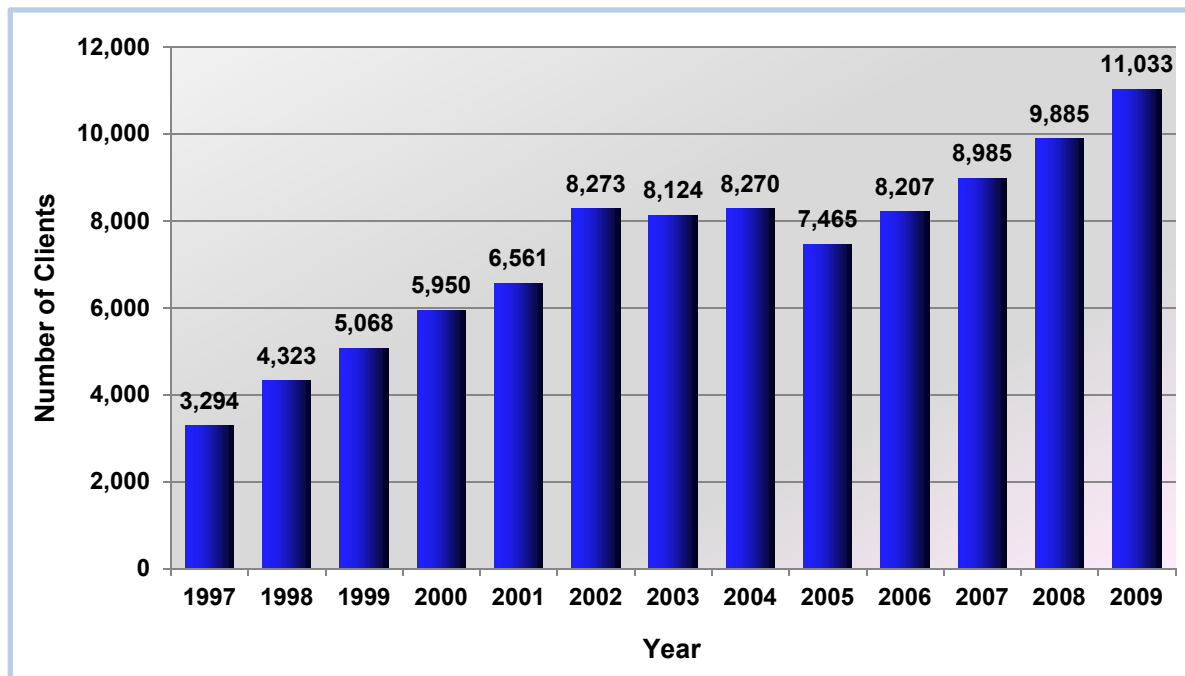
SOURCE: British Columbia Integrated Public Health Information System

**Exhibit 11. Number of Anti-HCV Testers, by Year and 24-month Seroconversion, British Columbia: 1992–2009**



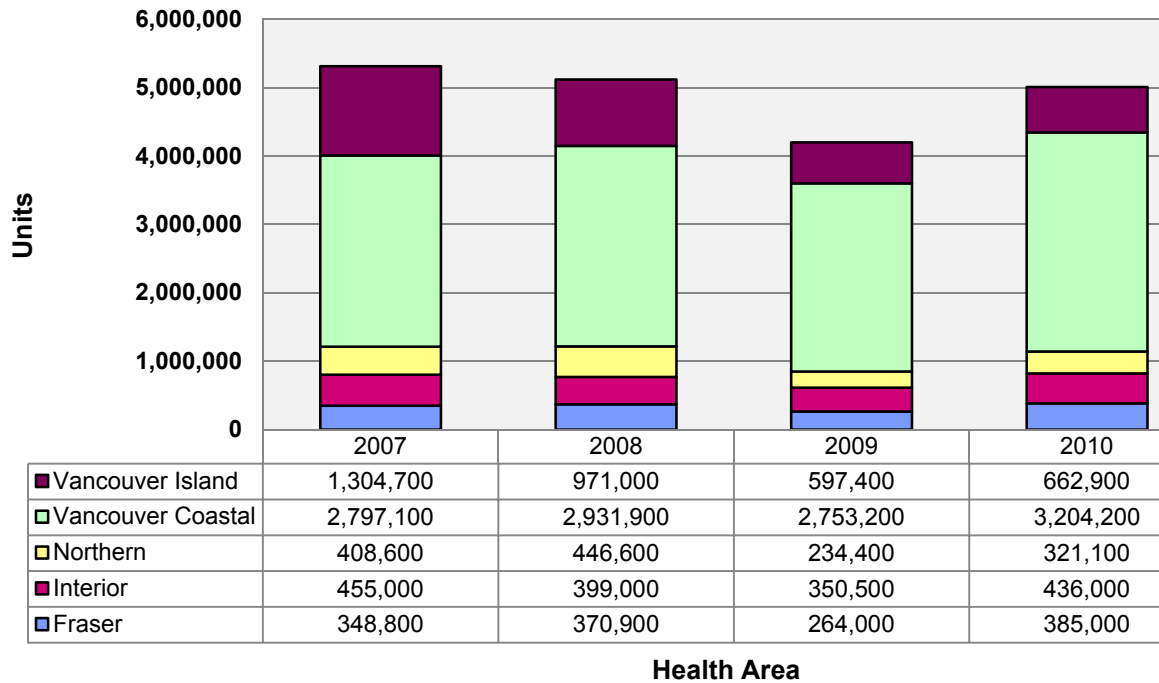
SOURCE: Provincial Public Health Reference laboratory, extracted March 12, 2010

**Exhibit 12. Number of Clients in Methadone Treatment, in British Columbia: 1997–2009**



SOURCE: British Columbia College of Physicians and Surgeons Methadone Program

**Exhibit 13. Needles/Syringe Distribution, by Provincial Harm Reduction Supplies, by Numbers and Year, Select Areas in Canada: FYs 2007–2010<sup>1</sup>**



<sup>1</sup>FY=April 1 through March 31  
 SOURCE: British Columbia Center for Disease Control

**Exhibit 14. Harm Reduction Supplies Distributed in Vancouver, by Fiscal Year<sup>1</sup>: FYs 2006/2007 to 2009/2010**

	2006/2007	2007/2008	2008/2009	2009/2010
Needles/syringes	2, 771, 200	2, 971, 800	3, 110, 300	3, 124, 000
Water vials	1, 840, 000	1, 621, 100	1, 514, 000	1, 687, 000

<sup>1</sup>FY=April 1 through March 31.  
 SOURCE: British Columbia Centre for Disease Control Pharmacy Database

# Substance Use in Mexico—An Epidemiological Update: 2009

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## ABSTRACT

*Mexico has vast experience in basic research, as well as in surveys and specific studies analyzing tobacco, alcohol, and other drug consumption. There is a national observatory managed by the National Council Against Addictions (CONADIC); other national institutions related to the study of problematic drug use collaborate with the observatory.*

*The observatory is formed by the following: (a) the different surveys used in the country, such as household surveys among the population age 12–65, surveys among different levels of school populations, and other surveys with general or specific populations; (b) the Epidemiological Surveillance System in Addictions (SISVEA), which includes information about people who receive treatment for the first time in governmental services (including Youth Integration Centers [CIJ]), the specific report given by Youth Integration Centers, the report from nongovernmental treatment centers, the rates of mortality per drug consumption, and statistics about drug related detentions; (c) State information systems, including reports from justice centers; and (d) different studies with underage working children and users of specific drug types. This paper includes the main results of the National Household Survey of Addictions 2008 (NHSA2008) and findings*

*of school population surveys of 7th–12th graders. The NHSA2008 showed that alcohol was the main consumption problem in Mexico. Additionally, cocaine consumption increased from 1.4 percent in 2002 to 2.4 percent in 2008. Marijuana use also increased. Methamphetamine use was low, although the proportional increase has been significant: in 2002, the consumption was 0.1 percent, and in 2008 the consumption was 0.8 percent. There are regional variations in substance abuse in Mexico. Consumption in the northern region has decreased slightly, while drug use prevalence rose from 3.4 to 5.8 percent in the center and southern regions of the country, particularly in southern urban areas. In the border States, alcohol abuse/dependence was lower than the national average; only the State of Tamaulipas was within the average. The prevalence of drug dependence in the northern border States was above the national average. Chihuahua and Baja California had the highest prevalence rates. Compared with the results of the 2007 Household Survey from the United States (segmented by State), the prevalence reported for all drugs on the northern border of Mexico was lower than the prevalence in the United States. Mexico does not have a national study for the school population in grades 7 through 12. However, systematic surveys have been conducted in several States, particularly in the Capital City. All these surveys found significant increases in the use of alcohol, marijuana, and inhalants. Consumption of alcohol and tobacco was similar between males and females. In the case of illegal and medical drugs, consumption among males was slightly higher. Higher consumption was noted in the most industrialized States, where the difference between males and females was smaller.*

## INTRODUCTION

### Data Sources

The aim of this paper is to show the prevalence and trends of drug use in general and school populations (this report focuses on household and school population studies).

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Mexico has a wide range of studies on drug use in the country, integrated in the Mexican Observatory of Drugs, Alcohol and Tobacco (Villatoro, Medina-Mora, Gutiérrez, et al, 2010). The information that is included at the Observatory is as follows: (a) surveys used in Mexico, such as household surveys of the population between ages 12 and 65, surveys of different levels of the school population, and other surveys of general or specific populations; (b) the Epidemiological Surveillance System in Addictions (SISVEA), which includes information about people who receive treatment for the first time in governmental services (including Youth Integration Centers, [CIJ]), the specific report given by Youth Integration Centers, the report from nongovernmental treatment centers, the rates of mortality per drug consumption, and statistics about drug related detentions; (c) State information systems, including reports from justice centers; and (d) different studies with underage working children and users of specific drug types.

Household studies showed that the prevalence of drug use in Mexico has increased, primarily for alcohol and marijuana. School population studies have also shown increases for these two drugs, along with the use of inhalants, especially in female student populations.

Onset age of substance use has decreased for alcohol and marijuana (close to age 17 in the general population). Onset age of tobacco use has remained stable (close to 17). However, more reports from Health Services mention younger ages for tobacco use.

## Methodology

Indicators used for household and school population surveys can be compared at an international level with those used by the World Health Organization and with studies carried out in the United States (by the Substance Abuse and Mental Health Services Administration [SAMSHA] and Monitoring The Future). In terms of methodology, both kinds of surveys consider the following items.

The last National Household Study in Mexico was conducted in 2008 (SSA, CONADIC,

INPRFM, INSP, 2009), using a random selection by State representation, with almost 1,600 surveys for each State. This study was carried out in both urban and rural populations. The 2002 National Household Study had a similar methodology, including urban and rural populations, and it had regional representation for some indicators. National Household Studies from 1988 and 1998 were conducted only with urban populations with national and regional representation.

It has not been possible to conduct a national study of students for more than a decade. However, several State-level studies have been conducted since 2003 (Villatoro, Gutiérrez, Quiroz, et al, 2007). The last one cited in this report was from the State of Jalisco, whose fieldwork was carried out between February and March 2009 (Chávez, Villatoro, Robles, et al, 2010). All of these studies were conducted at the State level, except the study from the State of San Luis Potosí, which took place only in the municipality of Rioverde.

The school group is considered the unit of selection, allowing a better State representation, considering both urban and rural population areas. Unlike Monitoring The Future, conducted in the United States, which only includes students in the 8th, 10th and 12th grades, these surveys in Mexico consider all grades (7th through 12th).

## DRUG ABUSE PATTERNS AND TRENDS

### 2008 National Household Survey Results

The nationwide lifetime drug use prevalence for males was 9.1 percent; it was 8.8 percent for illegal drugs and 1.3 percent for prescription drug use. Using confidence intervals of 95 percent, the most affected States were located on the Pacific side of the country in the U.S border region. Chihuahua, Tamaulipas, and Baja California had the highest prevalence in the border region. In the south of the country, Quintana Roo and Campeche were above the nationwide prevalence (exhibit 1). The nationwide prevalence rate for drug use in females was similar, except the rates were lower than males—2.6 percent for lifetime

drug use, 1.9 percent for illegal drug use, and 0.8 percent for prescription drugs.

For illegal drugs, the highest prevalence rates for males involved marijuana (7.2 percent), cocaine (4.1 percent), and methamphetamines (0.8 percent). For these drugs, the most affected States were on the Pacific side of the country and the north border region (exhibit 2). The situation was similar for females, but with a lower prevalence of drug use than males. In the States of Sonora and Coahuila, females were below the nationwide prevalence (even though these are border States). However, females were above the average use for methamphetamine in Baja California.

Among males nationwide, 1.0 percent reported last-year drug dependence; for females, the prevalence was almost 0.2 percent. The highest drug dependence for males in border States was found in Baja California, Chihuahua, and Nuevo León. For females, the highest drug dependence rates were found in the Baja California, Chihuahua, Tamaulipas, and Coahuila (exhibit 3). Urban population data, which has been an important part of previous surveys, showed a nationwide increase for any drug use from 5.6 to 6.3 percent, with the most substantial increase in the last 6 years in the southern and middle regions of the country. As for the northern region, the drug use prevalence has been steady. For males nationwide, the drug with the highest increase in use was cocaine, increasing from 2.6 percent in 2002 to 4.7 percent in 2008. However, the most used drug continued to be marijuana. The other drugs remained stable. For females, the highest increase in drug use was for marijuana. Cocaine also increased, but in smaller proportions than males (exhibit 4). For prescription drug use for males nationwide, tranquilizers were the most commonly used (0.8 percent); use of other prescription drugs remained steady among males. For females, there has been a slight decrease in prescription drug use.

The 2002 and 2008 national household addiction surveys included rural populations (20 percent of the country's population). Their drug use rates were lower than those for urban populations, even for alcohol and tobacco rates. Considering

both urban and rural populations, trends between these two surveys were similar to those previously described. For males, the most frequently used drug was marijuana, but cocaine has seen the higher increase; the use of other drugs remained steady. For females, there has been an increase for marijuana and cocaine, almost doubling for use of both drugs. Prescription drug use remained steady for males and decreased slightly for females.

Analyzing the 2007 United States and the 2008 Mexico household surveys, the border region of Mexico has shown lower drug use prevalence than the United States' border States. For alcohol, both binge drinking and abuse/dependence prevalence have a similar pattern along the border States, with increases noted towards the Gulf of Mexico (exhibit 5). As for illicit drug use, Baja California and Chihuahua match with the high drug use of California and New Mexico (exhibit 6). For marijuana and cocaine use, the border State pattern is similar on both sides of the border, except for the State of Sonora, which had low cocaine use (exhibit 7). The drug use dependence pattern was also similar.

## Student Surveys

For alcohol abuse (drinking five or more drinks in a row, at least one time in the last month), student surveys showed that border States had lower proportions than most States, although male and female percentages were similar. The highest alcohol abuse prevalence for border States was in Baja California and Sonora, and the lowest prevalence was in Nuevo León (exhibit 8). For 10th to 12th grade students, alcohol abuse percentages almost doubled; males had the highest illicit drug prevalence in Aguascalientes.

For any illicit drug consumption, males were within the average of other studies. While females in Sonora had a very low prevalence, females in Baja California were on the national average.

Males in the State of Sonora (7.3 percent) and both females and males in Baja California (3.2 and 6.6 percent, respectively) had the highest marijuana use percentages (exhibit 9). As for cocaine use, males in Sonora (7.1 percent) and Baja California

(5.6 percent) had the highest proportions, while females (1.5 percent) were in the mean. Crack use was similar, though with lower prevalence. Inhalant use was in the mean for both males (5.2–5.9 percent) and females (1.5 percent) in both border States. Methamphetamine use had the highest percentage in these two States, with males at 5 percent and females at around 1 percent.

Baja California ranked third for male use of tranquilizers, and females were in the mean. This was the same for amphetamines; Sonora males had higher prevalence, and female use was in the mean. Based on a 1991 survey with the same methodology, illegal drug use increased for both males and females in Baja California. Previously, females showed little drug use, but currently they have high drug use prevalence (except for inhalant use, which has had a decrease in both genders). This situation is similar in Sonora, where all drug use has increased, including inhalants.

## CONCLUSION

Data show that overall drug use in Mexico continued to increase, both in school populations and in the general population. Particularly in household surveys, cocaine and marijuana have had the greatest increases in use. While indicators in the northern portion of the country have remained stable for the last 6 years, prevalence in border States was in most of the cases above the national average, especially in the case of males. The use of pharmaceutical drugs has been reported stable for both males and females.

In school population surveys, the situation is similar, showing increases in most of the drugs, with marijuana being the drug most widely consumed. The presence of methamphetamines was relevant, but it has not affected school student populations in a significant way. The increases in drug use are important, even if consumption levels are lower on the border side of Mexico than in neighboring States in the United States, leading to the need of constant monitoring, especially in the female school population that has reported similar prevalence to those of males.

Despite these trends in the use of drugs, the problem of violence in Mexico is derived from drug trafficking to the northern border, rather than trafficking in the domestic market. The need to address this problem with intelligence services information, closing the sources of money laundering, and binational and international cooperation are elements that should be increased to reduce drug supply in both countries. Additionally, it is important to generate productive employment sources as an alternative to drug production, so that people can have real options to increase their income. This implies the need for real change in Mexico's social policies.

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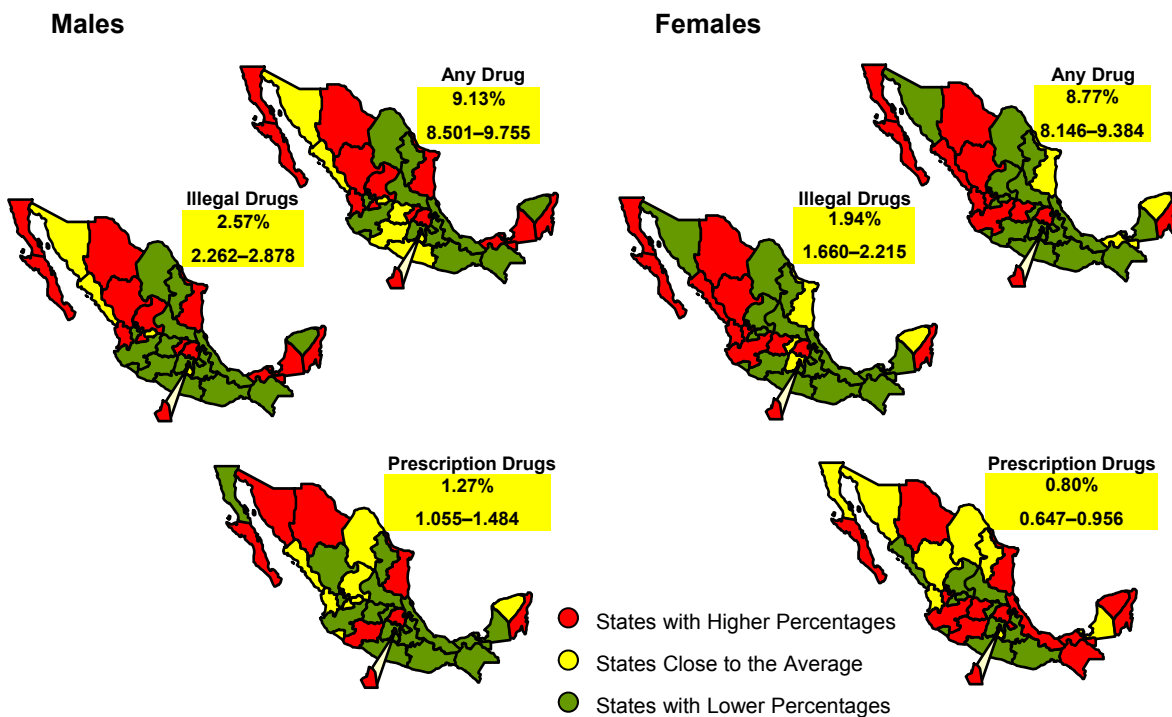
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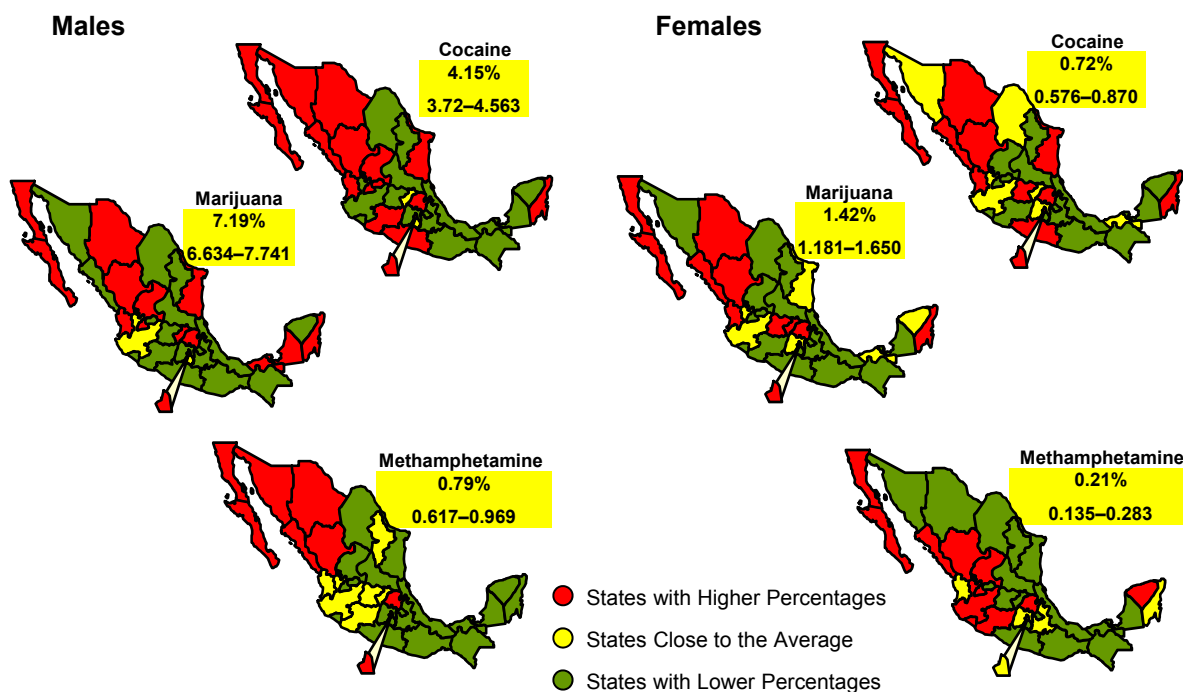


Exhibit 1: Lifetime Drug Prevalence, by State and Gender, Mexico: 2008



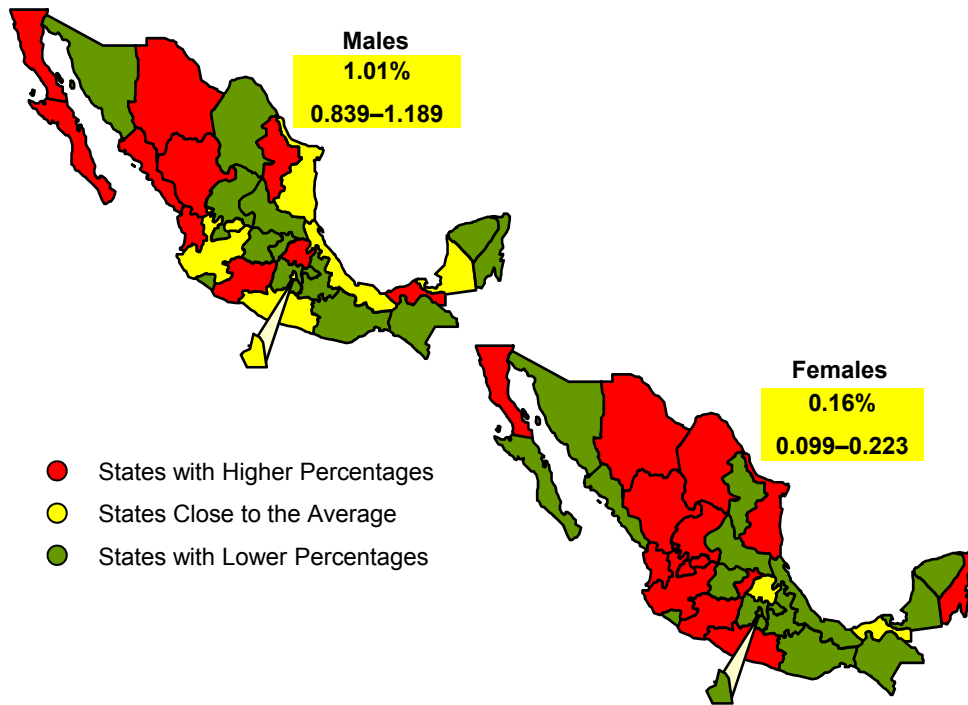
SOURCE: National Household Addiction Survey 2008

Exhibit 2: Lifetime Drug Prevalence for Selected Drugs, by State and Gender, Mexico: 2008



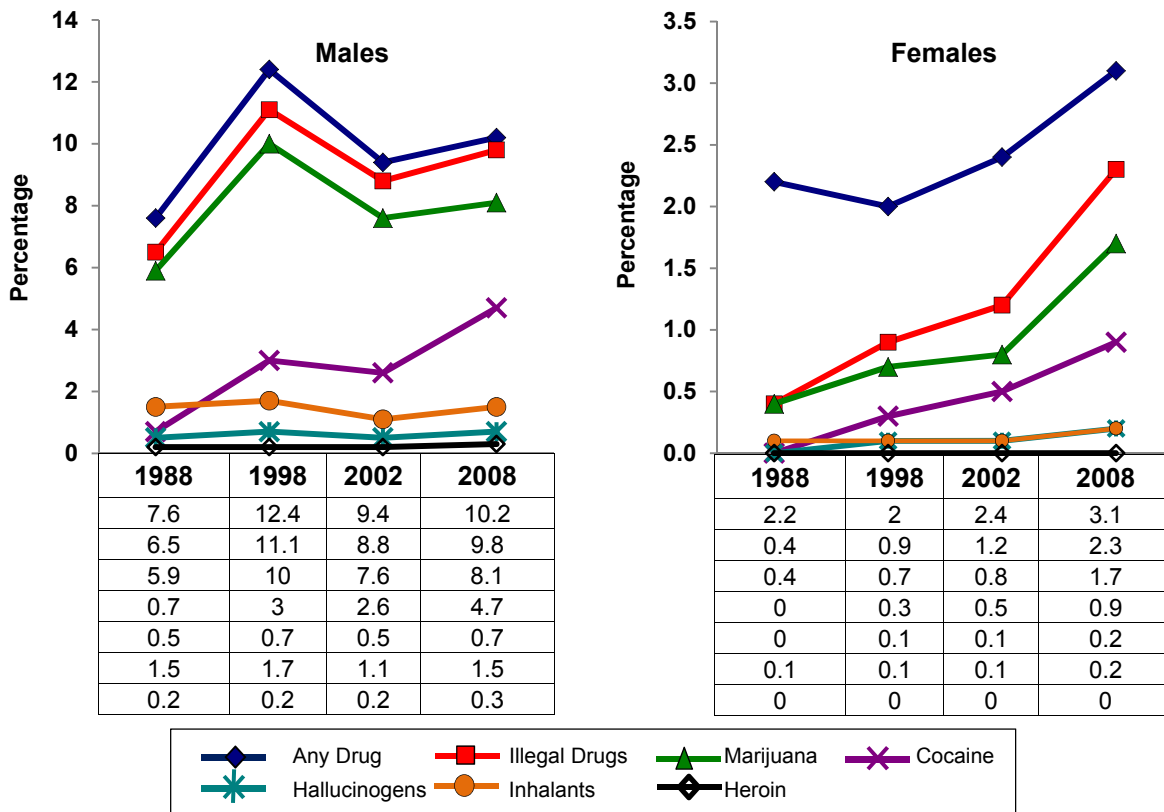
SOURCE: National Household Addiction Survey 2008

Exhibit 3: Last-Year Drug Dependence, by Gender, Mexico: 2008



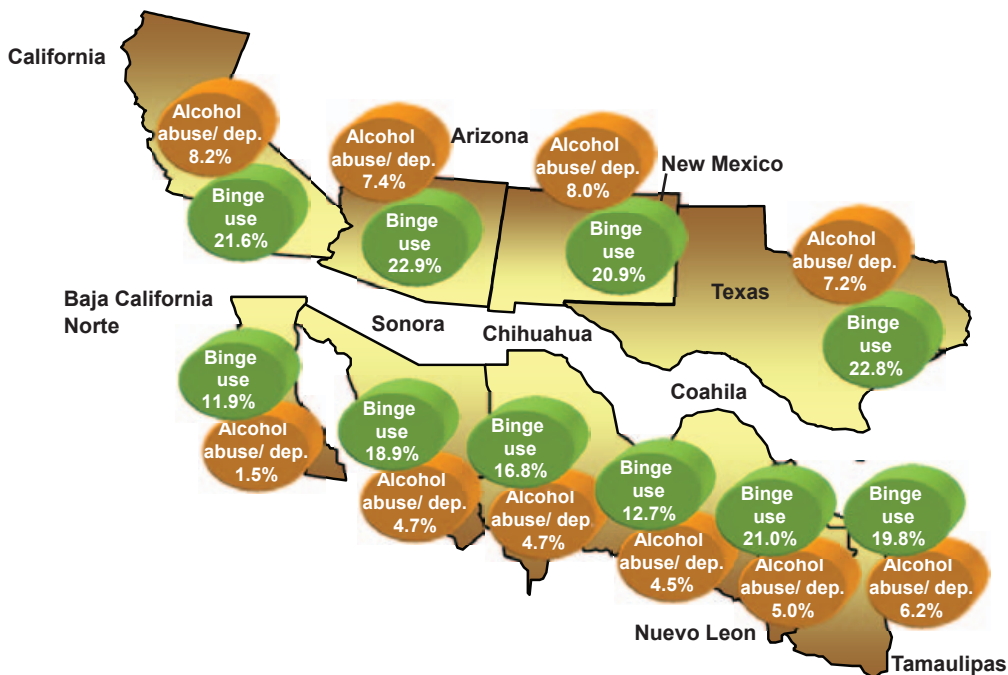
SOURCE: National Household Addiction Survey 2008

**Exhibit 4: Illegal Drug Use Trends for Selected Drugs in Urban Populations, by Gender, Mexico: 1988–2008**



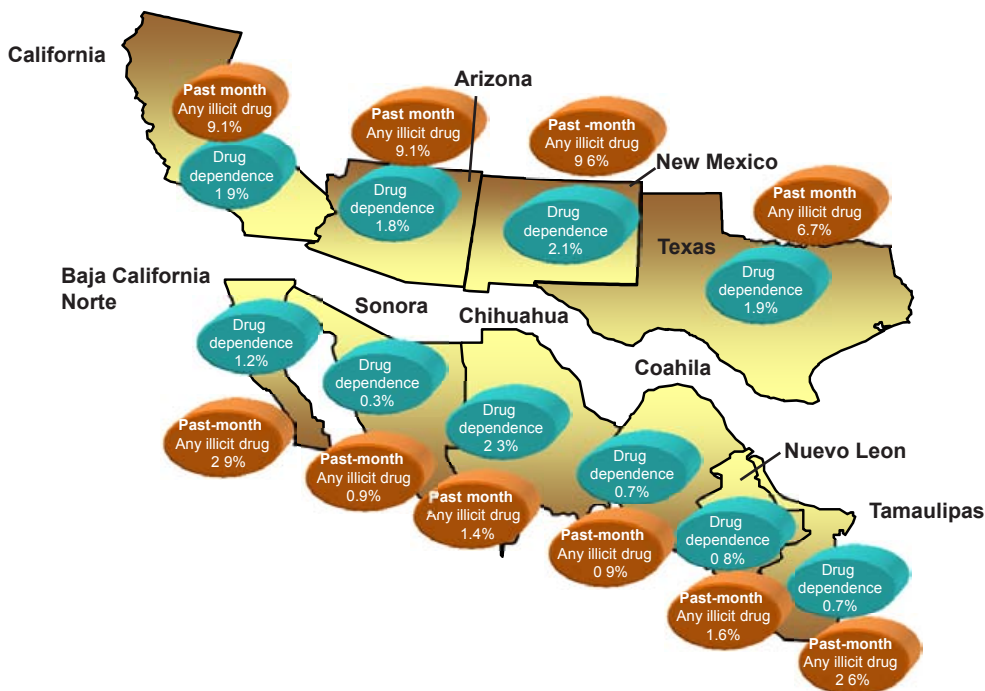
SOURCE: 2008 National Household Addiction Survey

**Exhibit 5: Percentage Binge Alcohol Use and Alcohol Abuse/Dependence, in United States–Mexico Border States: Mexico (2008) and United States (2006–2007)**



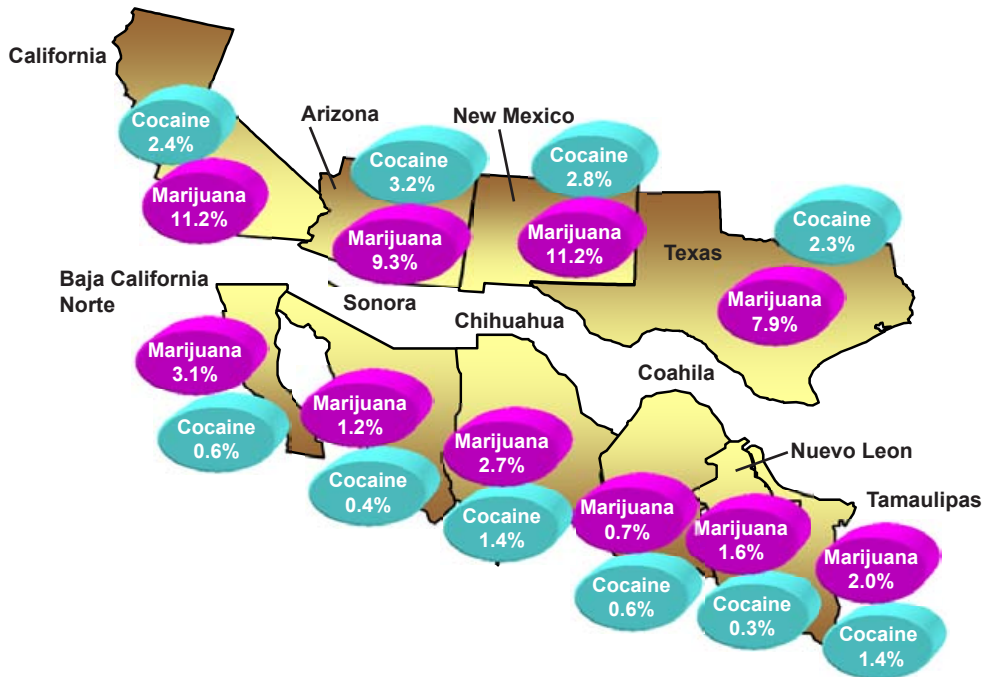
SOURCE: 2008 Mexico National Household Survey; 2006–2007 NSDUH, SAMHSA

**Exhibit 6: Percentage of Past-Month Illicit Drug Use and Drug Dependence, in United States–Mexico Border States: Mexico (2008) and United States (2006–2007)**



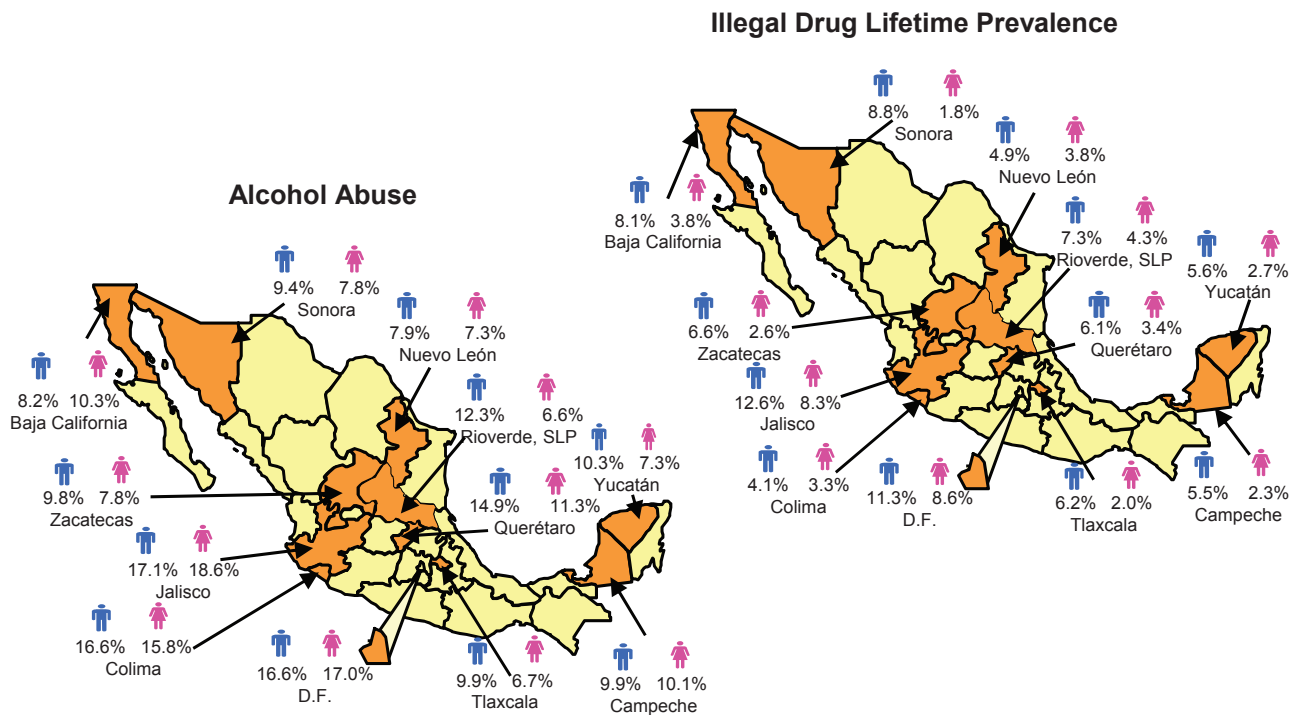
SOURCE: 2008 Mexico National Household Survey; 2006–2007 NSDUH SAMHSA

**Exhibit 7: Percentage of Past-Year Prevalence for Cocaine and Marijuana, in United States–Mexico Border States: Mexico (2008) and United States (2006–2007)**



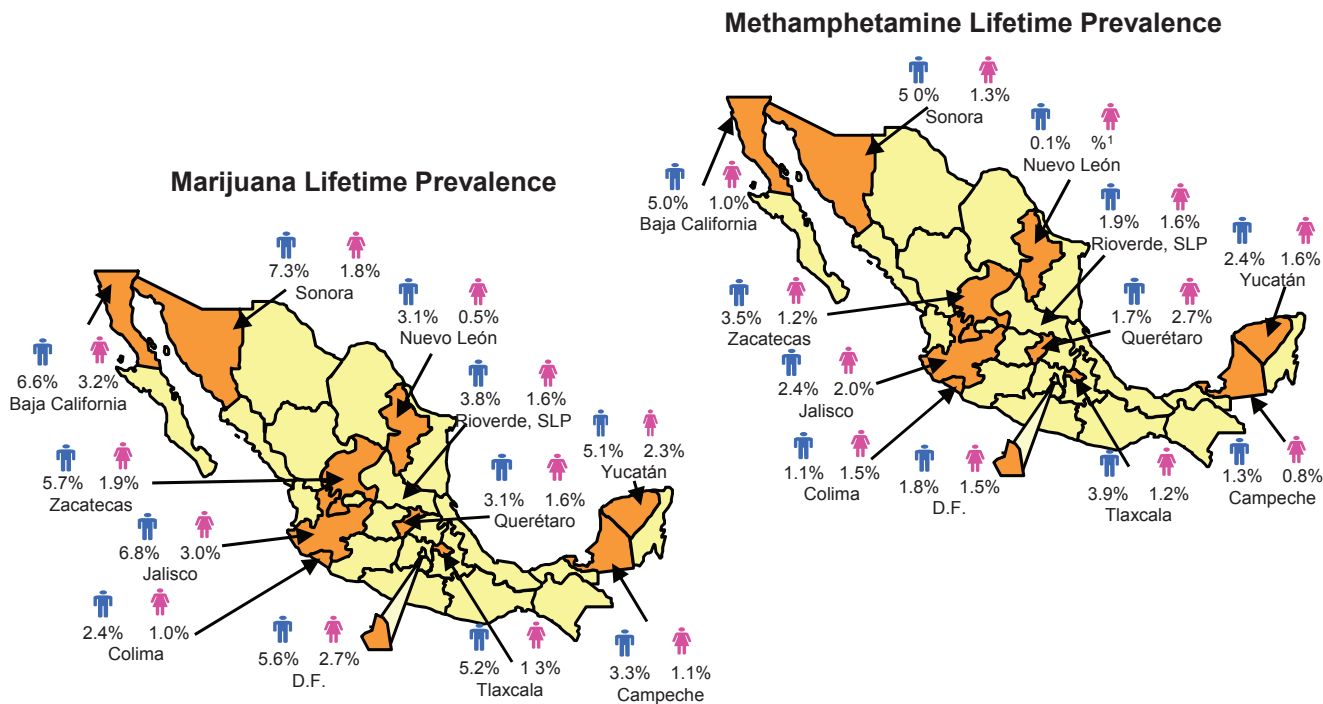
SOURCE: 2008 Mexico National Household Survey; 2006–2007 NSDUH, SAMHSA

**Exhibit 8: School Population Survey 7th to 9th Grade Alcohol and Illegal Drug Prevalence, by State and Gender, Mexico: 2003–2009**



SOURCE: Villatoro y cols. 2003–2006; Velázquez y cols., Colima 2007, Chavez y cols., Jalisco 2010

**Exhibit 9: School Population Survey 7th to 9th Grade Marijuana and Methamphetamine Lifetime Prevalence, by State and Gender, Mexico: 2003–2009**



<sup>1</sup>Consumption is almost nonexistent in this population.

SOURCE: Villatoro y cols. 2003–2006; Velázquez y cols., Colima 2007, Chavez y cols., Jalisco 2010

# Drug Abuse Trends in the Netherlands: 2009

Margriet van Laar, Ph.D.<sup>†</sup>

## ABSTRACT

*Trends in drug use in the Netherlands are reported annually by the Netherlands National Drug Monitor (NDM). Cocaine (particularly snorting) remained the second most popular club drug (after ecstasy) among young adults in nightlife settings, although its use seemed to have reached a saturation point in most parts of the country. Among hard drug addicts, crack remained part of the standard drug repertoire. Data from outpatient addiction care centers showed a sharp rise in the number of primary cocaine clients, from 2,500 in 1994 to 10,000 in 2004, followed by stabilization from 2005 to 2009. Hospital admissions related to cocaine abuse and dependence continued to rise, but increases in the past years were small. Market indicators pointed at a strong increase in the percentage of powders with adulterants (64 percent in 2009, especially levamisole and phenacetin). Purity remained fairly stable since 2004, although a minor drop was found in 2009, while retail prices (corrected for purity) increased. Local surveys and other sources suggested that cannabis use remained generally stable in the population between 2005 and 2009. Yet, cannabis treatment demand at addiction care centers continued to rise (by 23 percent from 2006 to 2007 and by 6.5 percent from 2007 to 2009). Four in 10 cannabis clients had secondary problems with other substances, and one-third were younger than 25. The number of hospital admissions citing cannabis misuse and dependence as a secondary diagnosis was also rising. This trend may be indicative of a rise in the number of problem cannabis users;*

*however, it may equally reflect an improvement in treatment availability (e.g., Web-based interventions), change in referral policies, or a growing awareness of the addictive properties of cannabis, leading users to seek help earlier. In 2007–2009, the last-year prevalence of DSM-IV cannabis dependence in the general population age 18–64 was 0.3 percent. Average tetrahydrocannabinol (THC) content in Dutch marijuana peaked in 2004 (at 20.4 percent) and then slightly decreased/stabilized (at 17.6 percent) in 2010, while prices continued to increase. Amphetamine use was appreciably less popular than cocaine or ecstasy, both in the general population and nightlife settings, except for some user populations in rural areas and hardcore party scenes. The number of amphetamine users seeking help from outpatient addiction care centers tripled, from 482 in 2001 to 1,473 in 2007, and then stabilized in 2008 and 2009. Their share of all drug treatment clients remained minor (4 percent in 2009). The number of people with a primary ecstasy problem seeking treatment from outpatient addiction care centers decreased and comprised less than 1 percent of all drug clients in 2009. Still, ecstasy remained by far the most popular club drug, especially at large-scale dance parties. In 2009, market indicators for both amphetamine and ecstasy suggested a reduction in precursor availability, but in the first two quarters of 2010 the purity of ecstasy and amphetamine samples seemed to return to prior levels. In 2009, 6 percent of the samples sold as amphetamine contained the noncontrolled substance 4-fluoramphetamine, slightly less than in 2008 (10 percent); in the first half of 2010, speed samples with 4-methylamphetamine were also detected. The percent of ecstasy samples containing MDMA (3,4-methylenedioxymethamphetamine) strongly decreased in 2009 (42 percent), and the proportion of samples containing meta-Chlorophenylpiperazine (mCPP) and mephedrone increased. Treatment demand and hospital emergency indicators pointed to an increase in the popularity of GHB (gamma hydroxybutyrate) in some subpopulations. Indicators showed a further*

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*decreasing and aging population of problem opiate users. In 2008, the number of problem opiate users was estimated at 18,000. Overdose mortality remained low, and in Amsterdam all-cause mortality among methadone clients showed a decrease. Human immunodeficiency virus (HIV) and hepatitis C incidence has decreased among (ever) injection drug users.*

## INTRODUCTION

### Background

Trends in drug use are reported annually by the Netherlands National Drug Monitor (NDM), which is a working program of the Trimbos Institute, the national knowledge institute for mental health care, addiction care, and social work. The Institute assumes responsibility for NDM data collection and data reporting tasks, in close collaboration with the Scientific Research and Documentation Centre (WODC) of the Justice Ministry. The NDM was established by the Minister of Health, Welfare, and Sport in 1999. Since 2002, the Ministry of Justice has also supported the NDM.

As one of the national centers of the European Monitoring Center for Drugs and Drug Addiction (EMCDDA), the NDM utilizes data sources and prepares annual epidemiological reports based on EMCDDA guidelines. The NDM is a coordinating body for monitoring substance use by promoting standardized research methods, compiling data from a variety of drug use indicators, and reporting to national authorities and international organizations (e.g., EMCDDA and the United Nations). In addition, based on data information reported, the NDM provides advice on gaps in information needed to monitor substance use problems.

### Data Sources

Data sources used for this report include the following:

- **Prevalence of substance abuse data** came from the National Prevalence Survey on Substance Use, a survey of the general

population, age 15–64 (last data was for 2005; data for 2009 was not available at the time of this report), and comparisons were made with European prevalence data from the EMCDDA. For cannabis, more recent data were available from repeated local surveys and a national survey on mental health disorders in the population age 18–64 (NEMESIS, 2007–2009). School survey data were available for regular secondary education (every 4 years, up to 2007) and secondary special education (in 2008). Moreover, in 2008–2009, a national survey was conducted among (convenience) samples of visitors to clubs and large-scale parties, who were recruited “on the spot.” Trend data (1995, 1998, 2003, and 2008) on substance use among visitors of clubs were available from the Antenna monitor of the University of Amsterdam. A qualitative monitor (Trendwatch) provided data on recent drug use trends from key informants and panel studies.

- **Number of drug users** came from estimation methods (based on EMCDDA protocols) used to assess the numbers of problem hard drug users (e.g., opiates, crack). The Treatment Multiplier method has been used for national estimates of the number of problem opiate users in 2001 and 2008. The capture/recapture method (based on police and registration data) has been used to provide estimates of annual numbers of opiate addicts in Amsterdam (since 1985).
- **Treatment demand data** up to 2009 were provided by the National Alcohol and Drugs Information System (LADIS). These data include the number of primary and secondary substances of abuse reported by unique clients (total number registered and first treatment). In 2009, LADIS recorded 67,500 clients with a primary alcohol or drug problem. Treatment demand data also include primary and secondary diagnosis of abuse/dependence (based on ICD-9 codes) for drug-related admissions to general hospitals (data available up to 2008). Of the total of 1.8 million admissions in 2008, drug abuse or dependence was mentioned 627 times as a primary diagnosis and 2,223 as a secondary diagnosis.



- **Nonfatal emergency data** was based on a monitor on drug-related emergencies in four regions of the country using registrations of ambulance transportation, hospitals, police, and first aid at parties nationwide. As the monitoring started in 2009, no trend data were available. In 2009, 2,525 drug-related emergencies were recorded, of which 60 percent were rated as mild, 28 percent as moderate, and 12 percent as severe.
- **Infectious disease data**, including human immunodeficiency virus (HIV) and hepatitis C incidence data, came from the Amsterdam Cohort Studies on drug users, and treatment (HIV) and notification data (hepatitis B and C).
- **Drug-related death data**, including causes of death and mortality estimations, were based on ICD-10 codes (as of 1996), for underlying causes of death (mainly related to intoxication/overdose) and unintentional, intentional, and undetermined deaths. Among Amsterdam methadone clients, mortality rates included direct (overdoses) and indirect (accidents, lifestyle, and diseases) deaths.
- **Drug price and purity data** include chemical/toxicological analysis of (recreational) drug samples delivered to prevention units of addiction care centers by consumers, and cannabis samples collected in a random sample of coffee shops (Drugs Information and Monitoring System, or DIMS). In 2009, a total of 11,836 drug samples were submitted by consumers to DIMS, which is twice the number in 2008 (6,200). This increase was mainly due to an increase in ecstasy samples, which was associated with the instability of the ecstasy market in terms of reduced purity and increased level of adulterants.

## DRUG ABUSE PATTERNS AND TRENDS

### Dutch Drug Law and Enforcement

In the Netherlands, trade in drugs and possession, sale, and production of all drugs are punishable offences, except for medicinal, veterinary,

instructive, and research purposes. Both policy and legislation (the Opium Act) make a distinction between hard drugs (substances which involve an unacceptable health risk, such as ecstasy, cocaine, amphetamine, and heroin) and cannabis (marijuana and hashish). Hard drugs are listed on Schedule I of the Opium Act and cannabis on Schedule II of the Opium Act. Since December 1, 2008, mushrooms containing psilocin or psilocybin have been placed on schedule II. Following a decision of the Council of the European Union, BZP (1-benzylpiperazine) was placed on schedule II of the Opium Act on August 31 2009. Possession of cannabis for personal use (up to 30 grams) is a minor offence, and is given low priority in law enforcement. Sale of cannabis in small quantities is tolerated in coffee shops under strict conditions. Possession of hard drugs of less than 0.5 grams is a serious offence, but is also a low priority in law enforcement policy. The maximum penalty for committing a drug-related offence on more than one occasion is 16 years' imprisonment and/or a fine of € (euro) 67,000. The fight against drug-related organized crime has been defined a priority area for the police and public prosecutor for 2008–2012, including increased efforts against large-scale production and cultivation of cannabis, the production and trafficking of ecstasy and amphetamine, and the trafficking of heroin and cocaine.

### Cocaine and Crack

The 2005 general population survey, which mainly reaches individuals who are well integrated in society, showed that on the national level the last-year (“recent”) prevalence of cocaine use in 2005 was 0.6 percent in the population age 15–64 and 1 percent among 15–34-year-olds. This is below the European Union (EU) average (1.2 and 2.2 percent, respectively) (exhibit 1). Data for the 2009 survey will be available late 2010.

Cocaine was, however, relatively popular among trendsetting, socially integrated clubbers and party-goers (sniffing the hydrochloride, or HCl, preparation). A convenience sample of club visitors age 15–35 who were recruited on

the spot revealed a last-year prevalence of 10 percent, while an even higher prevalence was found among large-scale dance party visitors (19 percent) (exhibit 2). Trend data from Amsterdam showed that cocaine use among clubbers remained stable between 2003 and 2008.

Smoking cocaine base (“crack”) was still popular among marginalized problem drug users, with some of them also consuming opiates. Uncontrolled obsessive use occurred more frequently in the crack-user group, although treatment demand data suggested that cocaine HCl users also experienced problems. Treatment demand data showed that from 1994 to 2004 the total number of clients entering outpatient treatment for cocaine abuse as a primary problem increased from 2,468 to 9,999 nationwide (exhibit 3). However, between 2005 and 2009, treatment demand by cocaine users remained stable (preliminary figure for 2009: 9,201). For one-half of the clients smoking was the main route of administration; for 48 percent the main route of administration was intranasal use. The number of clients reporting cocaine abuse as secondary problem remained stable between 2001 and 2009 (7,752 in 2009). Thirty percent of all drug clients entering treatment in 2009 had a primary cocaine problem. Of these clients, 18 percent were female, and the average age was 36. Administration of cocaine by injection was rare, reported by 1 percent of the 2009 primary cocaine clients. However, cocaine use was often accompanied by problematic use of other substances, with alcohol the most frequently used other substance.

Cocaine abuse and cocaine dependence do not generally constitute the primary diagnosis at admission to general hospitals. Primary diagnoses are more likely to be attributed to injuries, respiratory disorders, poisonings, and diseases of the cardiovascular system. In 2008, there were 131 hospital admissions for cocaine abuse as the primary diagnosis, slightly more than the 90 admitted in 2006 and 114 in 2007. The number of hospital admissions for cocaine as a secondary diagnosis in 2008 was almost at the level of 2007 (617 and 607, respectively) but showed a slowly increasing longer term trend.

The number of acute cocaine deaths increased between 1996 and 2002, and decreased slightly since 2002. However, numbers remained low throughout this period (less than 34 cases annually and 22 in 2008). These may be a lower estimate, as cocaine use may go unnoticed and be underreported as a cause of death.

In 2009, DIMS received 821 powders that were sold as cocaine. The majority (95 percent) actually contained cocaine, with an average concentration of 49 percent, which is slightly less than in 2008 (55 percent). In 2002, average purity was 69 percent, suggesting a decrease in purity, in spite of some fluctuations. Since 2002, the percentage of cocaine samples containing pharmacologically active adulterants or diluents strongly increased from 15 percent in 2002 to 64 percent in 2009. In 2009, three-quarters (74 percent) of the samples sold as cocaine contained levamisole (compared with 12 percent in 2007 and 31 percent in 2008). There were indications that the average dose was increasing. A quick scan in 2009 by the Coordination Centre on the Assessment and Monitoring of new Drugs (CAM) did not reveal cases of agranulocytosis among cocaine users (CAM, January 2010), but information messages have been sent to relevant (medical) professionals. Over one-quarter (27 percent) of the cocaine samples analyzed contained phenacetin, an analgesic which has been withdrawn from the market because of serious kidney damage in chronic use with high doses. Phenacetin is less commonly detected compared to previous years (exhibit 4). Other substances detected in cocaine powders in 2009 included lidocaine (11 percent of the samples), caffeine (19 percent) and diltiazem, a calcium blocker used for cardiovascular disease (2 percent).

Prices of cocaine HCl at retail level (uncorrected for purity) decreased from the mid-1990s in 2004 and showed relatively minor changes since then (€ 48 per gram in 2009). Prices corrected for purity increased between 2004 and 2009 (€ 96 per gram, not corrected for inflation). A longer term time-series analysis (1992–2008) showed strong association between market indicators (purity, price, and percent of adulterants) and health care data (Brunt et al, 2010).

In 2008, the National Police Force seized 6,760 kilograms of cocaine, but this was probably a minimum amount, as only 21 out of 28 police agencies reported their data in 2008. As cocaine is increasingly smuggled through western Africa to Europe, and EU countries may be more vulnerable to trafficking after cessation of the European internal borders, international cooperation has been intensified to combat drug trafficking over sea and by air (2007 treaty between the Netherlands, Spain, Italy, Portugal, France, and the United Kingdom).

### **Marijuana/Cannabis**

Cannabis was still the most commonly consumed illicit drug in the Netherlands (exhibit 1). In 2005, last-year prevalence of cannabis use was 5.4 percent among the population age 15–64 and 9.5 percent among 15–34-year-olds, compared with EU averages of 6.8 percent (age 15–64) and 12.5 percent (age 15–34). Several repeated local surveys suggested that prevalence of cannabis use in the general population remained stable between 2005 and 2008. Moreover, another recent national survey (data collected from 2007 to 2009) on mental disorders in the general population age 18–64 (NEMESIS 2) revealed a last-year prevalence of 6.5 percent, suggesting no major changes in cannabis use. Prevalence of cannabis use among pupils from regular secondary education showed a decreasing/stabilizing trend between 2003 and 2007. However, a national survey in 2008 has also identified high risk groups, for example of pupils in certain special schools (with learning difficulties and psychiatric problems) and pupils in residential youth care.

LADIS data showed a steady increase in the number of clients with a primary cannabis problem applying for treatment (exhibit 3). Their number increased from 3,432 in 2001 to 8,533 in 2009. From 2006 to 2007, a strong increase of 23 percent was recorded, and between 2007 and 2009 a further increase of 6.5 percent was recorded. The number of clients with a secondary cannabis problem also increased, from 3,300 in 2001, to 5,940 in 2008, but leveled off in 2009 (5,824 clients). In 2009,

4 in 10 cannabis clients had secondary problems with other substances, and one-third was younger than 25. The number of hospital admissions citing cannabis misuse and dependence as a primary diagnosis remained low (57 cases in 2008). However, hospital admissions for which cannabis use disorders were the secondary diagnosis increased, from 249 in 2001 to 476 in 2008 (up 19 percent from 2007 to 2008). The growing treatment demand related to cannabis use may be indicative of a rise in the number of problem cannabis users. However, it may equally reflect an improvement in treatment availability, change in referral policies, or growing awareness of the addictive properties of cannabis, leading users to seek help earlier. In 2007–2009, the 12-month prevalence of DSM-IV cannabis dependence was 0.3 percent (95 percent confidence interval 0.1–0.5 percent), which was about 5 percent of the 12-month users. Trend data were not available.

Since 1999, the Trimbos Institute has monitored the THC (tetrahydrocannabinol) content of cannabis. Samples of different cannabis products (approximately 1 gram each) are regularly procured from a random sample of 50 coffee shops and then chemically analyzed. Between 2000 and 2004, the average percentage of THC in Dutch marijuana (samples sold as most popular) increased progressively from 9 to 20 percent (exhibit 5). This relatively high THC content was probably due to highly professional cultivation methods. However, a decrease/stabilization in THC content has been reported since then, to 15 percent in 2009. Preliminary figures show that average THC concentration in 2010 was somewhat higher (17.6 percent), which might be due to the transition to a new laboratory. During the whole monitoring period no differences were found in THC content between types of Dutch marijuana sold as “most popular” and types sold as “most potent.” In 2010, the THC concentration of imported marijuana was 7.5 percent, and for imported hashish it was 18.6 percent (preliminary data).

At the same time, between 2006 and 2010 the average price of Dutch marijuana slowly increased, from € 6.2 per gram to € 8.1 per gram in 2009,

remaining at this level in 2010. Price increases were stronger for Dutch marijuana types sold as most potent (€10.5 per gram in 2009 and € 10.1 per gram in 2010) (exhibit 5).

These trends might be related in part to the intensified law enforcement in the area of marijuana cultivation, making it more difficult to obtain marijuana with a good quality standard in Dutch coffee shops. However, while law enforcement efforts did not cease, prices remained stable in 2009 and 2010.

## Amphetamines

In 2005, the last-year prevalence of amphetamine use in the general population age 15–64 was 0.3 percent and 0.7 percent for 15–34-year-olds, which was below European averages (0.5 and 1.1 percent, respectively) (exhibit 1).

Among young people visiting clubs and parties, amphetamine use was more prevalent compared to the general population, but this stimulant remained appreciably less popular than ecstasy and cocaine. A convenience sample of club visitors age 15–35 who were recruited on the spot revealed a last-year prevalence of amphetamine use of 6.3 percent (exhibit 2). A higher percentage was found among large-scale dance party visitors (11 percent). Qualitative data from key informants suggested that amphetamine use was relatively popular in rural regions of the country, where it may function as a cheap substitute for cocaine, and in some “hard core” dance scenes.

The number of amphetamine users seeking treatment in outpatient addiction care centers tripled from 2001 (482) to 2007 (1,473), and remained at this level in 2008 and 2009 (1,446 clients in 2009). Their share of all drug clients remained minor (4 percent) (exhibit 3). Approximately 22 percent of the amphetamine clients were female. The average age was 29.

Purity of amphetamine powders delivered by consumers to the DIMS decreased in the course of 2008 and in 2009, but in the last quarter of 2009 purity had returned to prior levels. In the first quarter of 2008, the average concentration was 34 percent, as in previous years. In the fourth quarter of

2008, the average purity was 19 percent, returning again to 35 percent in the fourth (which was present in 80 percent of all speed powders). The highest concentration of caffeine was measured in the first quarter of 2009, returning to 34 percent in the fourth quarter of 2009. Possibly the temporary reduction in purity of amphetamine was related to the reduced availability of the precursor BMK (Benzyl methyl keton).

In 2009, 6 percent of the samples sold as amphetamine contained the noncontrolled substance 4-fluoramphetamine, which was lower than in 2008 (6 percent). In the first quarter of 2010, 4-MA (4-methylamphetamine) was detected in several samples of speed powders.

Regarding drug seizures in 2008, approximately 1,112 kilograms of amphetamine (more powder than tablets) and 20 liters of amphetamine oil were seized in the Netherlands. This was less than in 2007, but trends cannot be determined reliably due to incompleteness of the registration.

## Ecstasy

Ecstasy was the only drug with use rates in the Netherlands well above the European (weighted) average. In 2005, last-year prevalence of ecstasy use was 1.2 percent among the population age 15–64 and 2.7 percent among 15–34-year-olds, compared with EU averages of 0.8 percent (age 15–64) and 1.6 percent (age 15–34) (exhibit 1). Whether changes in 2009 in the ecstasy market have affected use levels is not known. Qualitative studies suggested that users did not radically change their use pattern, although other responses have been reported (e.g., increased testing and temporary reduction or cessation of use or switching to other drugs). Ecstasy remained by far the most popular club drug (cannabis not included) among large-scale dance party visitors (last-year prevalence of 31 percent) and clubs and discotheques (16 percent) who were interviewed in the second half of 2008 and first half of 2009 (exhibit 2).

Treatment demand related to ecstasy use at addiction care centers remained low in the past decade and further decreased in 2009 (exhibit 3). In 2009, ecstasy clients accounted for less than 1

percent of all drug clients in treatment. The absolute number of primary clients was 146. The number of clients registered with a secondary ecstasy problem was higher, at 426 in 2009. Their average age was lowest of all categories of drug clients (27 years).

Until 2008, number of seizure, low prices (average of € 2.8 per pill), and high purity for ecstasy suggested wide availability. In 2007, 79 percent of the pills sold as ecstasy contained only MDMA (3,4-methylenedioxyamphetamine) or a like substance, and 12 percent contained MDMA plus another substance. However, in the course of 2008 and in 2009, purity of ecstasy pills delivered by consumers and sent to the laboratory for chemical analysis strongly decreased. The average MDMA concentration decreased from 85 milligrams in the first quarter, to 69 milligrams in the last quarter of 2008, and 66 milligrams in 2009. The proportion of pills sold as ecstasy which contained MDMA decreased, from 91 percent in 2007, to 82 percent in 2008, and only 58 percent in 2009. Data for the first two quarters of 2010 (up to June) suggested a recovery of the market. The most common adulterants in ecstasy pills were mCPP (meta-Chlorophenylpiperazine) (21 percent in 2009) and mephedrone (4-methylmethcathinone) (between 2 and 8 percent of the ecstasy pills per month). The increase in MDMA dose and reduction in proportion of ecstasy samples with adulterants (especially mCPP and mephedrone) for January–June 2010 point to a recovery of the ecstasy market.

In 2008, the National Police Force reported the seizure of 85 kilograms (powder), 250,220 tablets, and 300 liters (oil) of ecstasy. This was less than in 2007, but trends cannot be determined reliably due to incompleteness of the registration. Seizures of precursors were also low in the past years. Moreover, the number of reports of dismantled production locations and waste dumpings related to synthetic drugs decreased (21 and 36, respectively in 2008).

These market indicators may point to the reduced production and supply of ecstasy in 2009, possibly related to a decreased availability in the precursor PMK (piperonyl-methylketon), used for producing ecstasy.

## GHB

Indicators point to a low prevalence of GHB (gamma hydroxybutyrate) use in the general population in the Netherlands, but to a strong increase in the popularity of this drug in sub-populations. In 2008–2009, last-year prevalence in a convenience sample of large-scale party visitors was 7.8 percent, and 3.4 percent among club visitors (exhibit 2). However, GHB was also used in other settings outside the nightlife scene, with a relatively high popularity in less urbanized regions. Between 2003 and 2008, the estimated number of hospital emergencies related to the use of GHB increased fourfold (980 in 2008). Moreover, ambulance transportation services in Amsterdam reported an increasing number of acute GHB emergencies, from 76 in 2005 to 170 in 2009. Also in 2009, 19 percent of the emergencies reported in four regions in the Netherlands (police, hospitals, and ambulance) and from first aid post on parties were related to GHB (compared with 35 percent for cannabis and 20 percent for ecstasy). Symptoms were rated as severe in 26 percent of the cases.

In 2009, 286 GHB users were registered at addiction care centers for dependence problems, which were usually quite severe. Sudden cessation of use has been associated with the incidence of convulsions and psychosis, for which administration of traditional medication is often not suitable. Therefore, experiments have been set up for detoxification with medical GHB. This increased popularity is hard to explain. Contributing factors may be the low price of GHB, easy route of administration (like alcohol), lack of a hangover effect, and wide availability (and self-made). Users tend to underestimate the dependence potential of GHB and do not see it as a serious risk.

## Heroin/Opiates

According to the 2005 National Prevalence Survey, the lifetime (0.6) and last-year prevalence rates (0.0) for heroin were the lowest for the drug categories included in the survey. Using the treatment multiplier method, in 2008, the number of

problem opiates users (mainly heroin users who also consume crack and other substances) was estimated at approximately 18,000. This is much lower compared with the estimate in 2001, but figures were not fully comparable due to differences in methodology.

In Amsterdam, using the capture/recapture method, the estimated number of opiate addicts has strongly decreased since the late 1980s (over 8,000) to 2,900 in 2007. No further drop was seen in 2008 and 2009. Opiate clients remained the largest group of drug clients treated in the Netherlands addiction treatment facilities over the past 12 years (38 percent in 2009). However, the total number of primary opiate clients decreased, from almost 18,000 to 12,390 in 2009 (exhibit 3). Treatment demand by new opiate clients (first treatments) was low at 5 percent of all registered opiate clients in 2009. The opiate clients were the oldest of all types of drug users entering treatment in 2007. Their average age was 44. Only 5 percent of the opiate clients were younger than 30. Approximately 20 percent of the opiate clients were female. Most opiate users were somehow in contact with treatment services and/or social services. Most opiate addicts were polydrug users. Several sources (notification and registration data, Amsterdam cohort studies) indicated that the incidence of HIV and hepatitis B and C was low, although prevalence may have been quite high due to earlier acquired infections.

In 2008, a total of 129 acute drug-related deaths were reported in the Netherlands. There were 10 drug-related deaths per million inhabitants age 15–64, which was quite low compared with many other EU member states. In 2008, 52 cases were recorded with opiates as the underlying cause. Eighty percent of the opiate overdose victims

recorded between 2005 and 2008 were older than 34, compared with 39 percent in the years 1990–1994; this is consistent with the overall aging trend among opiate users. In Amsterdam, all-cause mortality among methadone clients has declined in the past years, in spite of an aging population (exhibit 6). The standardized mortality ratios gradually decreased (4.5 in 2009). Most likely, the majority of injecting drug users who were at highest risk of dying had died already, and current risk ratios tend to decrease to the level among noninjecting drug users.

The National Police Force reported that in 2008, approximately 800 kilograms of heroin were seized. In addition, about 4,560 methadone tablets were seized. Due to incompleteness of the registration these figures probably represent an underestimation.

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**Exhibit 1: Last-Year Prevalence of Drug Use Among the Dutch Population (2005) and European Union (EU) (Weighted Average), by Age: 2001–2008**

	Cannabis (%)		Ecstasy (%)		Cocaine (%)		Amphetamine (%)	
	15–64	15–34	15–64	15–34	15–64	15–34	15–64	15–34
Netherlands (2005)	5.4	9.5	1.2	2.7	0.6	1.0	0.3	0.7
EU-Average (2001-2008)	6.8	12.5	0.8	1.6	1.2	2.2	0.5	1.1

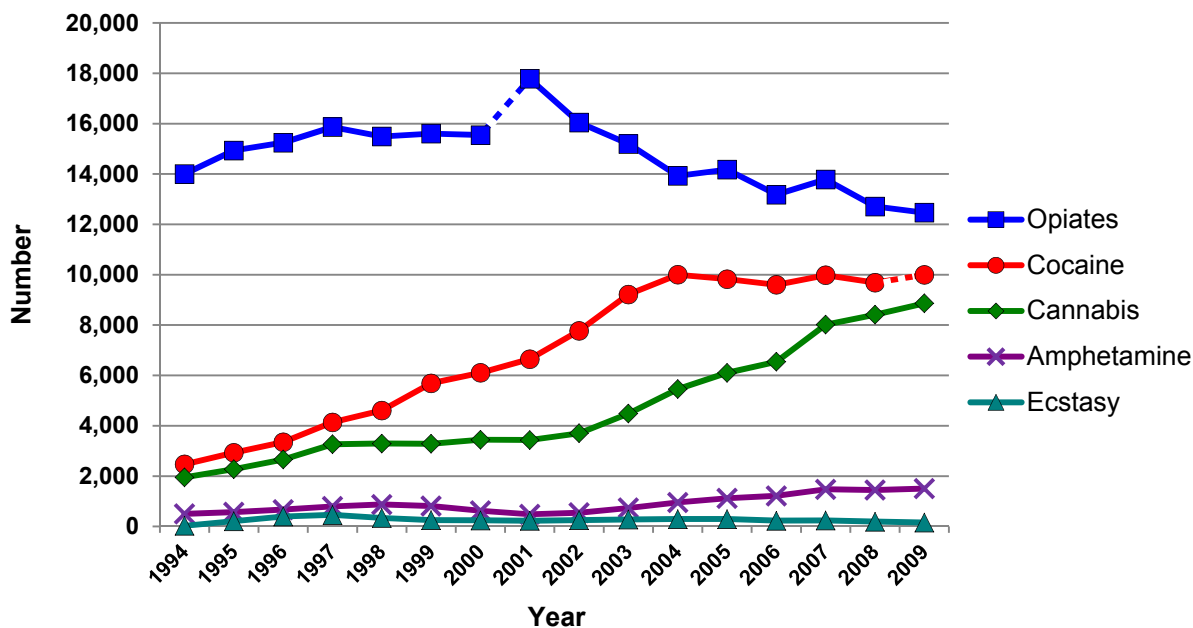
SOURCES: National Prevalence Survey (Rodenbrug et al., 2007), EMCDDA (2009)

**Exhibit 2: Last-Year and Last-Month Prevalence of Drug Use Among Visitors of Large-Scale Parties and Clubs, Age 15–35, by Percentage, Amsterdam: 2008–2009**

	Visitors of Dance Parties (n=920)		Visitors of Clubs and Discotheques (n=2,044)	
	Last-Year (%)	Last-Month (%)	Last-Year (%)	Last-Month (%)
Alcohol	96.5	90.5	96.4	92.0
Tobacco	59.1	50.9	57.1	50.5
Cannabis	45.6	30.3	39.0	23.7
Ecstasy	30.8	23.5	15.6	8.5
Cocaine	18.7	11.8	10.0	4.8
Amphetamine	11.0	7.3	6.3	3.4
GHB	7.8	4.6	3.4	1.7
Ketamine	3.8	1.2	2.1	0.6
Hallucinogenic mushrooms	7.9	1.1	5.9	0.8
LSD	1.3	0.8	1.3	0.4
Basecoke (“crack”)	0.6	0.2	0.4	0.1
Heroin	0.1	0.1	0.3	0.1

SOURCE: Trimbos Institute/University of Amsterdam (Van der Poel et al., 2010)

**Exhibit 3. Number of Clients at Addiction Care Centers With a Primary Drug Problem, for Selected Drugs, Netherlands: 1994–2009<sup>1</sup>**



<sup>1</sup>Figure for cocaine in 2009 is preliminary. The increase in 2001 in the number of opiate clients is due to an increased coverage (participation of the Municipal health Service of Amsterdam).

SOURCE: National Alcohol and Drugs Information System (LADIS)

**Exhibit 4: Percentage of Cocaine Powders with Adulterants<sup>1</sup>, the Netherlands: 1999–2009**

Year	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
(n=)	(108)	(80)	(143)	(175)	(217)	(343)	(588)	(593)	(683)	(637)	(821)
Adulterants	%	%	%	%	%	%	%	%	%	%	%
Phenacetin	2	1	2	7	17	36	38	48	41	33	27
Lidocaine	4	15	14	9	8	5	5	8	6	6	11
Procaine	1	5	3	2	4	5	3	12	8	4	6
Caffeine	4	3	6	5	4	6	8	11	16	16	19
Hydroxyzine	-	-	-	-	-	1	1	2	4	3	-
Diltiazem	-	-	-	-	-	1	2	7	12	6	2
Levamisole	-	-	-	-	-	1	1	5	12	31	74

<sup>1</sup>One or more adulterant can be present in one powder. Data refers to powders that were sold as cocaine and analysed in the laboratory.

SOURCE: Drugs Information and Monitoring System (DIMS), Trimbos Institute



**Exhibit 5: Concentration of THC and Price (Euro) per Gram of Dutch Marijuana/Cannabis: 2000–2010**

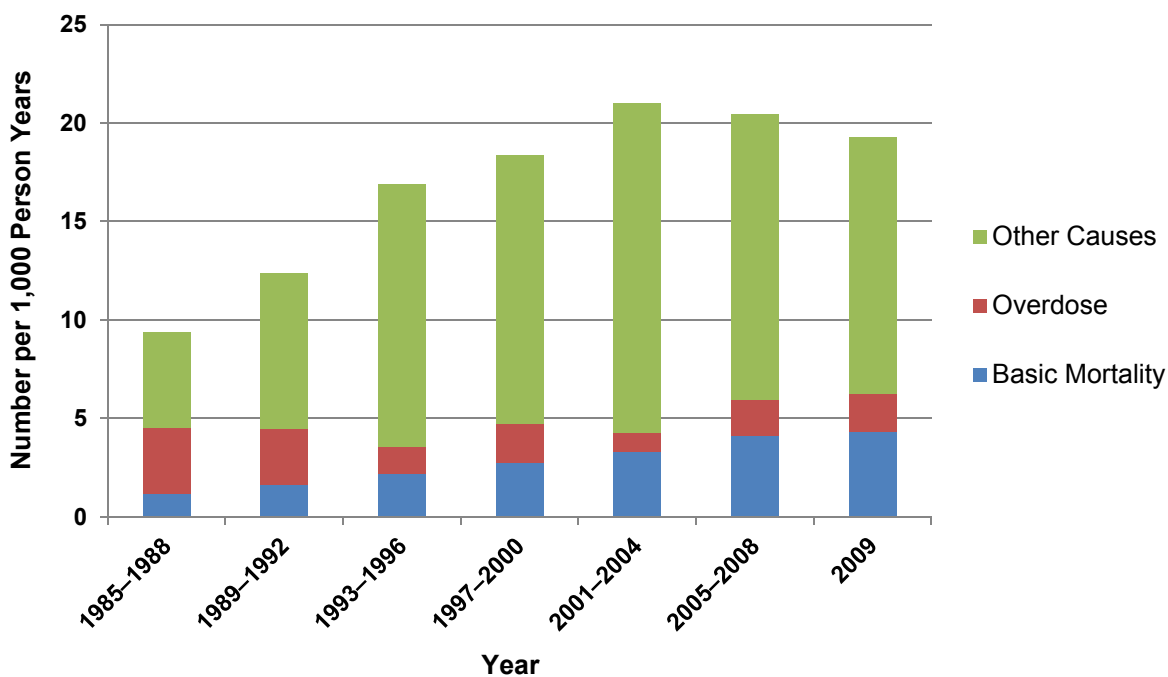
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010 <sup>1</sup>
% THC - most popular	8.6%	11.3%	15.1%	18.1%	20.4%	17.7%	17.5%	16.0%	16.4%	15.10%	17.60%
% THC - most potent	NA <sup>2</sup>	11.2%	17.2%	19.1%	21.0%	19.0%	18.9%	16.5%	17.7%	15.70%	17.90%
Price most popular (€ per gram)	5.8	5.9	6.1	6.4	6.0	6.2	6.2	7.3	7.7	8.1	8.1
Price most potent (€ per gram)	NA	5.9	6.6	7.0	6.3	6.6	7.0	8.5	9.8	10.5	10.1

<sup>1</sup>Preliminary figures.

<sup>2</sup>NA=Not available.

Note: Prices and THC concentration are given for samples sold as “most popular” and “most potent.”

SOURCE: Drugs Information and Monitoring System (DIMS), Trimbos Institute

**Exhibit 6: All-Cause Mortality Among Methadone Clients in Amsterdam: 1985–2009.**

SOURCE: Municipal Health Service, Amsterdam (Marcel Buster)

## Drug Use in Europe, Trends and Developments—Update: June 2010

Paul Griffiths, M.Sc.<sup>†</sup>

Established in 1993, the European Monitoring Centre for Drugs and Drug Addiction (EMCDDA) acts as the central reference point for drug information in Europe. Data are collected through a network of national focal points (Reitox) located in all 27 European Union (EU) member states, as well as Norway (by special agreement) and the candidate countries Croatia and Turkey, using a set of structured tools. Areas of interest for monitoring activities span epidemiology and health statistics, activities in drug demand and drug supply reduction, and policy and legal developments.

Domestic marijuana/cannabis production remains an area of growing concern, and efforts have been made to better coordinate interdiction measures. Europol has opened an analysis work file on this topic, and some countries have developed specific programs to introduce new and innovative approaches to detection. Concerns mostly focus on high-potency cannabis grown indoors under intensive conditions. This kind of production is particularly associated with organized crime gangs and can have a negative impact on communities in which it takes place. However, despite increasing reports of domestic production in the EU, imported cannabis resin still represents around 90 percent of all cannabis seizures; the annual total currently stands at around 1,000 tons. Overall, the number of drug law offences for cannabis use or possession for use continues to rise. This is against a background where surveys of both the general and youth population suggest that overall levels of cannabis use are falling, although slightly. This change appears to be more pronounced in younger

age cohorts and in higher-prevalence countries. New treatment demands for cannabis have been rising for some time, but appear to have levelled off, and are falling in the most recent data available. This declining trend is not observable in some Eastern European countries, where prevalence levels continue to rise.

Cocaine indicators show no consistent picture, making an overall assessment difficult. The quantity of cocaine seized annually continues to fall and has dropped to 67 tons. However, the number of seizures continues to increase, and prices are declining. Survey data show increases in use in some western countries, but elsewhere in Europe the situation appears stable. In terms of the total number of users, cocaine remains the second most commonly consumed illicit drug in the EU. However, there is considerable heterogeneity in consumption patterns between countries. High prevalence rates are reported in a restricted group of countries (Spain, the United Kingdom, Italy, Ireland, the Netherlands, and Denmark), while elsewhere levels of use appear low. In Eastern Europe, in particular, cocaine use remains uncommon, although concerns exist that increased trafficking through this part of Europe may have an impact on local consumption patterns. Crack cocaine use remains rare and is geographically limited to a few locations within the inner cities of a small number of countries (principally the United Kingdom).

Until 2004, heroin indicators pointed to a declining opioid problem in the EU, with evidence of an aging population increasingly entering treatment services. The picture was somewhat different in Eastern European countries, where heroin problems developed later. The current situation is difficult to interpret. The number of seizures has increased but not the quantity seized within the EU. However, this may to some extent be explained by rising seizures in Turkey, reflecting greater collaboration between Turkish officials and law enforcement agencies in other parts of Europe. Treatment demand data and the number of drug law offences related to heroin are now both increasing. Although data on drug-related deaths and treatment entries still overall point to an aging

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population of heroin consumers, some countries report pockets of younger heroin users. Notably, for the first time in Europe, heroin snorting (sniffing) has been reported among some—mostly younger—age cohorts in a few countries. HIV infections related to injection drug use remain low in Europe and continue to fall. Injecting levels also appear to be declining, with less than one-half of new heroin users entering treatment reporting drug injecting as a route of administration.

There has been a decline in the quantity of MDMA (3,4-methylenedioxymethamphetamine, or ecstasy) seized and a decrease in the seizure of precursors. The price of ecstasy and the number

of drug law offences related to the use of the drug have also fallen. Precursor availability may be an important issue, as mCPP (meta-Chlorophenylpiperazine) and other piperazines are increasingly found in tablets sold as ecstasy.

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# The European Union Early Warning System on New Synthetic Drugs—Current Situation and Future Challenges

Paul Griffiths, M.Sc.<sup>†</sup>

This report provides an overview of the European Union (EU) early warning system on new psychoactive substances. The early warning system (EWS), or more formally the technical activities necessary to support the implementation of European Council Decision 2005/387/JHA, provides a fast-track system for detection, identification, and initial assessment of new psychoactive substances.

The European Council Decision provides for scientific risk assessment and possible control of new substances that pose a similar risk to drugs scheduled under the United Nations Drug Control Conventions. This makes the EWS somewhat different than most activities conducted on drug issues at the European level because a formal legal basis exists for activities at the EU level. Therefore, the system's identification and assessment process can result in a legally binding decision to place a substance under control across the EU member states.

The technical implementation of the system is the shared responsibility of the European Monitoring Centre for Drugs and Drug Addiction (EMCDDA) and Europol. The European Medicines Agency (EMA) is also a key partner for this work. The system has four distinct levels. The first of these is the EWS itself, in which information from forensic science and other sources are shared between member states. When merited, a second phase of work is triggered and an assessment report is prepared and presented to the European

Council. This can result in a decision to request a formal risk assessment exercise conducted under the auspices of the EMCDDA scientific committee. The resulting report is submitted back to the European Council, and the Council is then required to make a decision on whether control measures are merited. An example of this process is the ongoing study of the synthetic cathinone, mephedrone (4-methylmethcathinone), which was scheduled for a formal risk assessment on July 15, 2010.

In the 12 years that the EWS has been operational, more than 120 substances have been officially notified. This figure is rising, and in 2009, 24 new psychoactive substances were officially notified. As of June 2010, six new substances had been reported, with another six in the pipeline (i.e., identified but in the process of being reported). Recent developments include the emergence of new, smokable herbal products laced with synthetic cannabinoids (spice products) and the growing popularity of various synthetic cathinones (such as mephedrone). Overall, there is evidence of a new emergence of “designer drugs,” now described as “legal highs.” This involves the appearance of a large number of new unregulated synthetic compounds marketed on the Internet as “legal highs” or “not for human consumption” and specifically designed to circumvent existing drug controls.

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# BZP Use in New Zealand: Patterns of Use, Harms, and Policy Response

Chris Wilkins, Ph.D.<sup>†</sup>

BZP (1-benzylpiperazine) was the principal ingredient in a range of recreational stimulants legally sold in New Zealand from 2000 to 2008. The legal market for BZP in New Zealand was estimated to have an annual turnover of \$24 million (in New Zealand dollars) in 2004. During that time there were no restrictions on the sale and use of BZP in New Zealand.

Concern about the health risks of BZP began to emerge in New Zealand around the mid-2000s. BZP has effects similar to a low potency amphetamine (i.e., approximately 10 percent the potency of dexamphetamine). One hundred milligrams of BZP has duration of action of between 6 and 8 hours. Researchers conducted a prospective study of people presenting to a hospital Emergency Department with BZP problems over a 6-month period in 2005. They found that of the 61 patients who presented with BZP problems, 14 experienced seizures and 2 patients were admitted to an Intensive Care Unit.

The New Zealand government responded in 2005 by restricting the sale and supply of BZP to those age 18 and younger, banning the advertisement of BZP in major media, and prohibiting the giving away of BZP as part of promotional campaigns. BZP retailers attempted to self-regulate the market further during this time by restricting the potency of pills sold. However, this industry self-regulation was largely found to be ineffective as the self-imposed restrictions on the potency of pills were not strict enough given that users often consumed more than one BZP pill on a typical occasion.

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A national household survey conducted in 2006 found 15 percent of New Zealanders age 13–45 had used BZP in the previous 12 months. BZP use was highest among young people; 49 percent of males and 28 percent of females age 20–24 had used BZP in the past year. While most users reported fairly minor problems from BZP use, such as insomnia (50 percent of last-year users), some users reported potentially more serious physical problems, such as vomiting (12 percent), inability to urinate (10 percent), chest pains (4 percent), and seizures (0.8 percent). Users also reported a range of psychological problems from BZP use, such as visual hallucinations (9 percent), paranoia (8 percent), and depression (8 percent). Two percent of last-year users were classified as dependent on BZP. Being female, using marijuana/cannabis and other drugs concurrently with BZP, taking large quantities of BZP, and taking 5-HTP recovery pills at the same time as BZP were all independent predictors of experiencing adverse problems from BZP use.

BZP was eventually prohibited in New Zealand in April 2008. A follow-up national household survey was conducted in 2009 to measure the impact of the BZP ban. It found a considerable decline in the last-year prevalence of BZP use among the population age 13–45, a decrease from 15 percent in 2006 to 3 percent in 2009. The follow-up survey also found the availability of BZP declined, and the price of BZP increased in 2009, compared with 2006.

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