

Youth and Drugs: The Case for Infrastructure and Targeted Strategies in the Nation's Capital

**Submitted to the District of Columbia Department of Health
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EXECUTIVE SUMMARY

Youth Drug Use and Its Consequences

This report is the third annual District of Columbia (District, DC) epidemiological profile of alcohol, tobacco, and other drug abuse prepared by the District of Columbia Epidemiological Outcomes Workgroup (DCEOW). Unlike previous profiles, this report focuses primarily on youth. It was designed to comply with the federal prevention logic model and to support the DC Department of Health's Addiction Prevention and Recovery Administration's (APRA) movement toward assessing the District's prevention programs by monitoring priority risk factors and targeted outcomes. The report includes consequence and consumption data monitored since the inception of the DCEOW, as well as the results of an in-depth analysis of the 2007 DC Youth Risk Behavior Survey (YRBS). Because this analysis utilizes survey data, all of the percentages pertaining to the YRBS are approximations. Please see the appendix of this report for additional information regarding survey data.

Our analysis of these data reveals key priorities for DC officials regarding the use of alcohol, tobacco, and other drugs by DC youth. By utilizing and assessing the risk and protective factors found in this profile, DC will have a valuable tool for planning and monitoring the District's substance abuse prevention programs.

Consequences (Sources: Metropolitan Police Department, 2007 DC YRBS, 2005–2006 National Survey on Drug Use and Health (NSDUH))

- Based on data assessed in this profile, arrests, driving under the influence, and abuse/dependence are key consequences of DC youth alcohol and other drug abuse that need to be addressed by substance abuse prevention programs.
- Young black males in the District were arrested more often than other youth. Rates of reported driving under the influence of alcohol were similar for males and females age 16 or older.
- There were 3,266 juvenile arrests in 2007; nearly one in ten was drug related.
- Approximately two-thirds of the students age 16 or older who drank and drove in the past month also binge drank in the past month (having five or more drinks on the same occasion on at least one day in the past month).
- Between 900 and 1,800 DC youth age 12 to 17 abused or were dependent on alcohol in the past year; 1,000 to 2,100 abused or were dependent on illicit drugs.

Consumption (Sources: DC Pretrial Services Agency, 2007 DC YRBS, 2005–2006 NSDUH)

- DC youth used alcohol and marijuana more frequently than any other drug.
- One-quarter to one-third of DC household residents age 12 to 20 drank in the past month.
- More than half (54%) of juvenile arrestees tested positive for marijuana in 2007 and 2008 (January–October).
- Approximately one-third of DC public and charter high school students (herein referred to as high school students) drank alcohol in the past month (current drinkers), while 20% used marijuana (current marijuana users).
- Approximately one in four high school students had their first drink of alcohol before age 13 (early drinkers), and one in ten first used marijuana before age 13 (early marijuana users).
- Males were more likely than females to be current marijuana users; females were more likely than males to be current drinkers.
- Trends in alcohol and illicit drug use by DC high school students have been fairly stable in recent years; tobacco use decreased significantly between YRBS survey year 2003 and YRBS survey year 2007.

Drug Accessibility (Sources: DC Department of Health, 2007 DC YRBS)

- As of 2007, there were 1,127 cigarette retail licenses and 1,476 alcohol retail licenses issued in DC.

- DC high school students typically purchased cigarettes in convenience stores, supermarkets, discount stores, or gas stations, although males were more likely than females to obtain cigarettes by purchasing them at a commercial retailer.
- Approximately one-third of high school students who drank in the past month were given alcohol to drink by someone else; females were more likely than males to be given alcohol, while males were more likely than females to purchase alcohol.
- Males were more likely than females to be offered, sold, or given an illegal drug by someone on school property in the past year (approximately 30% of males and 21% of females).

Risk and Protective Factors Influencing Youth Drug Use

Risk Factors (Source: 2007 DC YRBS)

- Overall, male high school students were more likely to have carried a weapon in the past month or to have gotten in a physical fight in the past year than female high school students.
- As high school students move through grades, their tendency to have gotten in a physical fight in the past year decreased.
- Students in the 12th grade were the most likely students to have carried a weapon on school property in the past month.
- By the 12th grade, more female than male students had had sex with one or more persons in the past three months, but males were more likely to have had sex before age 13. Ninth and 10th grade males were also more likely than their female counterparts to have had sex under the influence of alcohol or other drugs.
- A greater percentage of current drinkers or marijuana users and of early drinkers or marijuana users engaged in other risky behaviors than those who were not current or early users.
- Males were more likely than females to be early drinkers or early marijuana users.
- Approximately two-thirds of students engaged in both past month bingeing and sex with one or more persons in the past three months. Males were more likely than females to have binged in the past month and to have had sex in the past three months.
- Early drinkers age 16 or older were nearly four times more likely to drink and drive, and two to three times more likely to drink, binge, or smoke marijuana in the past month than those who were not early drinkers. Male early drinkers age 16 or older were as likely as female early drinkers age 16 or older to drink and drive in the past month.
- Early marijuana users were more than 10 times more likely to use other illicit drugs (cocaine, heroin, methamphetamine, or ecstasy) later in adolescence than those who were not early marijuana users. Male early marijuana users were more likely than female early marijuana users to have ever used these drugs.

Protective Factors (Source: 2005–2006 NSDUH)

- A greater percentage of DC residents age 12 to 17 perceived a moderate or great risk in smoking one or more packs of cigarettes a day than in binge drinking or using marijuana once or twice a week.
- More than three-quarters of residents age 12 to 17 disapproved of someone their age smoking one or more packs of cigarettes everyday or drinking alcohol nearly everyday; more than 72% disapproved of someone their age using marijuana once a month or more.
- Between 49 and 62% of residents age 12 to 17 spoke with at least one of their parents about the dangers of alcohol, tobacco, or drug use in the past year.

Implications for Policy

The data presented in this report support a strong case for infrastructure and targeted strategies, as well as focused prevention programs in the District. Alcohol and marijuana are the most frequently used drugs by DC youth. Key consequences of alcohol and other drug use are arrest, driving under the influence, and abuse/dependence. Early use (before age 13) of both alcohol and marijuana increases the likelihood that DC youth may ever use drugs or engage in other risky behaviors such as drinking and driving. In general, male high school students were more likely than female high school students to be early drinkers or early marijuana users and to engage in other risky behaviors. Although most DC teenage residents disapproved of someone their age smoking one or more packs of cigarettes a day, having one or two drinks of alcohol nearly everyday, or using marijuana once a month or more, they perceived a greater risk in smoking one or more packs of cigarettes a day than binge drinking once or twice a week.

Additional research should be conducted to better understand the scope of the above issues. For instance, current survey data do not adequately capture emerging trends. Consequently, qualitative research, such as regular interviews with key leaders and focus groups, should be conducted on a regular basis to ensure that emerging trends are identified and addressed by prevention programs in a timely fashion. Additional research (e.g., interviews with users) and methods such as geo-coding licit drug purchases and illicit drug markets and conducting alcohol retailer compliance checks will provide valuable information about the accessibility of drugs and the risk and protective factors of substance use affecting DC youth.

To address these issues and delay the onset of alcohol or marijuana use, prevention programs should be identified and implemented to focus on:

- Educating youth (particularly males) about the risks of alcohol or marijuana use while allowing for the inclusion of information about other drugs as needed;
- Reducing impulsive and aggressive behavior by youth while increasing social competence;
- Educating retailers, youth, and parents/guardians about alcohol and tobacco sales laws (e.g., straw purchases, fake IDs);
- Educating youth (particularly males) and parents/guardians about the dangers of early drinking and early marijuana use, and
- Supporting and encouraging parents/guardians to talk to their youth regularly, and to set clear rules about the use of alcohol, tobacco, and other drugs.

INTRODUCTION

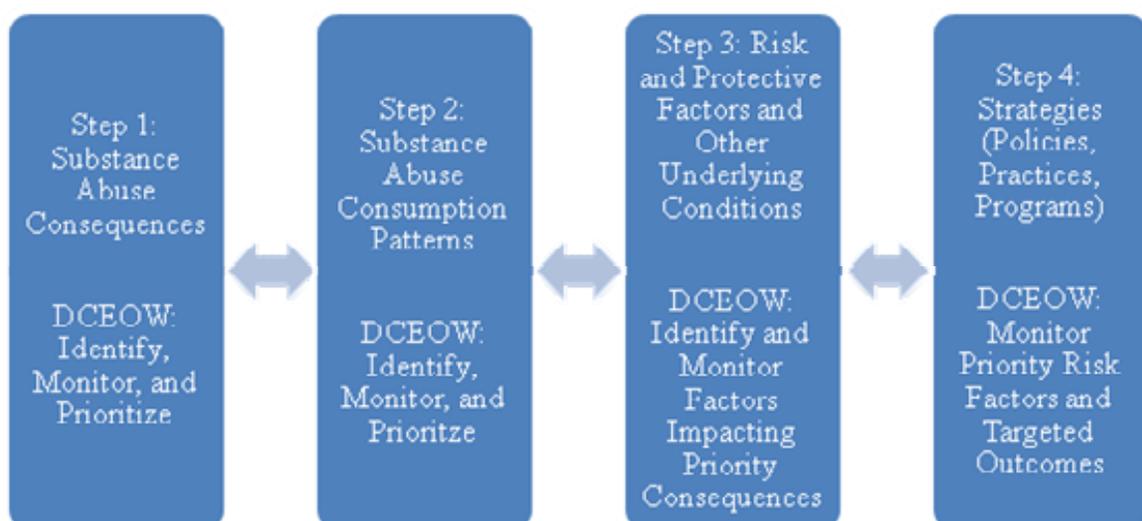
With funding from the Substance Abuse and Mental Health Services Administration's (SAMHSA) Center for Substance Abuse Prevention (CSAP), the District of Columbia (DC, District) convened the DC Epidemiology Outcomes Workgroup (DCEOW)—a multi-year project responsible for developing an empirically based system for monitoring alcohol, tobacco, and other drug abuse in the District. The goal of this monitoring system is to identify substance abuse prevention program priorities and monitor the impact of these programs. The project is coordinated by staff at the DC Department of Health's Addiction Prevention and Recovery Administration (APRA) and the University of Maryland's Center for Substance Abuse Research (CESAR). This report summarizes accomplishments and findings during the third year of this project.

Unlike previous profiles, this report focuses primarily on youth. It was designed to follow CSAP's prevention logic model and support APRA's movement toward assessing the District's prevention programs by monitoring priority risk factors and targeted outcomes. This report includes consequence and consumption data monitored since the inception of the DCEOW as a part of the first

two steps of the logic model and the results of a special analysis of the 2007 DC Youth Risk Behavior Survey (YRBS) as a part of step 3 (Figure 1). The consequences assessed include juvenile crime and arrests, fatal motor vehicle crashes, drinking and driving, abuse/dependence, toxic exposure to drugs, and AIDS. This epidemiology profile provides data on the scope and severity of each consequence for DC youth. These data form the basis for assessing the importance of each consequence for prevention programming in the District. Consumption behaviors related to these consequences were also identified and examined.

This year, for the first time, we used the YRBS and the NSDUH to measure the scope of early use of alcohol, tobacco, and other drugs (ATODs) and the accessibility of ATODs, perceived risk and disapproval of using ATODs, and family communications about ATODs to begin to address step 3. The analysis of these data reveals key priorities for DC officials regarding substance use by DC youth. This assessment of risk and protective factors will give DC officials a valuable tool in planning and monitoring their substance abuse prevention programs in the future.

Figure 1: The Role of the DCEOW in the Prevention Logic Model



District of Columbia Epidemiology Outcomes Workgroup (DCEOW)

The DCEOW was formed in March 2006 with CSAP funding and operates under the oversight of APRA. APRA is the single state authority responsible for planning, developing, and funding services for DC residents to prevent harmful involvement with alcohol or other drugs, and treatment for those in need of addiction services. CESAR provides assistance in coordinating the DCEOW, data analysis, management, and dissemination of substance use and abuse data in DC. Members of the DCEOW represent various DC agencies including criminal and juvenile justice and public health. In the project's second year, the mission of the DCEOW was expanded to include the needs not only of the District, but its wards as well:

The DCEOW will monitor the use of alcohol, tobacco, and other drugs and the consequences of their use in DC and its eight wards in order to identify and prioritize the District's prevention needs. To achieve this end, the DCEOW will oversee collection, interpretation, and dissemination of citywide and ward data that quantify substance use and its consequences.

The DCEOW provides city officials charged with directing prevention planning with information needed to develop data-driven prevention strategies. In addition, the DCEOW provides the District with data needed to establish baseline outcome objectives for change (and to monitor change) in those outcomes. APRA also uses data provided by the DCEOW to establish prevention block grant funding priorities and to monitor and evaluate outcomes of funded prevention programs/initiatives.

Organization of this Report

The remainder of this report is organized into eight sections designed to assist in addressing three questions identified by APRA as priorities for the District:

- What populations are most at risk for substance abuse and its consequences?
- How can we identify the youth most at risk for substance use or abuse?
- What is the impact of early drug use on other problematic behaviors?

Utilizing data currently available, we were able to begin to address each of these questions. Youth were identified as a population at risk for substance abuse and its consequences. Therefore, this report focuses primarily on DC youth. Our processes included assessing current DCEOW consequence and consumption data and conducting an in-depth analysis of the 2007 DC Youth Risk Behavior Survey (YRBS).

This report provides consequences and consumption patterns of substance use including arrests, motor vehicle crash fatalities, drinking and driving, abuse/dependence, toxic exposure to drugs, and AIDS; a discussion of drug accessibility and risk and protective factors instrumental in the prevention of substance use by DC youth; and a comparative analysis of students in DC and Baltimore. Consumption indicators were addressed primarily with data from the National Survey on Drug Use and Health (NSDUH) and the YRBS. Because the analysis utilizes survey data, all of the percentages pertaining to the NSDUH and YRBS are approximations and thus are not precise. A description of the NSDUH and the YRBS, as well as all other data sources used in this report is provided in the appendix. The appendix also includes survey sample sizes, limitations of the data, and other information pertinent to understanding the data used in this report.

DCEOW Goals

1. Determine and monitor the scope of substance abuse and substance abuse-related problems in DC and its eight wards.
2. Identify newly emerging drugs of use and abuse and other related problems.
3. Facilitate data driven decision-making throughout DC to assure the effective and efficient use of resources.
4. Support ongoing development of data-driven prevention priorities by providing local epidemiological data and guidance in the use of these data.
5. Provide a means of disseminating and sharing accurate and timely assessments of local alcohol and drug use trends and other related problems.
6. Support the ongoing development and monitoring of priority risk factors and targeted outcomes.

OVERVIEW

The District of Columbia, a 68-square mile area, shares boundaries with the states of Maryland and Virginia. The nation's capital is home to more than 588,000 people residing in eight wards, more than 16% of whom live below the poverty line.¹⁻³

Slightly more females live in DC than males, and the majority of the District's population is Black (56%).³ However, the number of Blacks residing in the District decreased approximately 14% in the 1990s, while the number of Asians and Hispanics increased.⁴ The population of the District is slightly older than the nation's general population. Nearly one in five residents is under age 18, while 12% of the population is age 65 and older.¹⁻³ This report focuses on DC youth under age 18. The following sections highlight demographic indicators for DC youth to provide an overview of their economic, health, and educational statuses.

Economic Indicators. From 2004 through 2007, the percentage of the population age 16 and older who were unemployed stabilized between 8 and 9%. The median household income increased steadily during this time from \$46,574 to \$54,317. In spite of these numbers, poverty remained a problem for DC's youth. Nearly one in four youth under age 18 and nearly one in five families with related children continued to live below the poverty line.³

In 2006, more than half of the 114,000 DC children under age 18 lived in single female-headed households. In the same year, more than 54% of children living in a single female-headed household lived below the poverty line.⁵ Since 2003, nearly one in three DC children received or was eligible for food stamps each year. During the 2006-07 school year, more than half of public school and charter students were eligible for free or reduced price lunches. Nearly three in five children applied and were eligible for Medicaid in 2007, a slight decrease from 2006. Slightly fewer (roughly one in four) children received or were eligible for Temporary Assistance for Needy Families (TANF) each year from 2003 to 2007.⁵

Child Health Indicators. In 2005 there were 875 births to teen mothers (under age 20), representing approximately one in ten of the live births in DC

that year.⁵ In 2007, the birth rate for teens age 15 to 19 increased to 45 per 1,000 teens, from 37 per 1,000 teens in 2006.³

In fiscal year 2006, more than 5,600 hotline calls reporting alleged cases of child abuse or neglect were received and processed by the DC Child and Family Services Agency. Nearly one-third of these cases were substantiated. Although the number of abuse cases filed in DC courts increased slightly from 2005 to 2006 (from 142 to 150), the number of neglect cases filed decreased sharply (from 791 to 502). Since 1991, the number of abuse cases filed has fluctuated greatly, while the number of neglect cases filed remained fairly stable from 1995 to 2001, peaked in 2005, and decreased in 2006.⁵

Education Indicators. In 2007, nearly 86% of DC residents age 25 or older attained a high school degree or above, while roughly half went on to obtain at least a bachelor's degree.³ However, during the 2006-07 school year, only one-third of public school students tested above the proficiency level in reading (37%) and math (32%).⁶ The dropout rate during the 2004-05 school year was 7.6 per 100 students. The rate was slightly higher for males (8.6) than females (6.6), and for Blacks (7.6) than Whites (4.7).⁶

Availability and Use of Alcohol and Illicit Drugs. According to the NSDUH annual state averages for 2005–2006, an estimated 1,800 to 3,200 DC residents age 12 to 17 used marijuana in the past month, 3,900 to 5,700 drank alcohol in the past month, and 1,900 to 3,500 were past month binge drinkers. At least one in four underage residents (12 to 20) drank alcohol in the past month—approximately 15,600 to 19,500 underage residents. At least 9,600 residents age 12 to 20 binge drank.⁷

According to the 2007 DC YRBS, approximately one in six 10th, 11th, and 12th graders who drank in the past month purchased their alcohol at a commercial retailer. Approximately one in three DC public and charter high school students (herein referred to as high school students) who drank were given alcohol by someone else. An estimated one-quarter of high school students had been offered, sold, or given an illegal drug by someone on school property in the past year.⁸

Alcohol abuse cost DC approximately \$700 million per year, and illicit drug use cost about \$500 million per year.⁹ In fiscal year 2005, DC spent approximately \$360 million to address these problems.⁹ In federal fiscal year 2008, 61 treatment programs and 20 publicly funded prevention programs were located in the District.¹⁰ Currently, APRA funds 11 evidence-based prevention program grants and a wide range of community prevention strategies for at-risk youth. As of 2007, there were more than 1,400 licensed alcohol retailers¹¹ and more than 1,100 licensed tobacco retailers in DC.¹²

¹ Pach, A, Brown, J., Hendrickson, J., Odom, T., Nemes, S. Patterns and trends of drug abuse in Washington, D.C. *Epidemiologic Trends in Drug Abuse, Volume II: Proceedings of the Community Epidemiology Work Group, June 2002*. Washington, DC: National Institute on Drug Abuse, 2002.

² Artigiani, E., Rinehart, C., Okeke, L., Rezey, M., Hsu, M., Wish, E. Patterns and trends of drug abuse in Maryland and Washington, DC metropolitan area 2002–2007. *Epidemiologic Trends in Drug Abuse, Volume II: Proceedings of the Community Epidemiology Work Group, June 2008*. Washington, DC: National Institute on Drug Abuse, in press.

³ 2007 American Community Survey, US Census Bureau.

⁴ Aizenman, N.C. DC may be losing status as a majority Black city. *The Washington Post*, May 17, 2007: p. A1.

⁵ DC Kids Count. *Every Kid Counts in the District of Columbia*. 2007.

⁶ U.S. Department of Education. *Consolidated State Performance Report: Part I*. 2008.

⁷ National Survey on Drug Use and Health, Office of Applied Studies, Substance and Mental Health Services Administration. 2005–2006.

⁸ DC Youth Risk Behavior Survey, DC Public Schools. 2007.

⁹ DC Department of Health. *District of Columbia First Citywide Comprehensive Substance Abuse Strategy*. 2003.

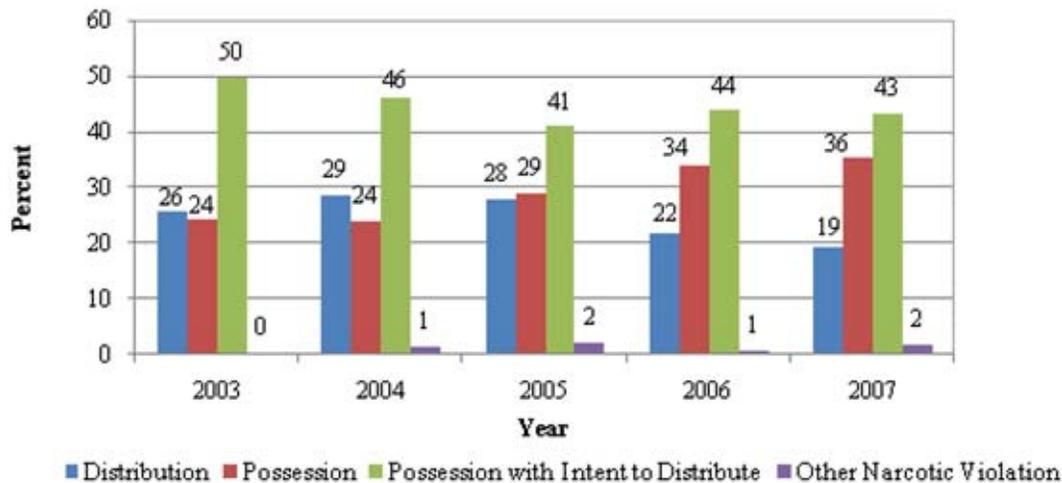
¹⁰ The Addiction Prevention and Recovery Administration, DC Department of Health, Fiscal Year 2008.

¹¹ DC Alcoholic Beverage Regulation Administration, Updated on August 4, 2008.

¹² The Addiction Prevention and Recovery Administration, DC Department of Health, Updated on March 28, 2007.

CONSEQUENCES

Figure 2. Percentage of Juvenile Drug-Related Arrests in DC, by Type of Violation, 2003–2007



NOTE: Percentages shown are rounded to the nearest whole number.

SOURCE: Criminal Justice Information System data as of July 2008, DC Metropolitan Police Department, 2003–2007. Please see appendix for additional information about data from the DC Metropolitan Police Department.

In this section, we assess five key consequences of alcohol and drug use for youth: arrests, fatal motor vehicle crashes, driving under the influence of alcohol, abuse/dependence, toxic exposure to drugs, and AIDS.

Juvenile Arrests

The DC Metropolitan Police Department (MPD) reports arrest data for juveniles under age 18. Data available as of July 2008 indicate that approximately one in ten juvenile arrests were drug related. The juveniles most likely to be arrested for drug-related crimes were black males. Marijuana was the most frequently reported drug associated with juvenile arrests.

Drug-Related Arrests. Juvenile drug-related arrests account for roughly 9 to 13% of all juvenile arrests in DC. In 2007, there were 310 juvenile drug-related arrests out of 3,266 juvenile arrests. Drug-related arrests include arrests for distribution, possession, possession with intent to distribute (PWID), and any other narcotic drug violation (i.e., violation of pharmacy laws, forged narcotic prescription, and drug manufacturing). The total number of juvenile drug-related arrests remained relatively stable from 2003 to 2007, with a high of 367 juvenile arrests in 2004 and a low of 310 arrests in 2007. The majority of juvenile drug-related

arrests each year were for PWID (Figure 2). Each year, two-fifths to one-half of all juvenile arrests were for PWID. The number of distribution arrests decreased steadily from 2004 to 2007 while the number of possession arrests increased during this time.

Marijuana was the most frequently reported drug associated with juvenile drug arrests. More than half of all arrests between 2003 and 2007 were marijuana related. In more recent years (2006 and 2007), the number and percentage of juvenile drug-related arrests for crack cocaine have increased; while the number and percentage of juvenile drug-related arrests for powder cocaine have decreased. In 2003, 21% of all juvenile drug-related arrests were crack cocaine related, while 16% were powder cocaine related. In 2007, 28% of all juvenile drug-related arrests were for crack cocaine-related offenses, while just 10% were powder cocaine related. The number of heroin-related arrests has remained consistently low across the years.

Males accounted for roughly 93 to 97% of all juvenile drug-related arrests between 2003 and 2007. Blacks accounted for more than 90% of all juvenile arrests each year during the same period. Consequently, the overwhelming majority of juvenile arrests during these years were of young Black males.

Substance-Related Driving and Alcohol-Related Arrests. Juveniles were rarely arrested for substance-related driving or other alcohol-related charges between 2003 and 2007. There were seven arrests for these crimes during this time. These seven arrests included arrests for possession of open alcohol, drinking in public, and driving under the influence of alcohol and/or drugs.

Arrests for Select Crimes. The DC MPD reported an average of 3,000 juvenile arrests each year from 2003 to 2007. Violent crime arrests, including arrests for homicide, robbery, and assault charges accounted for approximately 24 to 27% of all juvenile arrests. Assault was the most frequent charge. While there was an average of 600 juvenile arrests for assault each year, the annual average of juvenile homicide arrests was only 1.8. Between 2005 and 2007, the percentage of juvenile arrests for assault (19 to 20%), robbery (6 to 7%), and carrying a weapon (4 to 5%) were rather stable.

Property crime arrests, including larceny/theft, burglary, arson, and vandalism charges accounted for 6 to 8% of all juvenile arrests each year. In addition, nearly 2 to 3% of all juvenile arrests were for disorderly conduct. The number of juvenile arrests for larceny/theft, vandalism, and disorderly conduct steadily increased from 2005 to 2007, while the number of juvenile arrests for burglary increased from 2005 to 2006, and remained stable

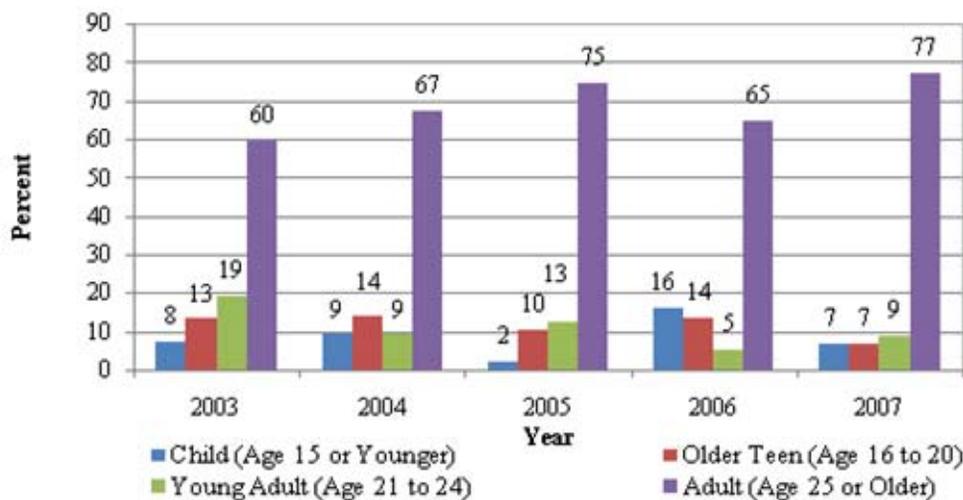
in 2007. There were very few juvenile arrests for car jacking and no arrests for breaking and entering between 2003 and 2007.

Fatal Motor Vehicle Crashes

The Fatality Analysis Reporting System (FARS), a data reporting system of the National Highway Traffic Safety Administration (NHTSA), reports motor vehicle crash characteristics at the state level. To gauge the number of alcohol-related crashes when alcohol tests were not conducted at the scene of an accident or shortly thereafter, FARS estimates driver blood alcohol concentration levels. The total number of crash fatalities increased from 37 in 2006 to 44 in 2007, but the number of alcohol-related crash fatalities stayed about the same (from 19 to 18); 41% of all fatalities in 2007 were alcohol related. The number of crash fatalities of youth age 20 and younger fluctuated from 2003 to 2007, ending slightly lower. Except for a decrease between 2005 and 2006, the number of adult fatalities primarily increased from 2003 to 2007.

Alcohol-Related Crash Fatalities. FARS estimates that there were 35 fatalities from alcohol-related crashes in 2003. By 2007, this decreased to 18. Alcohol-related crash fatalities accounted for roughly 40 to 58% of all fatalities during these years. In three of the past five years where data are available, alcohol-related crash fatalities made up

Figure 3. Percentage of Fatalities from Motor Vehicle Crashes in DC, by Age Group, 2003–2007



NOTE: Percentages shown are rounded to the nearest whole number.

SOURCE: Fatality Analysis Reporting System, National Highway Traffic Safety Administration, U.S. Department of Transportation, 2003–2007. Please see appendix for additional information about data from the Fatality Analysis Reporting System.

more than half of all crash fatalities. Fourteen to 25% of all crash fatalities from 2003 to 2007 were drinking drivers.

Crash Fatalities. Although adults made up the majority of all fatalities from motor vehicle crashes, those age 24 or younger accounted for approximately 23 to 40% of all crash fatalities during the past five years (Figure 3). Fatalities of youth age 20 or younger fluctuated during this time, decreasing from 29.7% of all fatalities in 2006 to 13.6% in 2007.

The majority of all crash fatalities were of people driving or riding in a vehicle. Together, teens and young adults accounted for 9 to 28% of these fatalities from 2003 to 2007. Since 2003, the percentage of all fatalities that were pedestrians or bicyclists has increased. In 2003, one-quarter of all fatalities were pedestrians or bicyclists, while in 2006 and 2007 more than 45% of all fatalities were pedestrians or bicyclists. Very few of these pedestrians or bicyclists were under age 24.

Drinking and Driving by DC High School Students Age 16 or Older

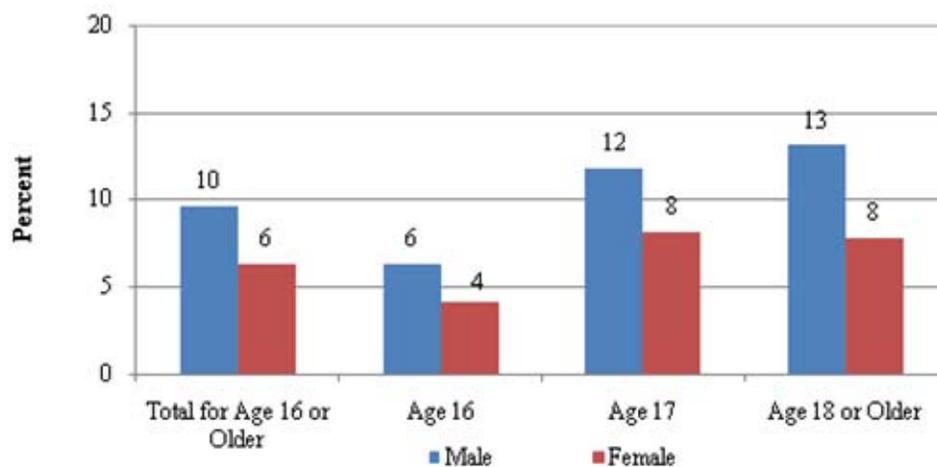
To examine reported drinking and driving by high school students, we analyzed the 2007 DC YRBS to assess the impact of past month alcohol use (current drinking) or drinking before age 13 (early drinking) on the likelihood of a student to drive under the

influence of alcohol in the past month. An estimated 8% of high school students age 16 or older drove under the influence of alcohol in the past month. Of early drinkers age 16 or older, 17% also drove drunk in the past month. Approximately one in three current binge drinking students age 16 or older who binge drank (having five or more drinks on the same occasion on at least one day in the 30 days prior to the survey), also drove drunk in the past month, while 69% of students age 16 or older who drank and drove in the past month also binge drank in the past month.

Male high school students age 16 or older were more likely than female high school students to drink and drive in the past month. The percentage of students driving drunk increased from age 16 to 17, and remained stable from age 17 to 18 (Figure 4). Approximately two-fifths of male and female current drinkers were passengers in a vehicle driven by someone under the influence in the past month.

To better understand the relationship between early drinking and drinking and driving in the past month, we calculated the odds at which early drinking students age 16 or older were more or less likely to drink and drive in the past month. We found that early drinkers age 16 or older were nearly four times more likely to drink and drive than non-early drinkers age 16 or older. Male early drinkers age 16 or older were just as likely as

Figure 4. Percentage of DC High School Students Age 16 or Older Who Drove Drunk in the Past Month, by Age and Sex, 2007



NOTE: Percentages shown are rounded to the nearest whole number.

SOURCE: Adapted by CESAR from data from the Youth Risk Behavior Survey, DC Public Schools, 2007. Please see appendix for additional information about data from the 2007 DC Youth Risk Behavior Survey.

female early drinkers age 16 or older to drink and drive in the past month.

Abuse/Dependence by DC Household Residents Age 12 to 17

The National Survey on Drug Use and Health (NSDUH) reports dependence or abuse on alcohol and/or illicit drugs using definitions found in the fourth edition of the Diagnostic and Statistical Manual of Mental Disorders. Due to the sampling methodology utilized, multiple survey years are combined to produce DC estimates. The most recent data available from the 2005–2006 surveys estimated that 2 to 5% of DC residents age 12 to 17 (900 to 1,800 DC youth) and 17 to 23% of DC residents age 18 to 25 (11,900 to 16,100 DC young adults) abused or were dependent on alcohol in the past year. These surveys also estimated that 2 to 6% of DC residents age 12 to 17 (1,000 to 2,100 DC youth) and 5 to 10% of DC residents age 18 to 25 (3,900 to 6,900 DC young adults) abused or were dependent on illicit drugs in the past year. Illicit drugs include marijuana, cocaine, heroin, hallucinogens, inhalants, and prescription-type psychotherapeutics used non-medically.

Toxic Exposures to Drugs

The American Association of Poison Control Centers’ (AAPCC) Toxic Exposure Surveillance System (TESS) reports human exposures to poisonous toxins, including drugs, in the District of Columbia called in to the National Capital Poison Center (NCPC). There were 122 to 175 stimulant or

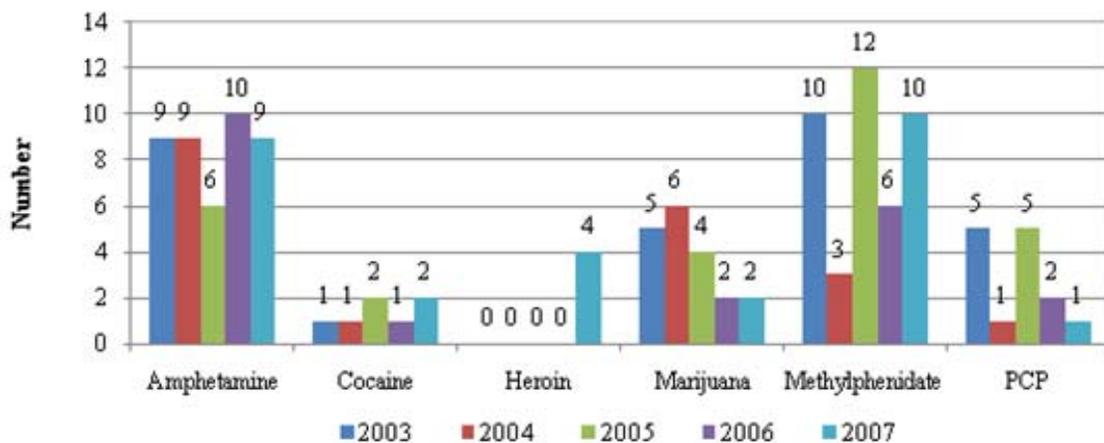
street drug exposures called in to the NCPC each year from 2003 to 2007. Youth or young adults in DC age 6 to 19 represented 17 to 25% of stimulants or street drug exposures, totaling 24 to 34 stimulant or street drug exposures each year (Figure 5). During this time, individuals age 6 to 19 were more frequently exposed to methylphenidate (i.e., Ritalin®) and amphetamines (including hallucinogenic amphetamines) than to any other stimulant or street drug. They accounted for roughly 57% of all stimulant or street drug exposures for this age group. While the number of methylphenidate and PCP exposures reported to the NCPC fluctuated during this time, the number of amphetamine and marijuana exposures remained relatively stable. There were no heroin exposures from 2003 to 2006; however, four exposures were reported in 2007.

AIDS Cases

The DC Department of Health’s HIV/AIDS Administration is charged with investigating HIV and AIDS cases reported by laboratories or providers in the District of Columbia. We examine newly reported and living AIDS cases for youth between the ages of 13 and 18 at the time of diagnosis.

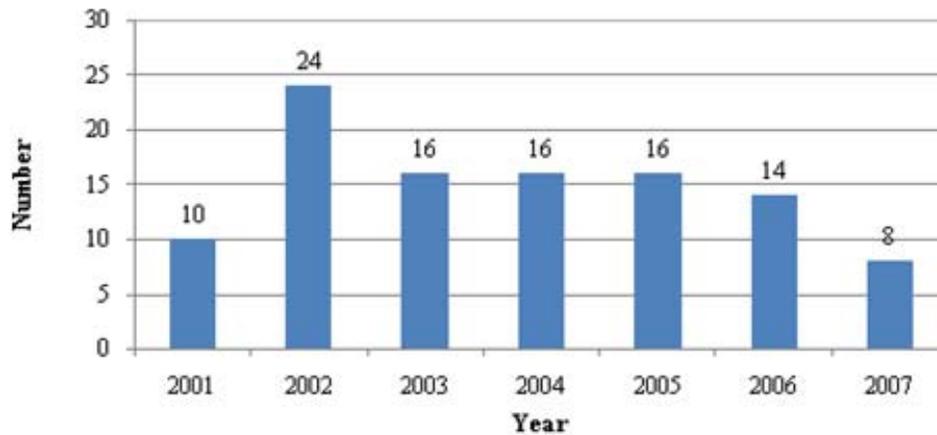
Newly Reported AIDS Cases. Of the 1,222 newly reported AIDS cases between 2006 and 2007, 22 involved youth age 13 to 18. The number of new AIDS cases involving youth age 13 to 18 decreased by 50% from 16 in 2005 to 8 in 2007—

Figure 5. Number of Calls to the DC Poison Control Center for Individuals Age 6 to 19, 2003–2007



SOURCE: National Capital Poison Center, American Association of Poison Control Centers, Toxic Exposure Surveillance System, 2003–2007. Please see appendix for additional information about data from the National Capital Poison Center.

Figure 6. Number of Newly Reported AIDS Cases for DC Youth Age 13 to 18 at Time of Diagnosis, 2001–2007



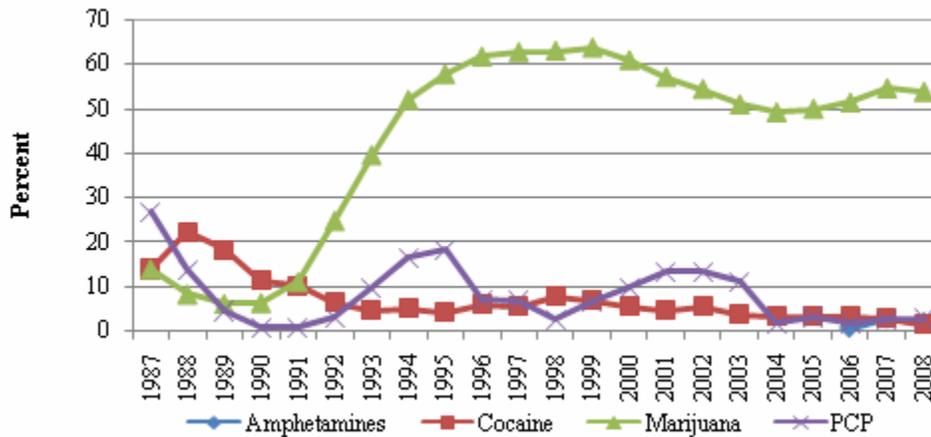
SOURCE: DC Department of Health, HIV/AIDS Administration data as of August 27, 2008, special data request February 6, 2009. Please see appendix for additional information about data from the DC Department of Health, HIV/AIDS Administration.

the lowest number reported in the past 7 years (Figure 6). Although females age 13 to 18 outnumbered males in 2005 13 to 3, the numbers were about equal in every other year. Between 2001 and 2007, intravenous drug use (IDU) was the reported mode of transmission in fewer than 3 cases per year. The most frequently reported mode of transmission was heterosexual sex.

Living AIDS Cases. The total number of youth age 13 to 18 living with AIDS steadily increased from 354 in 2001 to 452 in 2006 (the latest year for which data are available). In 2006, IDU and MSM/IDU (men who have sex with men and were intravenous drugs users) were the primary modes of transmission reported in 20% of these cases. Nearly three-quarters of the youth living with AIDS in 2006 were black and male.

CONSUMPTION

Figure 7. Percentage of Juvenile Arrestees (Under Age 18) Testing Positive for Amphetamines, Cocaine, Marijuana, and/or PCP in the District of Columbia, 1987-2008*



NOTES: *2008 includes January-October. 2006 amphetamine tests cover September-December only.

SOURCE: DC Office of Forensic, Pretrial Services Agency, March 2008. Please see appendix for additional information about data from the Pretrial Services Agency.

This section on the use of alcohol, tobacco, and other drugs is designed to describe the scope and severity of substance abuse by DC high school students and to highlight our in-depth analyses of the 2007 DC YRBS data. These analyses were conducted to investigate the links between alcohol or marijuana use and future substance abuse problems and other risky or delinquent behaviors.

Drug Use by Juvenile Arrestees

The DC Pretrial Services Agency (PSA) has conducted urinalyses on adult (age 18 or older) and juvenile arrestees since 1984. Juveniles are tested for amphetamines, cocaine, phencyclidine (PCP), and marijuana. Between January 2004 and October 2008 (the latest month for which data were available), 50% (in 2004) to 56% (in 2007) of juvenile arrestees tested positive for marijuana. Juvenile arrestees were far more likely to test positive for marijuana than any other drug; less than 3% of juveniles arrestees tested positive for cocaine, PCP, or amphetamines Jan.-Oct. 2008. The percentage of juveniles testing positive for marijuana peaked in the late 1990s at nearly 64% (Figure 7). According to a Center for Substance Abuse Research *CESAR Fax*, the percentage of juvenile arrestees testing positive for illicit drugs decreased over the past decade. From January to

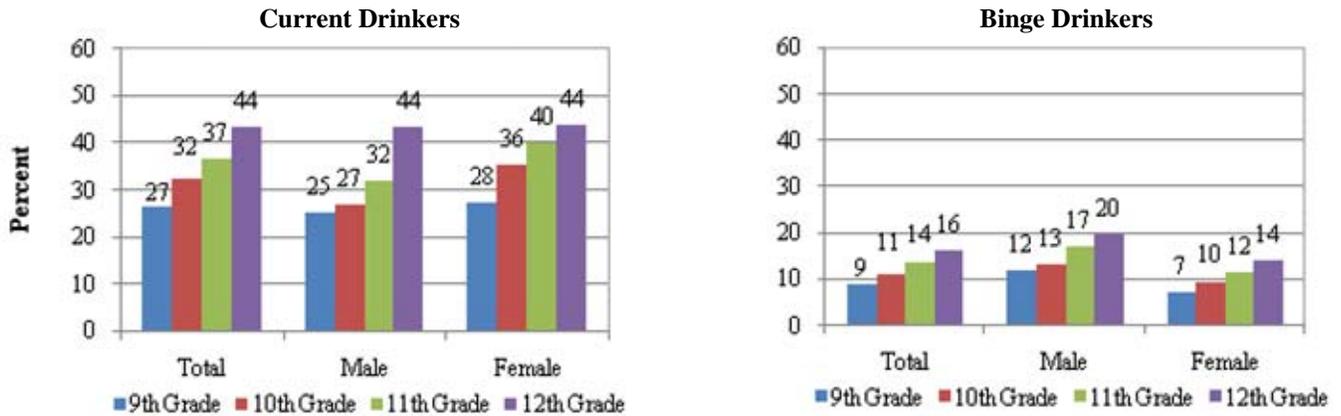
October 2008, 55% of juvenile arrestees tested positive for at least one illicit drug, compared to 64% in 1998.¹

Alcohol, Cigarette, and Other Drug Use by DC High School Students

Alcohol Consumption. According to the 2007 DC YRBS, approximately 25% of high school students took their first drink of alcohol (more than a few sips) before age 13 (early drinkers). Overall, males were more likely than females to be early drinkers (30% of males and 22% of females). The percentage of male or female high school students who drank or binged in the past month increased by grade (Figures 8 and 9). Female 10th and 11th graders were more likely to drink in the past month (current drinkers) than their male counterparts, but the percentages were equal by senior year. Although female students were more likely to be current drinkers, a greater percentage of males than females binged in the past month (current binge drinkers). Overall, 36% of females and 31% of males were current drinkers, while 15% of males and 10% of females were current binge drinkers.

Cigarette Consumption. In 2007, approximately 12% of high school students smoked their first whole cigarette before age 13 (early

Figures 8 and 9. Percentage of DC High School Students Who Used Alcohol or Binged in the Past Month, by Grade and Sex, 2007



NOTE: Percentages shown are rounded to the nearest whole number.

SOURCE: DC Youth Risk Behavior Survey, DC Public Schools, 2007. Please see appendix for additional information about data from the 2007 DC Youth Risk Behavior Survey.

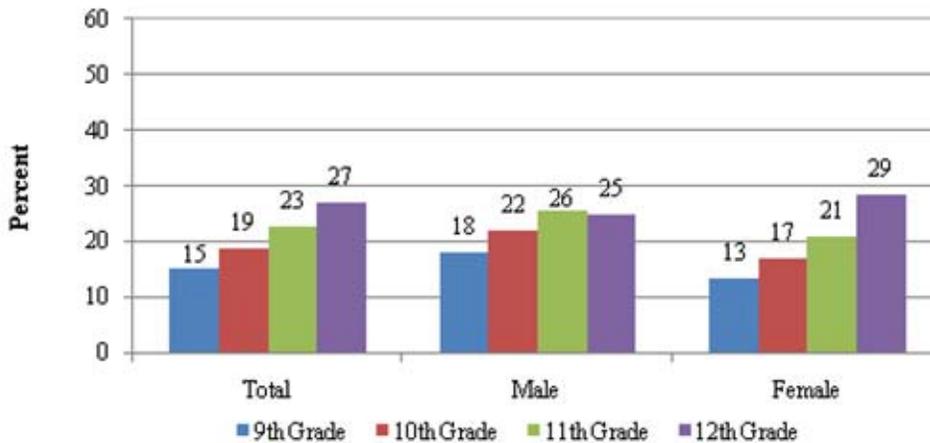
smokers); 15% of males and 10% of females were early smokers. Eleven percent of all high school students smoked a cigarette at least once in the past month (current smokers) while 14% of males and 9% of females were current smokers.

Other Drug Consumption. Approximately 11% of high school students tried marijuana for the first time before age 13 (early marijuana users). A greater percentage of males than females were early marijuana users (16% of males and 8% of females). Overall, 22% of males and 19% of females used marijuana in the past month (current marijuana

users). The percentage of female current marijuana users increased from 9th to 12th grade from 13 to 29%, and the percentage of male current marijuana users increased from 9th to 11th grade from 18 to 26% (Figure 10).

Approximately 4 to 7% of high school students used cocaine, heroin, methamphetamines, or ecstasy (hardcore drugs) on at least one occasion in their lifetime. A greater percentage of males than females used each hardcore drug in their lifetime. Interestingly, the percentage of students who had ever used cocaine increased from 9th to 10th and

Figure 10. Percentage of DC High School Students Who Used Marijuana One or More Times During the Past Month, by Grade and Sex, 2007



NOTE: Percentages shown are rounded to the nearest whole number.

SOURCE: DC Youth Risk Behavior Survey, DC Public Schools, 2007. Please see appendix for additional information about data from the 2007 DC Youth Risk Behavior Survey.

from 10th to 11th grade, but decreased from the 11th to 12th grade. Between the 11th and 12th grade we would expect to see an increase in the number of cocaine users because students have one more year to use cocaine. Because the percentage decreased, the implication is that cocaine users may be dropping out of high school after the 11th grade. This pattern was not observed with any other hardcore drug (e.g., there was an increase in the number of students using any of the other hardcore drugs from 9th to 12th grade).

Drug Use by DC Household Residents

This section examines the 2005–2006 annual averages of the NSDUH. The NSDUH provides three age groups for analyzing alcohol and other drug use by DC youth and young adults: age 12 to 17, 18 to 25, and 12 to 20 (underage). Annual averages from the 2005–2006 surveys estimate that the use of alcohol, cigarettes, or other drugs by DC residents age 12 to 17 began between age 11 and 15. Between 11 and 16% of youth age 12 to 17 drank alcohol, 6 to 9% (2,100 to 3,300 residents) smoked cigarettes, and 5 to 8% (1,800 to 3,200 residents) used marijuana in the past month (Figure 11). In comparison, 68 to 76% of DC residents (47,900 to 53,100 residents) age 18 to 25 drank alcohol, 32 to 41% (22,800 to 28,300 residents) smoked cigarettes, and 16 to 24% (11,300 to 16,300

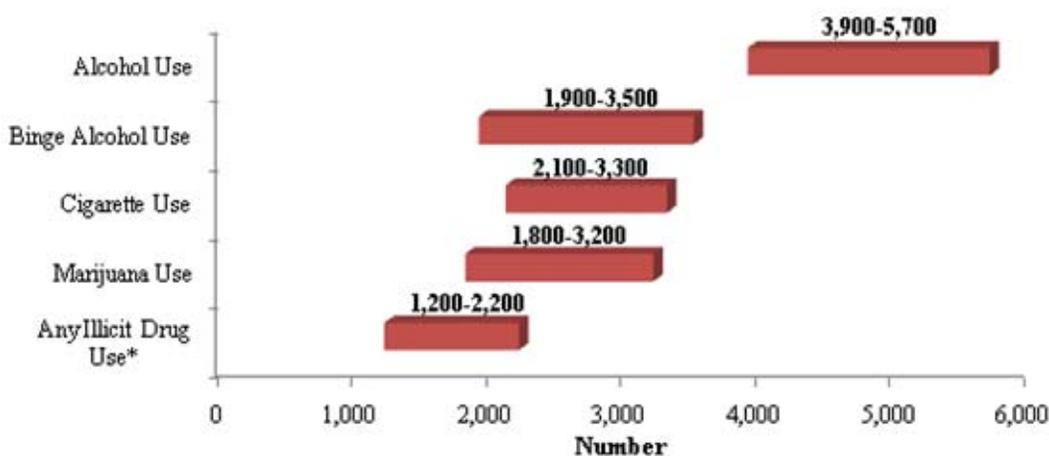
residents) used marijuana in the past month (Figure 12).

Alcohol Consumption. Annual averages from the 2005–2006 surveys estimate that the average age DC residents age 12 to 17 first drank alcohol was between 12 and 14. During these survey years, more DC residents age 12 to 17 drank alcohol than used any other drug in the past month.

Approximately 4 to 10% of DC residents age 12 to 17 binged in the past month (1,400 to 3,500 youth). The percentage of DC residents age 18 to 25 drinking or binge drinking was much higher. At least three in five DC residents age 18 to 25 drank in the past month (47,900 to 53,100 young adults) and approximately half binged (32,500 to 38,400 young adults). An estimated 26 to 34% of underage DC residents drank in the past month (15,600 to 19,500 underage residents) and at least 16% binged (9,600 to 12,800 underage residents). There was a significant increase in the percentage of DC residents age 18 to 25 drinking or bingeing in the past month between the 2003–2004 and 2004–2005 surveys. There was also a significant increase in the percentage of DC residents age 18 to 25 bingeing between the 2004–2005 and 2005–2006 surveys.

Cigarette Consumption. Annual averages from 2005–2006 surveys estimate that the average age DC residents age 12 to 17 first smoked cigarettes

Figure 11. Number of DC Residents Age 12 to 17 Who Binged or Used Alcohol, Cigarettes, Marijuana, or Any Illicit Drug Other Than Marijuana in the Past Month, 2005–2006



NOTE: *Any illicit drug use other than marijuana includes cocaine (including crack), heroin, hallucinogens, inhalants, or prescription-type psychotherapeutics used non-medically.
SOURCE: 2002, 2003, 2004, 2005, and 2006 National Survey on Drug Use and Health, Office of Applied Studies (OAS), Substance Abuse and Mental Health Administration (SAMHSA). Please see appendix for additional information about data from the NSDUH.

was between 12 and 14. Between 5 and 10% of youth age 12 to 17 smoked cigarettes in the past month (2,100 to 3,300 youth). As with alcohol, young adults age 18 to 25 were more likely to smoke cigarettes than those age 12 to 17. At least 1 in 4 young adults smoked in the past month (22,800 to 28,300 young adults).

Other Drug Consumption. Annual averages from 2005–2006 surveys estimate that the average age DC youth age 12 to 17 first used marijuana was between 13 and 15. There was a significant decrease in the average age of first marijuana use between the 2002–2003 and 2003–2004 surveys, from an average age of 14.1 to 13.8. The average age youth first used any illicit drug other than marijuana was between 11 and 13; there were no significant differences between pooled survey estimates.

Five to nine percent of youth (1,800 to 3,200 youth) and 16 to 24% of residents age 18 to 25 (11,300 to 16,300 young adults) smoked marijuana in the past month. There was a significant decrease in the percentage of young adults who smoked marijuana in the past month between the 2002–2003 and 2003–2004 surveys.

Three to seven percent of youth and 5 to 11% of young adults used illicit drugs other than marijuana in the past month. Less than 1% of youth and less than 9% of young adults used cocaine in the past

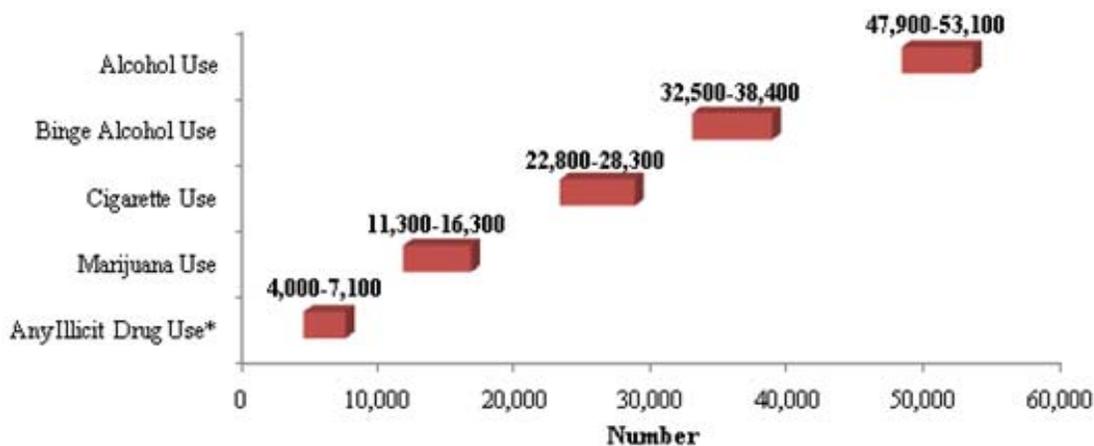
year. Less than 7% of youth and less than 12% of young adults took pain relievers non-medically in the past year.

A Brief Comparative Analysis

To understand the severity of the consumption indicators described above, it is necessary to put the data in a broader context. By using the Youth Risk Behavior Surveillance System (YRBSS) Youth Online, it is possible to assess trends across YRBS survey years and to compare DC high school students to high school students in other cities. Youth Online provides detailed results for high school students by city and health topic from 1991 to 2007. These publicly available data can be queried to compare high school students in one city or state over multiple years or multiple cities or states during one year. For the purposes of this analysis, two types of comparisons were made—comparing YRBS survey years 1997, 2003, and 2007 for DC high school students and comparing 2007 results for DC and Baltimore. Additional information about the YRBS and the YRBSS Youth Online is available in the appendix.

Trends. A review of Youth Online data reveal a significant decrease in lifetime and past month cigarette smoking by DC high school students between YRBS survey year 2003 and YRBS survey year 2007. The percentages of DC high school

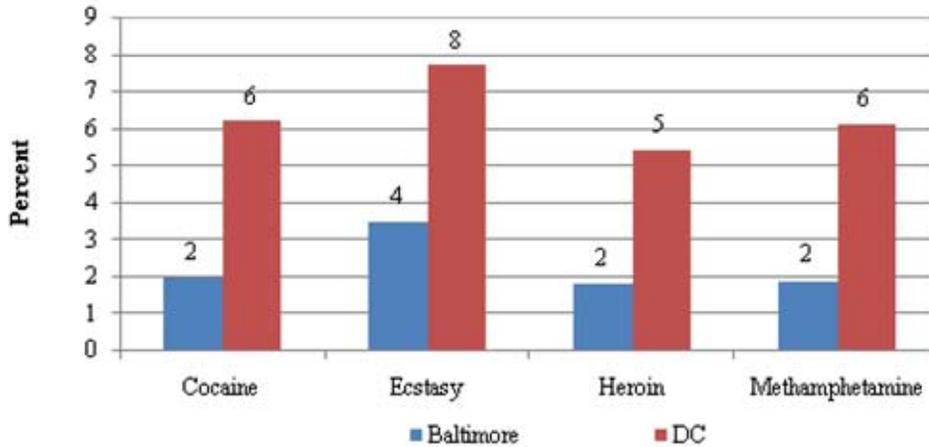
Figure 12. Number of DC Residents Age 18 to 25 Who Binged or Used Alcohol, Cigarette, Marijuana, or Any Illicit Drug Other Than Marijuana in the Past Month, 2005–2006



NOTE: *Any illicit drug use other than marijuana includes cocaine (including crack), heroin, hallucinogens, inhalants, or prescription-type psychotherapeutics used non-medically.

SOURCE: 2002, 2003, 2004, 2005, and 2006 National Survey on Drug Use and Health, OAS, SAMHSA. Please see appendix for additional information about data from the NSDUH.

Figure 13. Percentage of DC and Baltimore High School Students Who Used Select Drugs, 2007



NOTE: Percentages shown are rounded to the nearest whole number.

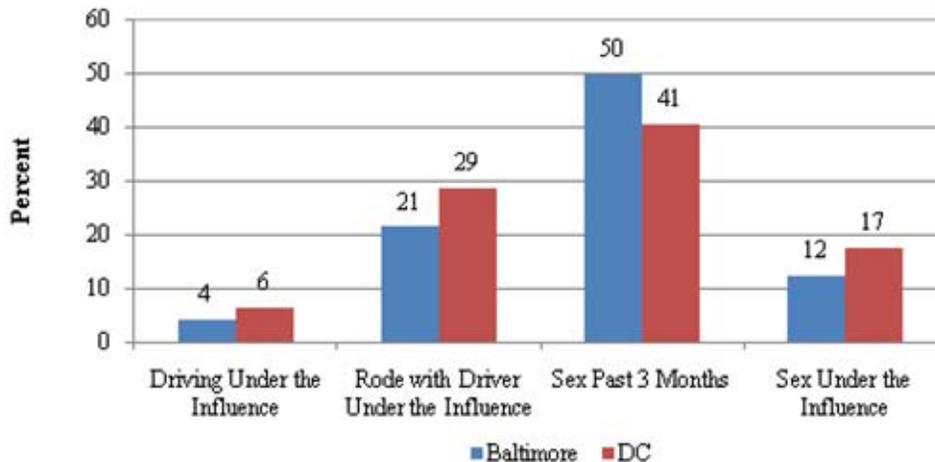
SOURCE: Youth Risk Behavior Surveillance System Youth Online, Centers for Disease Control and Prevention, 2007. Please see appendix for additional information about data from the Youth Risk Behavior Surveillance System Youth Online.

students who used alcohol or any other drugs, however, remained unchanged. In contrast, over the past decade (1997 vs. 2007), the use of cigarettes, alcohol, or marijuana decreased while the percentage of student's lifetime use of cocaine or steroids increased.

DC vs. Baltimore. Data from the U.S. Census Bureau's 2007 American Community Survey showed that DC and Baltimore were very similar demographically. Both cities were majority black and female, and both had similar percentages of individuals and families living in poverty. The

median household and per capita income in DC, however, were much higher. Despite these similarities and being located about 50 miles apart, levels of drug use were very different. In 2007, DC high school students were significantly more likely to have drunk alcohol in the past month or to have ever used cocaine, ecstasy, heroin, or methamphetamine than Baltimore high school students (Figure 13). DC high school students were also more likely than Baltimore high school students to have engaged in other risky behaviors.

Figure 14. Percentage of DC and Baltimore High School Students Engaging in Select Risky Behaviors, 2007



NOTE: Percentages shown are rounded to the nearest whole number.

SOURCE: Youth Risk Behavior Surveillance System Youth Online, Centers for Disease Control and Prevention, 2007. Please see appendix for additional information about data from the Youth Risk Behavior Surveillance System, Youth Online.

DC students were more likely to have been offered, sold, or given illegal drugs by someone on school property in the past year, to drive under the influence, or to have been a passenger of someone driving under the influence of alcohol. Although Baltimore students were more likely to have had sex in the past three months, DC students were more likely to have had sex under the influence of alcohol or drugs (Figure 14 on the previous page). There were no significant differences between the cities in the percentages of students who carried a weapon in the past month or physically fought in the past year. The relationship between alcohol or marijuana use and risky behaviors is investigated in-depth in the risk factors section (Page 23).

¹ Center for Substance Abuse Research. December 15, 2008. Percentage of D.C. Juvenile Arrestees Testing Positive for Drugs Decreased Over Last Decade; Greatest Decreases Occurred Among Youth 12 or Younger. *CESAR Fax*, 17:50.

DRUG ACCESSIBILITY

As of 2007, there were more than 2,600 tobacco and alcohol distribution licenses in the District—1,127 for tobacco and 1,476 for alcohol. The majority of these licenses are in Ward 2. APRA funded 18 evidence-based prevention programs for at-risk youth in federal fiscal year 2008 in DC. Currently, APRA funds 11 evidence-based prevention program grants for at-risk youth and a wide range of community prevention strategies.

To assess the accessibility of tobacco by youth, DC conducts annual compliance checks of a sample of these distributors. During the most recent check in 2008, the compliance rate was 90.8%. Thus, the majority of tobacco retailers in the District were complying with federal laws that prohibit the sale of tobacco products to minors. Another source of information on accessibility is the YRBS. The following section highlights the 2007 DC YRBS results on ATOD accessibility for DC youth.

How Public School Students Got Their Alcohol, Cigarettes, and Other Drugs

Alcohol. Approximately one-third of high school students who drank in the past month were given alcohol to drink by someone else; roughly 18% gave someone else money to buy it for them; and 15% obtained it in “some other way” (Table 1). Male and female high school students who drank in the past month were more likely to be given alcohol than to obtain it any other way. Females were more likely to be given alcohol than males. Of those

given alcohol, approximately 75% were female and 25% were male (Table 2).

Cigarettes. An estimated 28% of current cigarette smokers under age 18 obtained their cigarettes by buying them in a convenience store, supermarket, discount store, or gas station. Approximately 26% borrowed (or bummed) them from someone else, and roughly 13% obtained them from someone who bought them for them (Table 3). Both male and female current cigarette smokers under age 18 more frequently obtained their cigarettes by buying them at a commercial retailer than any other way. Males were more likely to obtain their cigarettes in this way than females. Of the students who bought their cigarettes at a commercial retailer, approximately 59% were male and 41% were female.

Drug Accessibility on School Property.

Males were more likely than females to be offered, sold, or given an illegal drug by someone on school property in the past year (approximately 30% of males and 21% of females). Twelfth grade males were more frequently offered, sold, or given an illegal drug by someone on school property than males in 9th, 10th, and 11th grades; however, there were equal percentages of females across all grades. Youth Online data indicate that the percentage of youth offered, sold, or given an illegal drug by someone on school property in the past year decreased significantly between YRBS survey year 2003 and YRBS survey year 2007.

Table 1. Percentage of DC High School Students Obtaining Alcohol in the Past Month, by Sex and Method, 2007

	Total		Males		Females	
	No.	%	No.	%	No.	%
Someone gave it to me	1,373	34.4	341	22.0	1,032	42.3
Bought it in a store, at a restaurant, bar, club, or public event	822	20.5	491	31.7	331	13.6
Gave someone money to buy them	703	17.6	336	21.6	367	15.1
Some other way*	603	15.1	208	13.4	395	16.2
Took it from a store or a family member	489	12.3	176	11.3	313	12.8
Total	3,990	100.0	1,552	100.0	2,438	100.0

NOTE: *Some other way is defined as not buying alcohol in a store, restaurant, or at a public event, not giving someone else money to buy alcohol, not getting alcohol from someone else, and not taking alcohol from a store or family member.

SOURCE: Adapted by CESAR from data from the Youth Risk Behavior Survey, DC Public Schools, 2007.

Table 2. Methods Used by DC High School Students to Obtain Alcohol in the Past Month, by Sex, 2007

	Total		Males		Females	
	No.	%	No.	%	No.	%
Did not drink	7,089	100.0	2,910	41.0	4,179	59.0
Someone gave it to me	1,373	100.0	341	24.8	1,032	75.2
Gave someone money to buy them	703	100.0	336	47.8	367	52.2
Some other way*	603	100.0	208	34.5	395	65.5
Bought it in a store	568	100.0	310	54.6	258	45.4
Took it from a store or a family member	489	100.0	176	36.0	313	64.0

NOTE: *Some other way is defined as not buying alcohol in a store, restaurant, or at a public event, not giving someone else money to buy alcohol, not getting alcohol from someone else, and not taking alcohol from a store or family member. Due to low cell counts, across gender breakdowns are not available for students who bought their alcohol at a restaurant, bar, club, or public event.

SOURCE: Adapted by CESAR from data from the Youth Risk Behavior Survey, DC Public Schools, 2007.

Table 3. Percentage of DC High School Students Under Age 18 Obtaining Cigarettes in the Past Month, by Sex and Method, 2007

	Total		Males		Females	
	No.	%	No.	%	No.	%
Bought them in store or gas station	312	28.2	184	32.1	128	24.1
Borrowed (or bummed) them from someone	283	25.6	145	25.3	138	25.9
I gave someone else money to buy them for me	144	13.0	93	16.2	51	9.6
Some other way*	130	11.8	63	11.0	67	12.6
A person 18 or older gave them to me	100	9.0	41	7.2	59	11.1
Took them from a store or family member	93	8.4	29	5.1	64	12.0
Bought them from a vending machine	43	3.9	18	3.1	25	4.7
Total	1,105	100.0	573	100.0	532	100.0

NOTE: *Some other way is defined as not buying cigarettes in a store, supermarket, discount store, or gas station, not borrowing (or bumming) them from someone else, not giving someone else money to buy them, not getting them from a person 18 or older, not taking them from a store or family member, and not buying them from a vending machine.

SOURCE: Adapted by CESAR from data from the Youth Risk Behavior Survey, DC Public Schools, 2007.

RISK FACTORS

The co-occurrence of substance use and other problem behaviors is an ongoing concern for both researchers and policymakers. The co-occurrence of risky behaviors and the impact of early drug use on subsequent behavior has been heavily documented in the criminal justice field.¹⁻⁴ This section highlights the results of McCurley and Snyder's (2008) analysis of data from the first two waves of the 1997 National Longitudinal Survey of Youth (NLSY97) and an analysis of select indicators from the 2007 DC YRBS. The results of both are consistent with previous research that finds a positive correlation between substance use and other problem behaviors among youth.

The Co-Occurrence of Substance Use Behaviors in US Youth Age 12 to 17

Between 1997 and 1998, self-reports were used to collect information on substance use and other problem behaviors from a nationally representative sample of youth age 12 to 17 for the NLSY97. A total sample of 15,300 youth were asked about past month alcohol and marijuana use and participation in delinquent/undesirable or criminal activities (e.g., belonging to a gang, carrying a handgun, being suspended from school, vandalizing property, etc.).

McCurley and Snyder (2008) found that many youth who reported using one of these substances also reported using other substances. For example, 23% of youth reported alcohol use in the past month. Nearly a third of those youth also reported smoking marijuana in the past month. In contrast, among those who did not report alcohol use, only 2% reported smoking marijuana. An estimated 9% reported smoking marijuana in the past month, and 81% of these youth reported also drinking alcohol. Conversely, only 17% of the youth who had not smoked marijuana reported drinking alcohol in the past month. Other findings included:

- The levels of reported substance-related behaviors increased with age so that youth age 15 to 17 reported higher levels of use than youth age 12 to 14. From age 12 to 17, alcohol use in the past month increased from 5 to 43% and marijuana use in the past month increased from 2 to 17%.

- Among youth age 12 to 14, an estimated 12% of past month drinkers and 20% of past month marijuana smokers also reported carrying a handgun in the past month. In contrast, an estimated 4% of past month non-drinkers and non-smokers reported carrying a handgun. Among youth age 15 to 17, an estimated 10% of past month drinkers and 15% of past month marijuana smokers also reported carrying a handgun in the past month, while an estimated 4% of non-drinkers and non-smokers reported carrying a handgun.

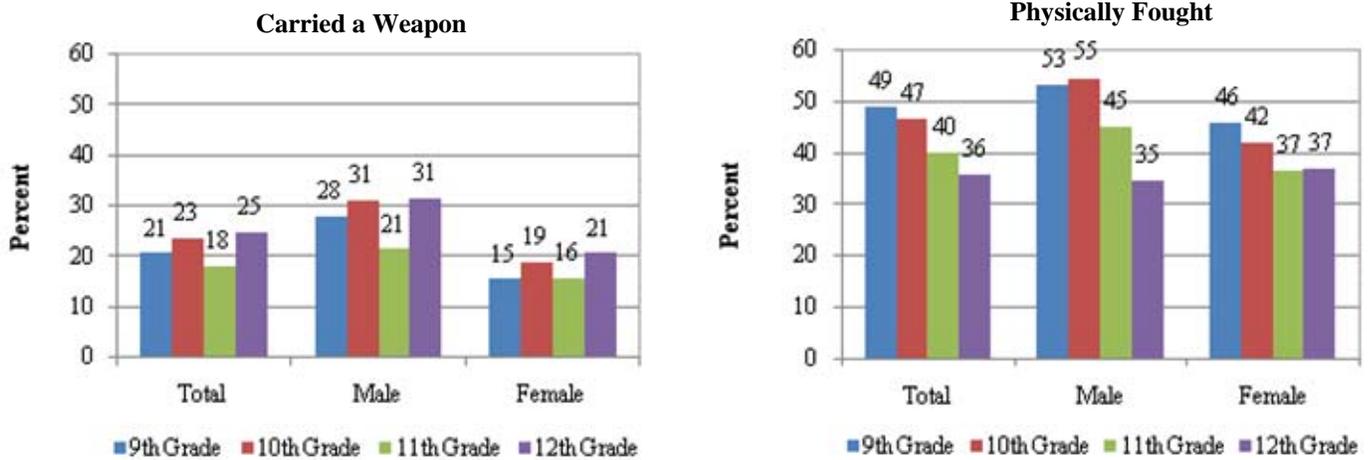
Risky Behavior of DC High School Students

The following analysis focuses specifically on eight indicators of rebelliousness and sexual activity: carried a weapon, carried a weapon on school property, physically fought, physically fought on school property, sex before age 13, any sex (ever had sex), sex with one or more persons in the past three months (current sex), and sex under the influence of alcohol or drugs.

Carried a Weapon. According to the 2007 DC YRBS, approximately one in five (roughly 2,700) high school students carried a weapon such as a gun, knife, or club in the past month. A greater percentage of males than females carried a weapon in the past month (28% of males and 17% of females). The lowest percentage of students who carried a weapon in the past month were males in the 11th grade (Figure 15). Approximately one in three male students in 9th, 10th, and 12th grades carried a weapon, while approximately one in five female students in these grades carried a weapon.

Carried a Weapon on School Property. While the majority of students who carried a weapon in the past month did not carry a weapon on school property, approximately 7% of all high school students (roughly 900 students) carried a weapon on school property. Males were more likely to carry a weapon on school property than females. Approximately 10% of female students in all grades carried a weapon on school property, while 7 to 12% of male students in each grade did the same. Eleventh graders were less likely than students in all other grades to carry a weapon on school property in the past month, while 12th graders were

Figures 15 and 16. Percentage of DC High School Students Who Carried a Weapon in the Past Month or Physically Fought in the Past Year, by Grade and Sex, 2007



NOTE: Percentages shown are rounded to the nearest whole number.

SOURCE: DC Youth Risk Behavior Survey, DC Public Schools, 2007. Please see appendix for additional information about data from the 2007 DC Youth Risk Behavior Survey.

the most likely to carry a weapon on school property in the past month. Approximately one in three 9th grade males who carried a weapon in the past month also carried a weapon on school property. Approximately one-quarter of 10th grade males and one-third of 11th and 12th grade males who carried a weapon in the past month also carried a weapon on school property. Similar percentages were found for female students, ranging from 29 to 34%.

Physically Fought. An estimated 44% of (approximately 5,400) high school students were in a physical fight one or more times in the past year. A greater percentage of males than females were in physical fights in the past year (48% of males and 41% of females). A greater percentage of students in 9th and 10th grades fought in the past year than students in 11th and 12th grades (Figure 16). Approximately half of all students in 9th grade were in a physical fight in the past year. Overall, our analyses indicated that as high school students moved through grades, the tendency for them to fight decreased.

Physically Fought on School Property. As with carrying a weapon, far fewer students fought on school property than off school property. Approximately one in five (roughly 2,300) high school students fought on school property in the past year. Overall, males were more likely than females to fight on school property in the past year,

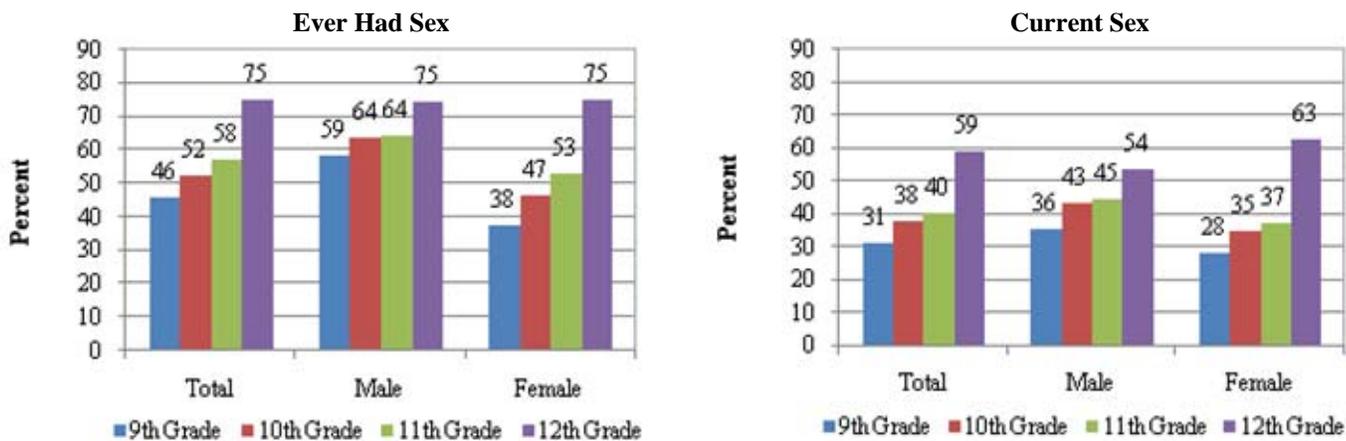
and 9th graders were more likely than students in all other grades to fight on school property. Approximately half of all 9th grade males, two-fifths of 10th grade males, and one-third of 11th and 12th grade males who were in a physical fight in the past year also fought on school property. Similar percentages were found for female students, ranging from 31 to 46%.

Ever Had Sex. An estimated 56% of DC high school students (approximately 5,700) had sexual intercourse at least once in their lifetime (ever had sex). While similar percentages were found between senior males and senior females—approximately 75% of males and females had ever had sex—a greater percentage of males had ever had sex in all other grades (Figure 17).

Sex Before Age 13. An estimated 12% of DC high school students (approximately 1,300) had sex before their thirteenth birthday. In each grade, the majority of these students were male. Approximately one-quarter of all 9th grade males (approximately 400 students) and one in five 10th, 11th, and 12th grade males had sex before age 13. In contrast, approximately 5 to 7% of high school females in all four grades had sex before age 13.

Current Sex. Approximately 4,000 DC high school students had sexual intercourse with one or more persons in the past three months (current sex). Roughly 31% of 9th graders were sexually active

Figures 17 and 18. Percentage of DC High School Students Who Have Ever Had Sex or Have Had Sex in the Past Three Months, by Grade and Sex, 2007



NOTE: Percentages shown are rounded to the nearest whole number.

SOURCE: DC Youth Risk Behavior Survey, DC Public Schools, 2007. Please see appendix for additional information about data from the 2007 DC Youth Risk Behavior Survey.

(Figure 18). A greater percentage of male 9th graders had current sex than females (36% vs. 28%). In contrast, by 12th grade, a greater percentage of females had current sex than males (63% of females and 54% of males). The greatest jump in percentages was for high school females between the 11th and 12th grades. While 37% of 11th grade females had current sex, 63% of 12th grade females had current sex. A greater percentage of 10th grade males had current sex than 9th grade males, and a greater percentage of 12th grade males had current sex than 11th grade males. There were no differences in current sex patterns between 10th and 11th grade males. The percentage of females who had current sex more than doubled from freshmen to senior year. In contrast, there was an estimated 50% increase in the percentage of males who had current sex from 9th to 12th grade.

Current Sex Under the Influence.

Approximately 17% of DC high school students (approximately 700) who had sex with one or more persons in the past three months had also drunk alcohol or used drugs before their last sexual encounter. An estimated one in five high school males and one in seven high school females who were currently sexually active had drunk alcohol or used drugs before their last sexual intercourse. A greater percentage of 9th and 10th grade males had sex under the influence of alcohol or drugs than their female counterparts, but in the 11th grade, the percentages were about equal.

Using YRBS Data to Examine Early and Current Alcohol or Marijuana Use and Engagement in Other Risky Behaviors

Alcohol Use Before Age 13. It has been established in previous studies that early alcohol use is correlated with engagement in risky behaviors, including problems with alcohol and a continuation of alcohol use through adolescence.⁵⁻⁷ Studies have also demonstrated that alcohol (and marijuana) use are important precursors to the use of other drugs, during late adolescence and into adulthood. Boys appear to be at greater risk for early initiation of alcohol (and marijuana) than girls. Thus, delaying the onset of use is an important target for prevention efforts.⁶ Our analysis of the 2007 DC YRBS data also suggest that early alcohol use is linked to regular or current alcohol use later in adolescence.

An estimated 25% of DC high school students drank alcohol before age 13 (early drinkers). A greater percentage of males than females were early drinkers (30% vs. 22%). Approximately one-third of students who were early drinkers also carried a weapon at least one day in the past month as compared to an estimated 17% of non-early drinkers (Table 4). Early drinkers were also more likely to have gotten in a physical fight in the past year or to have had sex in the past three months than non-early drinkers. Approximately 55% of early drinkers were involved in a physical fight, and

Table 4. Percentage of DC High School Students with Co-Occurring Substance Use and Other Risky Behaviors, 2007

	Had first drink of alcohol before age 13 (%)		Smoked marijuana before age 13 (%)	
	Yes	No	Yes	No
Carried a weapon in the past month	33	17	52	17
Involved in a physical fight in the past year	55	40	68	40
Had sex with one or more persons in the past three months	46	39	73	36

NOTE: Percentages shown are rounded to the nearest whole number.

SOURCE: Adapted by CESAR from data from the DC Youth Risk Behavior Survey, DC Public Schools, 2007.

46% were currently sexually active. Approximately 40% of non-early drinkers fought or were currently sexually active.

By running a risk statistic (an odds ratio), we have calculated the odds at which a DC high school student who drank alcohol before age 13 is more or less likely to currently use other drugs or continue to drink alcohol. Across all use indicators, early alcohol use was found to increase the chances of a high school student drinking and driving or past month substance use (Table 5). Early drinkers age 16 or older were nearly four times more likely to drink and drive in the past month than non-early drinkers age 16 or older. Early male drinkers age 16 or older were just as likely as early female drinkers age 16 or older to drink and drive in the past month. Early drinkers were three times more likely to drink

Table 5. Odds Ratio of Early Drinkers vs. Non-Early Drinkers for Past Month Engagement in Other Risky Behaviors, by Sex and Behavior, 2007

	All Students Odds Ratio*	Male Students Odds Ratio*	Female Students Odds Ratio*
Drinking and Driving (Age 16+)	3.9	3.6	4.0
Alcohol Use	3.1	3.4	3.2
Bingeing	2.9	3.6	2.2
Marijuana Use	2.0	2.7	1.5

NOTE: *All odds ratios significant at $p < .001$. Gender-based risk statistics make male-to-male and female-to-female comparisons only.

SOURCE: Adapted by CESAR from data from the DC Youth Risk Behavior Survey, DC Public Schools, 2007.

alcohol in the past month than non-early drinkers. Early drinkers were also nearly three times more likely to binge drink and two times more likely to smoke marijuana in the past month than non-early drinkers. Male early drinkers were more likely than female early drinkers to binge or smoke marijuana in the past month.

Current Alcohol Use. A greater percentage of current drinkers also engaged in other risky behaviors than those who did not drink in the past month (Table 6). For instance, of current drinkers, approximately 37% also carried a weapon such as a gun or knife on at least one day in the past month, and roughly 12% carried a weapon on school property in the past month. In contrast, approximately 11% of non-current drinkers carried a weapon in the past month, and 2% carried a weapon on school property in the past month. In addition, a significantly greater percentage of current drinkers got in a physical fight in the past year than non-current drinkers (59% vs. 33%) or had sex in the past three months (59% vs. 20%). Approximately two-thirds of students binged in the past month and had sex with one or more persons in the past three months. A greater percentage of males binged in the past month and had current sex than females.

Table 6. Percentage of DC High School Students with Co-Occurring Substance Use and Other Risky Behaviors, 2007

	Drank alcohol in past month (%)		Smoked marijuana in past month (%)	
	Yes	No	Yes	No
Carried a weapon in past month	37	11	46	13
Carried a weapon on school property in the past month	12	2	14	3
Involved in physical fight in past year	59	33	67	36
Involved in physical fight on school property in the past year	20	14	27	14
Had sex with one or more persons in the past three months	59	20	69	32

NOTE: Percentages shown are rounded to the nearest whole number.

SOURCE: Adapted by CESAR from data from the DC Youth Risk Behavior Survey, DC Public Schools, 2007.

Marijuana Use Before Age 13. Previous research on the effects of early marijuana use

suggests that the earlier the initiation of marijuana, the greater one’s chances of other drug use later in adolescence. Evidence in favor of the “gateway theory”—the theory that marijuana (and alcohol) is the precursor drug that may ultimately lead to other drug use—has been shown in numerous studies.⁸ The majority of researchers argue that children have higher risks of problem behaviors and drug problems in late adolescence if they were early adolescent marijuana users. Our analysis of the 2007 DC YRBS data found similar results.

An estimated 11% of DC high school students smoked marijuana for the first time before age 13 (early marijuana users). More males than females were early marijuana users (16% of males and 8% of females). Early marijuana use and engagement in risky behaviors followed a similar pattern to that described for early alcohol use (Table 4). Approximately half of early marijuana users also carried a weapon in the past month, two-thirds engaged in a physical fight in the past year and 73% had current sex. Only 17% of non-early marijuana users carried a weapon, 40% physically fought, and 36% had current sex.

Across all gender and age indicators, early marijuana use was found to increase the chances of a high school student’s current use of other drugs (Table 7). Early marijuana users were 4.6 times more likely to drink alcohol in the past month and 8.7 times more likely to use marijuana in the past month than non-early marijuana users. Male early marijuana users were more likely than females to have been current marijuana users.

Table 7. Odds Ratio of Early Marijuana Users vs. Non-Early Marijuana Users for Past Month Engagement in Other Drug Use, by Sex and Drug, 2007

	All Students Odds Ratio*	Male Students Odds Ratio*	Female Students Odds Ratio*
Alcohol Use	4.6	5.9	4.0
Marijuana Use	8.7	10.8	6.8
Cocaine Use	10.6	8.3	10.3

NOTE: *All odds ratios significant at $p < .001$. Gender-based risk statistics make male-to-male and female-to-female comparisons only.

SOURCE: Adapted by CESAR from data from the DC Youth Risk Behavior Survey, DC Public Schools, 2007.

Early marijuana users were 10.6 times more likely to use cocaine in the past month than non-early

marijuana users. Female early marijuana users were 10.3 times more likely to use cocaine in the past month than female non-early marijuana users, while male early marijuana users were 8.3 times more likely to use cocaine in the past month than male non-early marijuana users.

By initiating marijuana use before age 13, DC high school students have increased their chances more than tenfold of using cocaine, heroin, methamphetamine, or ecstasy later in adolescence (Table 8). Although an estimated 5 to 7% of DC high school students had ever used cocaine, heroin, methamphetamine, or ecstasy, early marijuana users were 10.7 times more likely to have ever used cocaine, 20.8 times more likely to have ever used heroin, 17.1 times more likely to have ever used methamphetamine, and 13.5 times more likely to have ever used ecstasy than non-early marijuana users. Male early marijuana users were more likely to have ever used cocaine, heroin, methamphetamine, or ecstasy than female early marijuana users.

Table 8. Odds Ratio of Early Marijuana Users vs. Non-Early Marijuana Users for Lifetime Use of Other Drugs, by Sex and Drug, 2007

	All Students Odds Ratio*	Male Students Odds Ratio*	Female Students Odds Ratio*
Cocaine Use	10.7	10.0	7.6
Heroin Use	20.8	22.0	10.6
Methamphetamine Use	17.1	17.0	10.3
Ecstasy Use	13.5	10.1	14.0

NOTE: *All odds ratios significant at $p < .001$. Gender-based risk statistics make male-to-male and female-to-female comparisons only.

SOURCE: Adapted by CESAR from data from the DC Youth Risk Behavior Survey, DC Public Schools, 2007.

Current Marijuana Use. As with alcohol, a greater percentage of current marijuana users engaged in other risky behaviors than non-current marijuana users (Table 6). Approximately 46% of current marijuana users also carried a weapon in past month, while 14% carried a weapon on school property. In contrast, only 13% of non-current marijuana users carried a weapon in the past month, while 3% carried a weapon on school property. A greater percentage of current marijuana users than non-current marijuana users were in physical fights

in the past year (67% vs. 36%) or had sex in the past three months (69% vs. 32%).

¹ McCurley, C. & Snyder, H.N. (2008). Co-occurrence of substance use behaviors in youth. *Juvenile Justice Bulletin*. Retrieved December 2008 from <http://www.ncjrs.gov/pdffiles1/ojjdp/219239.pdf>.

² Dembo, R, Pacheco, K, Schmeidler, J, Fisher, L, Cooper, S. Drug use and delinquent behavior among high-risk youths. *Journal of Adolescent Substance Abuse*. 1997; 6(2): 1-25.

³ Potter, CC, Jenson, JM. Cluster profiles of multiple problem youth: Mental health problem symptoms, substance use, and delinquent conduct. *Criminal Justice and Behavior*. 2003; 30(2): 230-252.

⁴ Sullivan, CJ, Veysey, BM, Dorangrichia, L. Examining the relationship between problem history and violent offending in high-risk youth. *Journal of Offender Rehabilitation*. 2003; 38(2): 17-39.

⁵ Kosterman, R, Hawkins, JD, Guo, J, Catalano, RF, Abbott, RD. The dynamics of alcohol and marijuana initiation: Patterns and predictors of first use in adolescence. *American Journal of Public Health*. 2000; 90: 360-366.

⁶ Kandel DB, Yamaguchi K, Chen K. Stages of progression in drug involvement from adolescence to adulthood: Further evidence for the gateway theory. *Journal of Studies on Alcohol*. 1992; 53: 447-457.

⁷ Stueve, A, O'Donnell, LN. Early alcohol initiation and subsequent sexual and alcohol risk behaviors among urban youths. *American Journal of Public Health*. 2005; 95: 887-893.

⁸ Brook, JS, Balka, EB, Whiteman, M. The risks for late adolescence of early adolescent marijuana use. *American Journal of Public Health*. 1999; 89: 1549-1554.

PROTECTIVE FACTORS

The most valuable information available on protective factors is from the National Survey of Drug Use and Health (NSDUH). This section assesses perceived risk or disapproval of alcohol, cigarettes, or marijuana use, exposure to prevention messages, and familial communication about alcohol, tobacco, and other drug use.

Perceptions of Young Household Residents

Perceived Risk. Based on annual averages for 2005–2006, at least 72% of DC residents age 12 to 17 perceived having five or more drinks of alcohol once or twice a week as a moderate or great risk (Table 9). At least 83% perceived smoking one or more packs of cigarettes a day as a moderate or great risk, and at least 65% perceived smoking marijuana once or twice a week as a moderate or great risk. Youth were more likely to perceive smoking one or more packs of cigarettes a day as a great risk than having five or more drinks of alcohol once or twice a week, smoking marijuana once or twice a week, or smoking marijuana once a month or more.

Disapproval. At least 81% of DC residents age 12 to 17 either somewhat or strongly disapproved of someone their age having one or two drinks of alcohol nearly every day and at least 82% disapproved of someone their age smoking one or more pack of cigarettes a day (Table 9). An estimated 72 to 83% of youth somewhat or strongly disapproved of someone their age smoking marijuana or hashish once a month or more.

Media and Communication. At least 83% of DC residents age 12 to 17 had seen or heard an alcohol or drug prevention message in or out of school from sources such as posters, pamphlets, radio, or TV during the past year (Table 10). An estimated 49 to 62% of youth talked to at least one parent about the dangers of ATOD use during the past year. There was a significant increase in the percentage of youth who talked with at least one parent about the dangers of ATOD use in the past year between the 2002–2003 and 2003–2004 surveys.

Table 9. DC Residents Age 12 to 17 Perceptions of Alcohol, Tobacco, or Marijuana Use, 2005–2006

Age 12 to 17 Population, 2004–2006 = 35,651*	95% Prediction Interval	Estimated Number
Alcohol		
Percentage of Youth Perceiving Moderate or Great Risk of Harm from Having Five or More Drinks of Alcohol Once or Twice a Week	72.81-80.37	25,900-28,700
Percentage of Youth Who Somewhat or Strongly Disapproved of Someone Their Age Having One or Two Drinks of Alcohol Nearly Ever Day	81.15-89.80	28,900-32,100
Cigarettes		
Percentage of Youth Perceiving Moderate or Great Risk of Harm from Smoking One or More Packs of Cigarettes a Day	83.80-90.42	29,800-32,300
Percentage of Youth Who Somewhat or Strongly Disapproved of Someone Their Age Smoking One or More Packs of Cigarettes Every Day	82.13-90.53	29,300-32,300
Marijuana		
Percentage of Youth Perceiving Moderate or Great Risk of Harm from Smoking Marijuana Once or Twice a Week	65.84-76.39	23,500-27,300
Percentage of Youth Who Somewhat or Strongly Disapproved of Someone Their Age Smoking Marijuana or Hashish Once a Month or More	72.36-82.05	25,700-29,300

NOTE: *Population counts provided by SAMHSA’s Office of Applied Studies (OAS).

SOURCE: 2005 and 2006 National Survey of Drug Use and Health, OAS, SAMHSA.

Table 10. DC Residents Age 12 to 17 Exposure to Information About Alcohol, Tobacco, and Other Drugs, 2005–2006

Age 12 to 17 Population, 2004–2006 = 35,651*	95% Prediction Interval	Estimated Number
Media and Communication		
Percentage of Youth Who Were Exposed to Prevention Messages	83.06-90.31	29,600-32,200
Percentage of Youth Who Talked To At Least One Parent About Alcohol, Tobacco, and Other Drugs During the Past 12 Months	49.45-61.19	17,600-21,900

NOTE: *Population counts provided by the SAMHSA’s Office of Applied Studies (OAS).

SOURCE: 2005 and 2006 National Survey of Drug Use and Health, OAS, SAMHSA.

CONCLUSIONS & IMPLICATIONS FOR POLICY

This report was designed to follow the federal prevention model and support APRA's movement towards assessing the District's prevention programs by monitoring priority risk factors and targeted outcomes for youth. This analysis was meant to assist in addressing the following three questions and to begin the process of identifying measures for priority risk factors and targeted outcomes:

- What populations are most at risk for substance abuse and its consequences?
- How can we identify the youth most at risk for substance use or abuse?
- What is the impact of early drug use on other problematic behaviors?

Our process in addressing these three questions included assessing current DCEOW consequence and consumption data and conducting an in-depth analysis of the 2007 DC Youth Risk Behavior Survey (YRBS). We identified measures for each of the first three steps of the logic model presented in the Introduction. These measures highlight an elevated level of risk for high school males and establish the connection between early alcohol or marijuana use and other problematic behaviors such as fighting, carrying a weapon, having sex, drinking and driving, and the likelihood to use other illicit drugs. However, additional research is necessary to better answer each of these questions. Key findings are highlighted below followed by recommendations for future research and implications for future substance abuse prevention planning in the District.

Consequences

Arrests, drinking and driving, and abuse/dependence are the key consequences of alcohol and other drug abuse by DC youth. There were 3,266 juvenile arrests in 2007; nearly one in ten was drug related. Young black males were more likely to be arrested than other youth. Although this may be a reflection of the general racial demographics of the District, other factors which prevention programs have been designed to address,

such as the lack of a strong connection to school, family or community, may also play a role.

According to the 2007 DC YRBS, approximately one in three students age 16 or older who binge drank also drove drunk in the past month, while 69% of the students age 16 or older who drank and drove in the past month also binge drank in the past month. Early drinkers were nearly four times more likely to drink and drive than non-early drinkers. Male early drinkers age 16 or older were just as likely as female early drinkers age 16 or older to drink and drive.

According to annual averages from the 2005–2006 NSDUHs, 900 to 1,800 DC residents age 12 to 17 abused or were dependent on alcohol in the past year, while 1,000 to 2,100 abused or were dependent on illicit drugs.

The consequences included in this report meet the quality standards established by the DCEOW. However, youth are clearly impacted by other consequences as well and as additional data become available to the DCEOW, they will be reviewed and added to this assessment.

Consumption

Alcohol and marijuana were the most frequently used licit and illicit drugs by DC youth. According to annual averages from the 2005–2006 NSDUHs, approximately one-quarter to one-third of DC household residents age 12 to 20 drank in the past month. DC residents age 12 to 17 more frequently used marijuana than any other illicit drug—1,500 to 3,400 residents. Marijuana was also the most frequently used illicit drug among high school students and juvenile arrestees. Juvenile arrestees were far more likely to test positive for marijuana than any other drug. According to the YRBSS Youth Online, trends in alcohol and illicit drug use by DC high school students have been fairly stable in recent years; tobacco use decreased significantly between YRBS survey year 2003 and YRBS survey year 2007. A comparative analysis of DC students and Baltimore students from the 2007 Youth Online found that DC students were more likely to have drunk alcohol in the past month or to have ever

used cocaine, heroin, methamphetamine, or ecstasy than Baltimore students.

Drug Accessibility

As of 2007, there were 1,127 licensed tobacco retailers and 1,476 licensed alcohol retailers in DC. APRA currently funds 11 evidence-based prevention programs and a wide range of community prevention strategies for at-risk youth in DC.

DC high school students have a variety of methods for accessing alcohol, tobacco, and other drugs. Regular tobacco retailer compliance checks indicate that the majority of tobacco retailers appear to be adhering to sales laws. However, according to the 2007 DC YRBS, approximately one in three students obtained their tobacco in stores or were given alcohol by someone else. Approximately one in five students gave someone else money to buy alcohol for them. Females were more likely than males to have been given alcohol, while males were more likely than females to have purchased alcohol at a commercial retailer. According to Youth Online, the percentage of youth being offered, sold, or given an illegal drug on school property decreased between YRBS survey year 2003 and YRBS survey year 2007.

Risk Factors

The eight indicators included in the 2007 DC YRBS and assessed in this report are: carried a weapon, carried a weapon on school property, physically fought, physically fought on school property, sex before age 13, any sex (ever had sex), sex with one or more persons in the past three months (current sex), and sex under the influence of alcohol or drugs. As high school students move through grades, their tendency to get in a physical fight decreases. Seniors were more likely to carry a weapon on school property in the past month than students in all other grades. In general, males were more likely than females to have physically fought or carried a weapon.

By the 12th grade, a greater percentage of female high school students had current sex than males. Males were, however, more likely to have had sex before age 13. A greater percentage of 9th and 10th grade males had sex under the influence of alcohol or drugs than 9th and 10th grade females. Approximately two-thirds of students engaged in

both past month bingeing and current sex. Males were more likely than females to have binged in the past month and to have had current sex.

A greater percentage of current drinkers or current marijuana users engaged in other risky behaviors than non-current drinkers or marijuana users. Males were more likely to be current marijuana users, while females were more likely to be current drinkers. Males were also more likely than females to be early drinkers or early marijuana users. Early drinkers age 16 or older were nearly four times more likely than non-early drinkers to drink and drive in the past month and two to three times more likely to drink, binge, or smoke marijuana in the past month. Male early drinkers age 16 or older were as likely as female early drinkers to drink and drive. Early marijuana users were more than 10 times more likely to use other illicit drugs (cocaine, heroin, methamphetamine, or ecstasy) later in adolescence than non-early marijuana users. Male early marijuana users were more likely than female early users to have ever used these drugs.

Protective Factors

As in prior sections of this report, the data indicate that alcohol and marijuana are the most important drugs for prevention programs to focus on. Based on annual averages from 2005–2006 NSDUHs, DC household residents age 12 to 17 perceived a greater risk of smoking one or more packs of cigarettes a day than binge drinking or using marijuana once or twice a week. More than three-quarters of these youth somewhat or strongly disapproved of smoking one or more packs of cigarettes a day or having one or two drinks of alcohol nearly everyday, while more than 72% somewhat or strongly disapproved of using marijuana once a month or more. An estimated 49 to 62% of residents age 12 to 17 spoke with at least one parent about the dangers of alcohol, tobacco, or other drug use during the past year.

Implications for Policy

Based on the data presented in this report, a case can be made for focused prevention programs in the District. Alcohol and marijuana are the most frequently used drugs by DC youth and the key consequences of alcohol and other drug use are crime, driving under the influence, and abuse/dependence. Early use of alcohol or

marijuana increases the likelihood that DC youth ever use other drugs or engage in other risky behaviors such as drinking and driving. In general, male high school students were more likely than females to be early drinkers or early marijuana users and to have also engaged in other risky behaviors. Although most DC youth disapproved of someone their age smoking one or more packs of cigarettes a day, having one or two drinks of alcohol nearly everyday, or using marijuana once a month or more, they perceived a greater risk in smoking one or more packs of cigarettes a day than binge drinking or using marijuana once or twice a week.

Additional research should be conducted to better understand the scope of the above issues. For instance, current survey data do not adequately capture emerging trends. Consequently, qualitative research, such as regular interviews with key leaders and focus groups should be conducted on a regular basis to ensure that emerging trends are identified and addressed by prevention programs in a timely fashion. In addition, data on risk and protective factors in current state and national surveys are limited or non-existent. These indicators are especially important to youth substance abuse prevention in DC and should be adequately measured and reported in other annual state surveys. Additional research (e.g., interviews with users) and other activities such as geo-coding licit drug purchases and illicit drug markets and conducting alcohol retailer compliance checks would provide valuable information about the accessibility of drugs and other risk and protective factors of substance use affecting DC youth.

To address these issues and delay the onset of alcohol and marijuana use, prevention programs should be identified and implemented to focus on:

- Educating youth (particularly males) about the risks of alcohol and marijuana while allowing for the inclusion of information about other drugs as needed;
- Reducing impulsive and aggressive behavior by youth while increasing social competence;
- Educating retailers, youth, and parents/guardians about alcohol and tobacco sales laws (e.g., straw purchase, fake IDs);

- Educating youth (particularly males) and parents/guardians about the dangers of early drinking and early marijuana use, and
- Supporting and encouraging parents/guardians to talk to their youth regularly, and to set clear rules about the use of alcohol, tobacco, and other drugs.

APPENDIX

The analyses presented in this report are constrained by the inherent limitations in the data used. For instance, age ranges differ across data sets and many racial breakdowns were not possible due to small sample sizes. The following section provides notes, methodologies, and limitations of each data set utilized in this report in the order that each source appears in the document.

Metropolitan Police Department

All Metropolitan Police Department statistics presented in this document are based on preliminary DC index crime data. Data do not represent official statistics submitted to the Federal Bureau of Investigation (FBI) under the Uniform Crime Reporting program (UCR). Preliminary offenses are based on the DC criminal code and not the FBI offense classifications. Statistics are subject to change due to a variety of reasons, such as a change in classification, determination that certain offense reports were unfounded, or late reporting. Comparisons between MPD preliminary data as published here and the official crime statistics published by the FBI under the UCR Program may be inaccurate or misleading. All homicide data are verified through the Violent Crimes Branch (VCB).

Drug-related arrest codes used in this analysis include the following: distribution includes distribution and conspiracy to distribute charges; possession includes possession and possession of drug paraphernalia charges; other narcotic violations include violation of pharmacy laws, drug manufacturing, forged narcotic prescription, and any other narcotic violation (offense code 1826) which may include LSD possession, felony and misdemeanor Preludin possession, and misdemeanor heroin possession.

Fatality Analysis Reporting System

The National Highway Traffic Safety Administration (NHTSA) defines a crash as an event that produces injury and/or property damage, involves a motor vehicle in transport, and occurs on a traffic way or while the vehicle is still in motion after running off of the traffic way. A fatal crash is defined as a police-reported crash involving a motor vehicle in transport on a traffic way where at least one person dies within 30 days of the crash.

Drinking drivers killed in fatal crashes were those drivers with measurable or estimated blood alcohol concentrations (BAC) of 0.01 grams per deciliter or above who died within 30 days of the crash. NHTSA estimated driver blood alcohol concentration levels when the administration or results of alcohol tests were unknown.

Youth Risk Behavior Survey

The Youth Risk Behavior Survey (YRBS), a part of the National Youth Risk Behavior Surveillance System (YRBSS), reports health-risk behaviors of middle school and high school students in cities and states across the country. The DC Department of Education, DC Public Schools funds the YRBS.

The 2007 DC YRBS sampled 43 eligible high schools (regular public and charter schools containing grades 9, 10, 11, or 12); 40 participated. Of the 5,695 sampled students, 3,900 submitted questionnaires. A final sample of 3,838 questionnaires was available after data editing. Data were weighted to reflect the likelihood of sampling each public and charter high school student in DC, and to reduce bias by compensating for differing patterns of non-response. Public school students who were not in school on the day the survey was administered, or who attended a vocational or alternative high school are not included in the YRBS sample. High school student racial breakdowns were not possible due to small sample sizes.

Data were not reported when less than 100 students of a specific subgroup responded (unweighted). The unweighted number of students sampled and the extrapolated weighted number of students can be found in Appendix Table 1. Only students with a valid response provided for each question, sex, and grade were analyzed. Thus, weighted percentages do not include any missing observations. Although the YRBS collects data from public and charter high school students, the text in this document has referred to this population solely as high school students.

Caution should be taken in the interpretation of these survey-based estimates as each estimate contains a degree of error not presented in this report. When comparisons were made in this report

across sex or grade, a statistical test (t-test) was conducted comparing the mean response for each gender or grade of the behavior in question. Differences were reported when the difference was statistically significant at $p < 0.05$.

Appendix Table 1. Unweighted and Weighted Number of Students in DC Public and Charter High Schools as reported in the 2007 YRBS

	Unweighted Number*	Weighted Number**
9th Grade		
Total	1,288	3,954
Male	550	1,682
Female	735	2,256
Unknown	3	15
10th Grade		
Total	1,005	3,855
Male	376	1,479
Female	618	2,319
Unknown	11	57
11th Grade		
Total	827	3,313
Male	325	1,363
Female	496	1,925
Unknown	6	25
12th Grade		
Total	557	2,348
Male	226	936
Female	329	1,396
Unknown	2	16
Missing/Other/Ungraded Grade		
Total	161	780
Male	19	90
Female	20	67
Unknown	122	622
Totals		
Total	3,838	14,249
Male	1,496	5,551
Female	2,198	7,963
Unknown	144	735

NOTES: *The unweighted n is the number of students who completed the YRBS. **The weighted n is extrapolated from the unweighted n based on a weighting formula that reflects the likelihood of sampling each public and charter high school student in DC.

SOURCE: DC Youth Risk Behavior Survey, DC Public Schools, 2007.

National Survey on Drug Use and Health

The National Survey of Drug Use and Health (NSDUH) is administered by the Substance Abuse and Mental Health Services Administration (SAMHSA) of the US Department of Health and Human Services. SAMHSA's Office of Applied Studies reports the national survey data at state and substate levels.

The NSDUH utilizes a Bayesian model approach to estimating substance use and abuse rates in DC for residents age 12 or older. The NSDUH's multivariate statistical estimation model uses survey data on substance use disorders from DC and other states, census demographic data, and substance abuse indicator data from DC (e.g., deaths, arrests, and treatment admissions). Even though NSDUH collects interview data from every state, the statistical modeling of data from the national census and other indicator data is necessary in order to obtain reliable estimates at the state and substate levels.

The 2005 NSDUH sampled 319 DC residents age 12 to 17 with 272 responding out of an estimated age 12 to 17 population of 34,763 (overall weighted response rate of 87.27%). The 2006 NSDUH sampled 332 DC residents age 12 to 17 with 279 responding out of an estimated age 12 to 17 population of 38,255 (overall weighted response rate of 86.59%). Weighted estimates are pooled and averaged across multiple years of data in order to obtain sufficient sample sizes for analysis and to obtain more reliable estimates. By nature of this pooling procedure, consecutive pooled surveys are correlated with one another (e.g., 2004–2005 and 2005–2006). Differences were reported across pooled surveys when the difference was statistically significant at $p < 0.05$.

National Capital Poison Center, Toxic Exposure Surveillance System

Calls made to the poison control center regarding exposures to stimulants and street drugs were obtained from the National Capital Poison Center, American Association of Poison Control Centers, Toxic Exposure Surveillance System. The data reported were printed on September 22, 2008 at 11:15 am. Cases with unknown age were not included in this report, thus the number of individuals age 6 to 19 reported may be lower than

the true number of toxic exposure calls for individuals age 6 to 19.

HIV/AIDS Administration

AIDS reporting in DC began in 1985 by the DC Department of Health's (DOH) HIV/AIDS Administration as confidential name-based reporting. Newly reported and living AIDS cases presented in this report were received on February 6, 2009 from the HIV/AIDS Administration per a special data request. Both newly reported and living AIDS cases in this report are based on the age at diagnosis and are as of August 27, 2008. An "AIDS case" refers to a person with a diagnosis of HIV infection and a later diagnosis of AIDS or a person with a concurrent diagnosis of HIV infection and AIDS.

Surveillance of HIV and AIDS in DC is done both passively and actively. Only confirmed tests of HIV infection or progression to AIDS are accepted (anonymous tests are not reported). Data are received "passively" (provider sends report out to DOH) and "actively" (DOH investigates potential cases by going to source or other provider) from a variety of sources (hospitals, private physicians' offices, community based organizations, clinics, and labs). In DC, approximately 90% of HIV/AIDS case surveillance consists of active surveillance.

The DOH knows that there are more people with HIV or AIDS in DC than reported. With a better diagnosis of the virus, the reported numbers will increase. The HIV/AIDS Administration admits that adjustments for delays in reporting may not have been made to the data. Therefore, the number of cases reported in recent years may not reflect all case diagnoses during that year. Thus, the number of AIDS cases reported may increase as new reports of cases are received.

Pretrial Services Agency

The District of Columbia Pretrial Services Agency does not conduct urinalysis testing on all arrestees for drug substances. Percentages shown in the report are of juvenile arrestees actually tested for drug substances. A juvenile can test positive for more than one drug, thus percentages may not add up to 100. Each year represents a federal fiscal year beginning October 1st and ending September 30th.

Youth Risk Behavior Surveillance System Youth Online

The Youth Risk Behavior Surveillance System (YRBSS) Youth Online monitors priority health-risk behaviors and the prevalence of obesity and asthma among youth and young adults. Youth Online includes a national school-based survey conducted by the Centers for Disease Control and Prevention (CDC) and state, territorial, tribal, and local surveys conducted by state, territorial, and local education and health agencies and tribal governments.

Youth Online has the ability to compare weighted YRBS data from the U.S., multiple states, multiple cities, or for one state or city across multiple years to show differences in reported risky behaviors for youth and young adults. Youth Online reports YRBS data for the District of Columbia from 1993 through 2007.

Differences across years for DC high school students or between DC and Baltimore high school students found in this report were determined by using statistical tests (t-tests). Differences were reported when the difference was statistically significant at $p < 0.05$. Changes over time were also statistically significant when $p < 0.05$.

All limitations of YRBS data are also limitations of the YRBSS Youth Online data. When comparisons were made between DC YRBS survey year 2003 and YRBS survey year 2007 using Youth Online, statistical tests were conducted solely on DC YRBS 2003 and 2007. Comparisons of the 2005 DC YRBS to the 2007 DC YRBS were not made in this report due to changes in survey methodology. During the administration of the 2005 DC YRBS, the methodology was altered, resulting in data that appear skewed from previous (1997, 1999, 2001, and 2003) and subsequent (2007) trends. In 2007, a contractor collected the data, however, volunteers administered the survey in 2005. In addition, the response rates from the two surveys differed substantially. Since the limitations of the YRBS are also limitations of Youth Online, analyses using the 2005 DC YRBS were not conducted using Youth Online.