SUBSTANCE USE AND OUTCOMES
MARYLAND STATE EPIDEMIOLOGICAL PROFILE

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EXECUTIVE SUMMARY

The Maryland Statewide Epidemiological Outcomes Workgroup (SEOW) is pleased to present *Substance Use and Outcomes: Maryland State Epidemiological Profile*. This report provides the latest findings on the use of and consequences associated with alcohol, tobacco, and drug use in Maryland. The purpose of the SEOW is to provide current and useful data to policy makers, providers, and citizens in order to support evidence-based information necessary for state and county planners and other interested stakeholders in determining substance use prevention and treatment priorities. To achieve this mandate, the SEOW monitors and analyzes over a dozen different data sources to provide information on key indicators in several domains: substance use disorders; factors associated with use and consequences of use; treatment for substance use disorders; and mental health status. In this edition of the Epidemiological Profile, we also highlight state policies intended to address the epidemic of opioid overdose and overdose prevention.

Significant changes in data sets utilized by the SEOW in this report impacts the reporting of several indicators. The National Survey on Drug Use and Health (NSDUH) experienced significant changes in 2015 and 2016, which may make comparisons to earlier years unreliable, particularly for prescription drug use. Charts displaying estimates from a single year of data indicate these measures are no longer comparable to previous years, thus we will begin to look at trends for these indicators from 2016 forward. In addition, the change from ICD-9 to ICD-10 in October 2015 makes it unreliable to compare the 2016 HSCRC data to previous years. The HSCRC charts found in this report only depict findings from 2016 HSCRC and will be used to compare against future years of data. Historical estimates using the ICD-9 codes can be found in the previous state epidemiological profiles found on our website. A full list of the data sources used in this report and accompanying descriptions can be found in the appendix.

In this report, we examine substance use overall, as well as focus on at-risk populations, including children and young adults. The manner and frequency with which individuals consume harmful substances can lead to substance-related consequences- i.e., the social, economic, and health problems associated with the excess use of alcohol, tobacco, and drugs. We provide insight into hospitalizations, poisonings, motor vehicle crashes, fatalities, and other adverse consequences associated with substance use. Treatment indicators provide valuable information on treatment patterns, substances implicated in substance use disorders, and met and unmet needs. In response to national and state mandates to integrate prevention, treatment, and recovery efforts for substance use and mental health, we provide data on mental health status among Maryland citizens. Finally, we provide information on two important statewide initiatives intended to reduce drug use and overdose: the Prescription Drug Monitoring Program and Opioid Response Program.
KEY FINDINGS

Alcohol Use and Consequences
- Almost 56 percent of Maryland citizens aged 12 or older consume alcohol every month.
- Binge drinking among young adults aged 18-25 remains high.
- Both past-month and binge-drinking among underage youth are higher among Maryland youth than their national peers.
- The proportion of fatal and non-fatal motor vehicle crashes involving alcohol and/or drugs continues to decline in Maryland.
- Maryland mortality rates for conditions associated with alcohol remain lower than the national average and continue to show reductions over time.
- Per capita alcohol sales in Maryland remain lower than the national average. Spirits sales have increased in the past year, and are purchased more frequently than either beer or wine.

Tobacco Use and Consequences
- Tobacco use by Maryland citizens remains lower than the national average.

Prescription and Illicit Drugs
- Although most drugs, including prescription pain-killers and illicit drugs, are used less frequently by Maryland citizens compared to the rest of the nation.
- Cocaine use in Maryland has increased in recent years, and now matches the prevalence nationally among those 12 years and older.
- All substance use by young adults aged 18-25 remains high.
- Marijuana use continues to increase among Maryland residents. Past-month marijuana use among Marylanders aged 12 years and older remains higher and is increasing at a faster rate than their peers nationally.
- Marylanders age 12-17 years reported a decrease in past-month marijuana use in 2016, although the rate is still higher than reported by their national peers.
- Past-month marijuana use among Marylanders aged 18-25 years remains higher and is increasing at a significantly faster rate than their national peers.
- Substances implicated most frequently in intentional poisonings include heroin, unknown opioids, benzodiazepines, alcohol, marijuana and marijuana homologs (synthetic marijuana), prescription opioid analgesics, and dextromethorphan combinations.

Mental Health
- In Maryland, one out of six adults aged 18 or older report having at least one indicator of mental illness in the past year.
- The percentage of Maryland youth aged 12-17 who have had at least one major depressive episode in the past year continues to increase.
• Among Maryland residents in treatment for a substance use disorder, the prevalence of a co-existing mental health disorder has increased from 33.4% in fiscal year 2008 to 36.5% in fiscal year 2015.

Treatment Admissions for Substance Use Disorders
• Heroin, other opioids, and alcohol are the top three most frequent substances of abuse by Maryland citizens entering State-supported treatment programs.
• Heroin and other opioids accounted for 66.1% of all 2015 Maryland treatment admissions.
• In 2016, 5.7% of Maryland citizens reported they needed treatment for alcohol use but failed to receive it.

Policy Initiatives in Maryland
• In 2013, the Maryland Prescription Drug Monitoring Program was implemented.
• An important state initiative, the Opioid Misuse Prevention Program, focuses on reducing opioid misuse, opioid overdoses and overdose fatalities in Maryland through evidence-based prevention and intervention strategies.
• The Opioid Response Program is another state initiative intended to provide access to naloxone and overdose education to reduce opioid overdose deaths.
• The Maryland Strategic Prevention Framework is a statewide program to prevent and reduce underage and youth binge drinking since rates continue to exceed rates of other substances used by Maryland youth.

CONCLUSIONS
Findings suggest that alcohol use—and the consequences of use—remain problematic, especially among young adults aged 18-25. As well, young adults aged 18-25 remain the highest users of all substances monitored in this report. Past legislation in the state to allow use of marijuana for medical purposes and the decriminalization of possession of small amounts of marijuana, indicates trends in marijuana use should continue to be monitored. The non-medical use and misuse of prescription opioid analgesics and benzodiazepines remain current and growing problems. Data characterizing harm reduction strategies, including naloxone distribution, fentanyl test strips, and access to pharmacological therapies, historically have been either uncommon in practice or challenging to collect. However, a number of state initiatives expanding the reach of these tools will help reduce the harms associated with substance use and allow for additional evidence generation.

Maryland has implemented significant policy initiatives to combat alcohol and substance use across the state. With the 2013 implementation of the State of Maryland’s Prescription Drug Monitoring Program, monitoring the use of and treatment admissions for prescription medications with addiction potential will become increasingly important. The state also launched the Opioid Response Program (ORP) dedicated to increasing education about and
access to naloxone, a potent opioid antagonist demonstrated to save lives. The Opioid Misuse Prevention Program (OMPP) provides jurisdictions with resources to prevent opioid use and overdose on the local levels. In combatting underage and young adult binge-drinking, the second wave of the Maryland State Prevention Framework Program (MSPF) has helped launch new prevention initiatives across the state.

Identifying trends in overdose deaths and hospitalizations related to prescription medications will remain a focus of future SEOW efforts. As well, the SEOW will continue to support alcohol reduction efforts aimed at underage and young people. Finally, the SEOW will closely monitor the use of and consequences associated with the growing trends substance use in Maryland, regionally, and nationally.
MARYLAND DEMOGRAPHIC SNAPSHOT

Maryland is the 24th most populous state in the US, with a total population of over six million citizens. Maryland remains one of the most densely populated states and among the states with the highest percentage of residents born outside of the country (14%).

Individuals aged 18 – 64 years account for 63% of the state’s population, while individuals under 18 years of age and those age 65 years and older account for 23% and 14% of the population, respectively. The majority of the Maryland population is white (60%), and the state has a large black or African American community (30%). Asians account for 6% of the population, and American Indian and Native Alaskans for 0.6%. Marylanders who identify with two or more races account for 2.6% of the population; among all races, 9% of the population identifies as Hispanic or Latino.

In Maryland, 89% of adults age 25 years and over have completed high school or more, with 37% of Marylanders having attained a Bachelor’s degree or greater. Of people under age 65 years, 7% have a disability and 9% lack health insurance. Of those age 16 years and greater, 68% are in the civilian labor force. The median household income is estimated at $74,149, one of the highest in the nation. However, ten percent of Marylanders live in poverty.

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ALCOHOL, TOBACCO, AND DRUGS: USE AND CONSEQUENCES

Alcohol Use

Alcohol remains the most commonly used substance by Maryland citizens, with almost 56% of Marylanders aged 12 or older reporting at least one alcoholic beverage in the past 30 days—nearly 5% higher than the national average.

Binge drinking by young adults aged 18-25 is on the rise.

Drinking and binge drinking among underage drinkers aged 12-20 has declined in recent years. The total number of fatal and non-fatal motor vehicle crashes involving alcohol continues to decline in Maryland.

Among underage drinkers, impaired injury crashes declined minimally but impaired fatal crashes decreased substantially.
Past-Month Alcohol Use

- Since 2010, past-month alcohol use in Maryland has remained constantly higher than national use, with almost 56% of all state citizens aged 12 and older reporting use in 2016.
- While US estimates remained constant, past-month alcohol use in Maryland has slightly increased between 2003-2016.

Data Source: NSDUH 2003-2016
In 2017, the average number of drinks consumed by Marylanders was lower than the national average in all age groups.

Among past-month drinkers, individuals aged 25 and under reported greater per occasion alcohol consumption compared to other age groups.

Data Source: BRFSS 2017
Past-Month Binge Drinking

- Past-month binge drinking is defined as males drinking five or more drinks and females drinking four or more drinks on the same occasion on at least one day in the past 30 days.
- Marylanders aged 12 and older reported past-month binge drinking more frequently than peers nationally, despite a higher percentage of Marylanders acknowledging the risk of binge drinking.

Data Source: NSDUH 2016
• Past-month binge drinking was the highest among young adults aged 18-25.
• In 2016, the percentage of Maryland young adults reporting past-month binge drinking surpassed the national average of 38.7%.

![Graph: Past-month Binge Drinking vs Perception of Risk from Binge Drinking, Age 18-25 years]

• Despite higher perception of risk from binge drinking compared to nationally, the percentage of adults aged 26 and older in Maryland reporting past-month binge drinking (25.4%) in 2016 surpassed the most recent national average (24.5%).

![Graph: Past-month Binge Drinking vs Perception of Risk from Binge Drinking, Age 26+]

Source: NSDUH 2016
Alcohol Consumption by Type

- In 2015, spirits continued to surpass beer as the most commonly consumed type of alcoholic beverage in Maryland.
- The overall trend of per capita ethanol consumption for the state is similar to the national trend (data not shown) except that Maryland observed recent increases in sales of spirits.

Data Source: AEDS 2007-2015

- Per capita consumption of spirits was consistently higher in Maryland than in the nation (data not shown) during 2007-2015.

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ALCOHOL CONSEQUENCES

Alcohol Abuse/Dependence

- In Maryland, past-year alcohol abuse/dependence decreased from 6.6% (2015) to 6.0% (2016).

- Past-year alcohol abuse/dependence among children aged 12-17 continued to decline across the state and nation.

Data Source: NSDUH 2003-2016
Motor Vehicle Crashes

All Ages

- The total number of motor vehicle crashes in Maryland decreased from 120,220 (2016) to 114,848 (2017).
- The percentage of crashes involving alcohol and/or drugs out of all crashes in Maryland decreased from 8.5% (2008) to 5.8% (2017).

In 2017, there were an estimated 517 fatal crashes (resulting in at least one fatality) and 34,518 injury crashes (resulting in at least one non-fatal injury) statewide. Almost one third (32.3%) of fatal crashes and 6.3% of injury crashes involved impaired drivers or their passengers.

Data Source: MHSO 2008-2017
**Crashes among Underage Drinkers**

- In Maryland, after a six year decrease from 18,993 (2007) to 11,555 (2013) motor vehicle crashes involving a driver under 21 years of age, in 2017 crashes increased to 14,576.
- Among all crashes involving at least one driver under the age of 21, the proportion of crashes involving alcohol and/or drugs has declined from 4.9% (2007) to 2.1% (2017).

**Percent of Total Crashes that Involved Alcohol and/or Drugs**

- In 2017, among drivers under the age of 21 there were an estimated 49 fatal crashes and 4,848 injury crashes statewide. About 2.1% of all injury crashes involving a young driver were impaired-related.

**Percent of Crashes that Involved Alcohol and/or Drugs among Fatal and Injury Crashes**

*Data Source: MHSO 2008-2017*
Mortality Rates

Alcohol-Involved Deaths

- Deaths associated with acute and chronic consequences alcohol use occurred at lower rates in Maryland than the nation.
- Alcohol-involved deaths in Maryland rose slightly in 2016, whereas national trends suggest an increasing rate of alcohol-induced deaths.

Data Source: NVSS, CDC WONDER 2010-2016
**Alcohol-Induced Chronic Disease Mortality**

- In Maryland, deaths from chronic disease associated with alcohol⁵ occurred at nearly half the rate of deaths in the United States (see prior page).
- Although the US experienced marginal increases in alcohol-related mortality, death rates in Maryland increased to 3.0 per 100,000 in 2016, the highest since 2010.

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*Data Source: NVSS, CDC WONDER 2010-2016*

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⁵Chronic alcohol-induced conditions include: alcohol-induced chronic pancreatitis, alcoholic liver cirrhosis, alcoholic cardiomyopathy, alcoholic polyneuropathy, alcoholic gastritis, alcoholic fatty liver, alcoholic hepatitis, alcoholic hepatic failure, alcoholic liver disease, alcoholic fibrosis and sclerosis of the liver.
TOBACCO USE

Past-month cigarette and tobacco use remains relatively low among Maryland citizens, and lower than the national average.

Two-thirds of teenagers perceive great risk of cigarette smoking, lower than that reported by young adults and adults.

Mortality attributable to tobacco use continues to decline across the state and the nation.
Use and Risk Perceptions of Smoking

- Past-month cigarette and tobacco use remained at or near their lowest rates observed during the period from 2003 to 2016, reflecting high and stable perceptions of tobacco risk.

**Data Source: NSDUH 2007-2016**

- Over two-thirds of youth aged 12-17 perceived great risk from cigarette smoking.
- Past-month tobacco and cigarette use are the highest among young adults aged 18-25 (32.0% & 24.1%), followed by adults aged 26 and older (24.6% & 18.4%).

**Data Source: NSDUH 2016**
Frequency of Cigarette Use

- In 2017, the overall percentage of Marylanders who smoke cigarettes every day or on some days, among those who smoked at least 100 cigarettes (5 packs) in their entire life, was lower than the national average (38.6% vs. 40.6%, respectively).
- In both Maryland and the United States, the proportion of individuals who smoke cigarettes daily or on some days declined with increasing age.
- Marylanders aged 18 to 44 had a higher prevalence of current smoking status while Marylanders aged 45 and older had a lower prevalence compared to their national peers.

Data Source: BRFSS 2017
Quit or Tried to Quit Smoking

- Among current smokers in Maryland, sixty percent of smokers quit or tried to quit smoking in the past 12 months, which is consistent with previous years (data not shown).

![Quit or Tried to Stop Smoking in the Past 12 Months by Age Group](image)

*Data Source: BRFSS 2017*

- These data should be interpreted cautiously as it does not differentiate between those who briefly quit smoking (e.g., for one day) from those who were successfully able to quit smoking.
TOBACCO CONSEQUENCES

Mortality Rates

- From 2010 to 2016 both Maryland and the United States experienced declines in deaths where the underlying cause of death was attributable to smoking.\(^6\)
- In Maryland, smoking-related deaths occurred at slightly lower rates than the United States.
- Between 2010 and 2016 the reduction in smoking attributable deaths was 32.5 per 100,000 people in the United States and 35.9 per 100,000 people in Maryland.

Data Source: NVSS, CDC WONDER 2010-2016

\(^6\)This measure examines deaths with an underlying cause of death from chronic diseases associated with tobacco use. The conditions captured include malignant neoplasms (e.g., lung, pharynx, and trachea), respiratory diseases (e.g., bronchitis, emphysema, chronic airway obstruction) and cardiovascular diseases (e.g., ischemic heart disease, atherosclerosis, arterial disease). Age-adjusted rates for smoking attributable mortality in Maryland and the United States are presented.
PRESCRIPTION AND ILLICIT DRUG USE

Young adults aged 18-25 are the highest users of all substances in Maryland.

Cocaine use in the past-year has increased in Marylanders 12 years and older.

Marijuana use has increased among all age groups, including youth aged 12-17 and young adults, and now exceeds national estimates in all age groups.
Past-Year Nonmedical Use of Pain Relievers

- In 2016, the percentage of Maryland citizens reporting past-year misuse of pain relievers was lower than past-year misuse of pain reliever use in the nation among those 26 years and older and the overall 18 years and older age group.
- Young adults aged 18-25 reported misuse of pain relievers consistent with their national peers.

Data Source: NSDUH 2016
Illicit Drugs

Past-Month Illicit Drug Use

- In 2016, past-month illicit drug use\(^7\) was higher in all age groups in Maryland than in the United States.
- In 2016, past-month illicit drug use among Maryland’s young adults aged 18-25 is 29.4%, surpassing the national average of 22.8%. The discrepancy is largely driven by the significant difference in past-month marijuana use with 27.3% of Marylanders and 20.3% of their national peers aged 18-25 reporting past-month marijuana use (see page 32 for full chart).

Data Source: NSDUH 2016

\(^7\) Illicit drug use includes use of marijuana/hashish, cocaine (including crack), inhalants, hallucinogens, heroin, and prescription-type psychotherapeutics used non-medically.
**Past-Year Cocaine Use**

- In Maryland, past-year cocaine use increased among those 12 years and older, matching the national estimate in 2016.

*Data Source: NSDUH 2003-2016*

- Young adults aged 18-25 reported the highest prevalence of past-year cocaine use, followed by adults aged 26 and older.

*Data Source: NSDUH 2016*
**Past-Month Non-Marijuana Illicit Drug Use by Age Group**

- In 2016, past-month non-marijuana illicit drug use in Maryland was on par with national estimates in all age groups.

*Data Source: NSDUH 2016*
Marijuana

**Past-Month Marijuana Use**

- Estimates of the population 12 years and older reporting past-month marijuana use has steadily increased from 2011, reaching 10.2% in Maryland and 8.6% in US in 2016.

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<td>2016</td>
<td>9.6</td>
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- Among 12 to 17 year olds in Maryland, past-month marijuana use was 7.8% in 2016, above the national estimate of 6.8%.

<table>
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<td>2015</td>
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</table>

*Data Source: NSDUH 2003-2016*
• Past-month marijuana use among Maryland young adults aged 18-25 years continued to surpass use by peers nationally (27.3% versus 20.3%, respectively in 2016).

![Marijuana Use in Past Month Age 18-25 years](chart1.png)

• Past-month marijuana use by Maryland adults aged 26 years and older continued to increase from 2011.

![Marijuana Use in Past Month Age 26+ years](chart2.png)

*Data Source: NSDUH 2003-2016*
Past-Year Marijuana Use

- Past-year marijuana use among Maryland teenagers aged 12-17 decreased to 13.9% in 2016, but young adults aged 18-25 years continued to increase, with 41.9% reporting past-year marijuana use in 2016.

Data Source: NSDUH 2003-2016
Past-year marijuana use by Marylanders aged 26 years and older increased from 6.0% in 2011 to 11.6% in 2016.

Data Source: NSDUH 2003-2016
First Use of Marijuana

- The proportion of Maryland teenagers aged 12-17 who initiated marijuana use decreased from 6.8% in 2013 to 5.9% in 2016, while remaining above the national rate.

![First Use of Marijuana Age 12-17 years](chart1.png)

- The proportion of Maryland adults aged 18-25 who initiated marijuana use continued to increase from 6.6% in 2011 to 10.1% by 2016.

![First Use of Marijuana Age 18-25 years](chart2.png)

Data Source: NSDUH 2003-2016
Risk Perceptions of Marijuana Use

- Perceptions of marijuana’s risk among teenagers aged 12-17 years increased to 26.2%, while among young adults aged 18-25 it continued to decrease to 11.6%.

Data Source: NSDUH 2007-2016
PRESCRIPTION AND ILLICIT DRUG CONSEQUENCES

Past-Year Illicit Abuse/Dependence

- In Maryland in 2016, individuals meeting criteria for self-reported illicit drug abuse or dependence remained the highest among young adults aged 18-25 (8.5%), and was above the national average of 7.1%.
- Maryland estimates of past-year illicit drug dependence or abuse among all age groups remained higher than the national average.

Data Source: NSDUH 2016
Emergency Department Visits and Hospitalizations

- The number of drug and/or alcohol events—including unintentional poisoning, suicide attempts, intentional poisonings, and assault—reported in Maryland emergency departments (ED) and inpatient hospitalizations totaled 230,269 in 2016.
- Drug related visits accounted for over 58% of total drug and alcohol events in 2016 totaling 134,280 events.
- Alcohol related visits accounted for about 33% of total drug and alcohol events in 2016 totaling 75,262 events.
- Visits involving both drugs and alcohol accounted for 9% of total drug and alcohol events in 2016 totaling 20,727 events.

Data Source: HSCRC 2016
Drug and Alcohol Related Poisonings: Accidental and Intentional

- In 2016, Maryland had 15,969 ED visits and hospitalizations related to drug and/or alcohol related poisonings.
- Accidental poisonings involving only drugs accounted for almost 70% of all drug-related poisonings.
- Over 11% of drug-related poisonings were deemed to be intentional.
- Almost 20% of drug-related poisonings were Not Otherwise Specified (NOS), while less than 5% of alcohol related poisonings were NOS.
- 65% of all poisonings only involving alcohol were accidental.
- Over 30% of alcohol-related poisonings were intentional, which is significantly higher than poisonings involving drugs only.
- Similar patterns are seen in poisonings involving alcohol and drugs, of which almost 65% were accidental and over 35% were intentional.

Data Source: HSCRC 2016
Drug and Alcohol-related Fatalities in Emergency Departments and Hospitals

- In Maryland, 211 or 1.8% of fatalities occurring in an emergency department of hospital involved alcohol or drugs.
- Alcohol was associated with 71 fatalities.
- About two-thirds were drug-related* fatalities (143 or 68%); one in three (68 or 32%) were due to prescription opioids or heroin.

*Included in drug-related deaths were those associated with opioids, heroin, methadone, benzodiazepine, cocaine, marijuana, hallucinogens, or psychotropic agents.

Data Source: HSCRC 2016
Multiple Substance Use: Prescription Opioids, Benzodiazepines, & Heroin

- In 2016, Marylanders made 94,182 ED visits and inpatient hospital admissions that involved prescription opioids, benzodiazepines, and/or heroin.
- Of these, 2,545, or 2.7%, involved 2 or more of these drugs.

Data Source: HSCRC 2016
**Drug-Induced Mortality**

- Deaths associated with drug use continued to increase in both Maryland and the United States.
- The rate of increase in drug-induced deaths was higher in Maryland compared to the nation, and was particularly sharp in 2016.
- In Maryland, drug-induced deaths almost doubled between 2014 and 2016.

**Age Adjusted Drug-Induced Mortality Rates**

<table>
<thead>
<tr>
<th>Year</th>
<th>Rate per 100,000</th>
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</thead>
<tbody>
<tr>
<td>2010</td>
<td>12.9</td>
<td>13.9</td>
<td></td>
</tr>
<tr>
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<td>13.9</td>
<td>12.1</td>
<td></td>
</tr>
<tr>
<td>2012</td>
<td>13.8</td>
<td>14.2</td>
<td></td>
</tr>
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<td>2013</td>
<td>14.6</td>
<td>14.9</td>
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<tr>
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<td>15.5</td>
<td>17.8</td>
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</tr>
<tr>
<td>2015</td>
<td>17.2</td>
<td>21.4</td>
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</tr>
<tr>
<td>2016</td>
<td>20.8</td>
<td>34.0</td>
<td></td>
</tr>
</tbody>
</table>

*Data Source: NVSS, CDC WONDER 2010-2016*
Alcohol and/or Drug Involvement in Decedents

- In 2015, the percent of homicide cases testing positive for alcohol was 25.9% (of 606 cases), while 30.5% tested positive for drugs.
- The percent of accidental death cases testing positive for drugs is at its highest point in the past five years (20.5%).

Number of OCME Cases by Manner of Death, 2011-2014

<table>
<thead>
<tr>
<th>Manner of Death</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accidents</td>
<td>1684</td>
<td>1859</td>
<td>1826</td>
<td>1807</td>
<td>2037</td>
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<tr>
<td>Homicides</td>
<td>431</td>
<td>429</td>
<td>434</td>
<td>416</td>
<td>606</td>
</tr>
<tr>
<td>Suicides</td>
<td>563</td>
<td>579</td>
<td>576</td>
<td>597</td>
<td>557</td>
</tr>
</tbody>
</table>

Toxicology Testing for Alcohol and/or Drugs Among OCME Cases in Maryland

Data Source: 2011-2015 OCME Annual Reports

8Retrieved from: https://health.maryland.gov/ocme/Pages/Reports.aspx
MARYLAND POISON CENTER CALLS

Cases of Intentional Poisoning

- The total number of intentional misuse poisoning cases where the reported motive for exposure included suicide attempts, misuse, and abuse\(^9\) increased between 2014 and 2017, after decreasing in 2013 and 2014.
- Overall, from 2014 to 2017, the frequency of reported poisonings related to substance misuse or suicide increased, 12% and 3.0% respectively; while the frequency of abuse-related poisoning cases increased 97% over the same period.

\(^9\)Intentional misuse is defined as an exposure resulting from the intentional improper or incorrect use of a substance for reasons other than the pursuit of a psychotropic effect. For example, a person deliberately increases the dosage of a medication to enhance its therapeutic effect or overuse of caffeine to study for an exam. Intentional abuse is defined as an exposure resulting from intentional improper or incorrect use of a substance where the patient was likely attempting to gain a high, euphoric effect, or psychotropic effect, including recreational use of a substance for any effect.
Substances Implicated in Calls

- In 2017, heroin accounted for over a quarter of total calls implicated in intentional abuse in Maryland.

Data Source: MPC 2017

- Identifiable substances most frequently implicated in cases of intentional substance abuse in Maryland were heroin, benzodiazepines, ethanol, cocaine, THC (tetrahydrocannabinol) homologs, antihistamine/decongestant/dextromethorphan combination products.
- Other agents represented 21% of calls, and include (but are not limited to): acetaminophen, ibuprofen, mouthwash, hand sanitizers, energy drinks, plants, gasoline, laxatives, electronic cigarettes isopropanol, Freon/other propellants, paint, hair spray, promethazine, sleep aids and synthetic cathinones (i.e., bath salts).
Drugs Mentioned in Drug Identification Calls

- In 2017, among the top ten medications most frequently mentioned in these drug identification calls, three were psychopharmacological medications (benzodiazepines, atypical antipsychotics, and trazadone).
- After benzodiazepines, which were identified in 1,427 of the calls, ibuprofen was the second most frequently mentioned medication class in drug identification calls—accounting for 1,284 drug identification calls.

Data Source: MPC 2017

- Additional state and individual county data from the Maryland Poison Center can be retrieved from annual reports available at: [http://www.mdpoison.com/factsandreports/](http://www.mdpoison.com/factsandreports/)
TREATMENT FOR SUBSTANCE USE DISORDERS

In 2014, treatment admissions for heroin and prescription opioids accounted for 45.3% of all state-sponsored treatment admissions.

Treatment admissions for heroin continued to increase in 2014, and further surpassed treatment admissions for alcohol problems.
Admissions to Substance Use Treatment Programs

Primary Substances Reported at Treatment Admission

- Treatment admissions involving heroin as the primary problem increased by 61.5% from 2014 to 2015. In 2015, heroin was the leading cause for treatment admission in the state of Maryland.
- Between fiscal years 2008 and 2015, the proportion of treatment admissions due primarily to alcohol, cocaine/crack, and marijuana/hashish declined. The significant increase in the percent of admissions related primarily to heroin is accompanied by a drastic decrease in the percent of admissions related primarily to alcohol. Admissions for heroin rose from 35.9% in 2014 to 52.4% of all admissions in 2015, while admissions for alcohol fell from 27.7% in 2014 to 12.8% and marijuana fell from 18.2% in 2014 to 7.1% of all admissions in 2015.

Data source: TEDS-a 2008-2015
Primary Substances Reported at Treatment Admission

Changes in Admissions to Substance Use Treatment Programs

- In both the US and Maryland, the proportion of admissions to treatment programs for alcohol, cocaine/crack, and marijuana/hashish decreased from 2008 to 2015.
- From 2008 to 2015, the proportion of treatment admissions due to heroin increased by 12.5% nationally and 25.5% in Maryland.

Data source: TEDS-a 2008-2015
Needing But Not Receiving Treatment for Alcohol Use

- The past-year estimate of needing but not receiving alcohol-related treatment among Maryland citizens was similar to national estimates. Young adults aged 18 to 25 years reported the highest need for treatment of all age groups (12.1% in Maryland).

Data Source: NSDUH 2016
MENTAL HEALTH

Depression among children in Maryland and The United States is dramatically increasing.

Life-time prevalence of depression has increased among young adults.
Mental Illness and Substance Use Disorder Co-occurrence

- In 2015, 36.5% of the over 100,000 admissions for substance use treatment in Maryland also involved a current psychiatric problem.
- From 2008 to 2015, the rate of substance use treatment among individuals with co-existing mental illness increased by 3.1%.

The prevalence of co-existing mental illness varied depending on the substance of abuse reported upon admission.
- In 2015, admission for substance use treatment that involved benzodiazepines were most likely associated with mental illness (67.8%).
- Around 1/3rd of admissions for marijuana, opioids including non-prescription methadone and heroin were associated with mental illness.
- From 2014 to 2015, reports of co-existing mental illness among substance treatment admissions sharply declined (from 54.7% to 36.5%).

Data source: TEDs-a 2008-2015
Past-Year Major Depressive Episode

- Prevalence of major depression among teenagers aged 12-17 increased over time in Maryland and across the nation.
- The prevalence of major depression among Maryland teenagers increased from 7.0% in 2008 to 12.7% in 2016.

**Having at Least One Major Depressive Episode in Past Year, Age 12-17 Years**

*Data Source: NSDUH 2005-2016*
**Lifetime Prevalence of Depressive Disorder**

- In 2017, for all age groups except young adults aged 18 to 25, lower percentages of Maryland residents were ever told they had a depressive disorder compared to their peers across the United States (data not shown).
- The overall prevalence of lifetime depressive disorders increased by 1.6% in Maryland between 2013 and 2017, a change largely driven by the rise in the percentage of 18 to 25 year olds reporting being told they had a depressive disorder.
- Contrary to the trend of rising prevalence of depressive disorders with increasing age, those 65 years or older had the lowest prevalence of ever being told they had a depressive disorder compared to other age groups.

**Data Source:** BRFSS 2013-2017
Types of Mental Illness

- The prevalence of all types of mental illness or psychological distress in Maryland showed no significant change between 2009 to 2016.
- 16.6% of Maryland citizens reported experiencing any mental illness in the past year.

Data Source: NSDUH 2009-2016
Conclusions

This report provides the latest estimates of alcohol, tobacco, and drug use and the consequences of use in the state of Maryland. Findings suggest that alcohol remains problematic in the state; especially binge drinking among young adults aged 18-25. Finally, although motor vehicle crashes related to impaired driving has declined in recent years, the proportion of all substance-related crashes resulting in a fatality remained high. Prevention and education efforts should be encouraged, including increased DUI surveillance and better understanding of environmental and legal efforts to reduce impaired driving.

Young adults aged 18-25 remain the highest users of all substances monitored in this report. In particular, this age group perceives marijuana to be relatively 'safe' and, as such, have significantly increased their use of marijuana over the past several years. Given recent legislation in the state to allow use of marijuana for medical purposes, as well as decriminalization of small amounts of marijuana, young adults’ perceptions of marijuana risk may decline even further. Although marijuana use is highest among 18-25 year olds, the results of this report indicate that marijuana use is not only increasing among Marylanders of all ages, but that it is increasing faster than observed nationally. It will be important to monitor marijuana perceptions of risk, use, consequences of use, and treatment admissions in young adults, as well as in youth, as the substance becomes increasingly available for medical purposes in Maryland.

The non-medical use of prescription opioid analgesics and benzodiazepines remain current and growing problems. As the state implemented mandated use of the Prescription Drug Monitoring Program in July 2018, it will be important to monitor the impact this may have on prescribing of controlled substances. Monitoring the use of and treatment admissions for prescription medications with addiction potential will become increasingly important. Accordingly, identifying trends in overdose deaths and hospitalizations related to prescription medications will be a focus of future SEOW efforts, as will the use of potential 'substitute' substances (such as prescription opioids for heroin and benzodiazepines for alcohol or marijuana).

Over a third of Maryland citizens in treatment for a substance use disorder have evidence of a concurrent mental health problem. The need to treat both conditions is important, as an individual’s substance use behavior may be due to self-medicating for the mental health problems. Focusing on this at-risk population will also be a focus of future SEOW initiatives to provide evidence-based information to state policy-makers, researchers, and citizens.
APPENDIX

The report utilizes a number of data sources to provide the most current estimates of substance use and consequences of use in the state of Maryland. Data are made available by national and state agencies. The SEOW analyzes the data to provide information on key indicators of substance use disorders and dependence; outcomes of use; and treatment. As well, we provide indicators of mental health status and comorbidity with substance use disorders.

There are many data sources available to assess the consumption of substances and their associated consequences. The availability of data, however, does not necessarily mean the data has value. As well, the presentation of too much data has the tendency to overwhelm the end user. Thus, selecting both data and useful measures, or indicators, within these data sources proves a challenge for the SEOW. Each data source is briefly described below.
Data Sources

Alcohol Epidemiologic Data System (AEDS): The AEDS reports trends in consumption of alcohol in the United States using alcoholic beverage sales. The data are collected annually and reported in the autumn with a lag time of two years. Data are current through 2015. The report provides data on national consumption of beer, wine, and distilled spirits as well as for all alcoholic beverages combined. Alcoholic beverage sales data are either collected by the AEDS from states or provided by beverage industry sources. Population data from the U.S. Census Bureau are used to calculate rates.  [http://pubs.niaaa.nih.gov/publications/surveillance.htm](http://pubs.niaaa.nih.gov/publications/surveillance.htm)

Behavioral Risk Factor Surveillance System (BRFSS): Initiated in 1984, BRFSS is an ongoing representative sample providing national- and state-level prevalence estimates of major behavioral risks associated with premature morbidity and mortality among adults aged 18 or older. Factors assessed by the BRFSS include alcohol and tobacco use, health care coverage, test results for HIV/AIDS, physical activity, and fruit and vegetable consumption. The Centers for Disease Control and Prevention (CDC) developed standard core questions for states to use in collecting data that could be compared across states. Initially conducted with paper-administered survey forms, interviews are now conducted through computer-assisted telephone interviewing (CATI). The typical statewide sample size is approximately 8,900 households in Maryland. The survey is administered annually and includes county level data starting in 2002. The sampling design of the survey changed in 2011; therefore data from 2011 and beyond is not directly comparable to data from prior years. Data are current through 2017.  [http://www.cdc.gov/brfss/](http://www.cdc.gov/brfss/)

Health Services Cost Review Commission (HSCRC)/State Inpatient Databases (SID): The State Inpatient Databases (SID) are a powerful set of hospital databases from data organizations in participating states developed as part of the Healthcare Cost and Utilization Project (HCUP). The SID contains the universe of inpatient discharge abstracts translated into a uniform format to facilitate multi-state comparisons and analyses. Together, the SID encompasses about 90 percent of all U.S. community hospital discharges. In Maryland, the HSCRC an independent agency is charged with regulating hospital rates for all payers and is responsible for maintaining both the inpatient and outpatient facility data sets. The inpatient dataset contains discharge medical record abstracts and billing data on each of the state's approximately 800,000 yearly inpatient admissions. Hospitals submit data to the HSCRC on a quarterly basis and the agency generates research-ready datasets for public use. Access to the research level version of the inpatient or outpatient data requires the submission of an application to the HSCRC. Data is available through 2016.  [http://www.hscrc.state.md.us/](http://www.hscrc.state.md.us/)

Maryland Automated Accident Reporting System (MAARS): The MAARS data is comprised of information extracted from motor vehicle accident reports submitted by over 200 Maryland law enforcement agencies. All accidents resulting in a vehicle being towed away, personal injury, or fatality are reported. Accident data is recorded by federal, state, county or local law enforcement officers at the scene of the reportable accident. Typically, within 10 days of the accident occurrence, the report is submitted to the Maryland State Police Central Records
Division for transfer into the Maryland Automated Accident Reporting System (MAARS) database file. Within 30 days, the data is uploaded to the Maryland State Highway Administration's database. The Central Records Division of the Maryland State Police manages the MAARS database and maintains the electronic accident database, which is shared with Transportation Safety Analysis Division and other agencies for analysis. This data is reported to National Highway Traffic Safety Administration and the national Fatality Analysis Reporting System. MAARS data are current through 2017. [http://www.mva.maryland.gov/safety/mhso/benchmark-reports.htm](http://www.mva.maryland.gov/safety/mhso/benchmark-reports.htm)

**Maryland Poison Center (MPC):** The MPC, one of the regional poison centers that are certified by American Association of Poison Control Centers, collects information on poisonings and overdose cases through voluntary calls from Maryland residents. From over 60,000 calls annually, most exposure calls are from the public at the patient’s residence, followed by calls from providers in health care facilities (e.g., emergency departments; inpatient hospital settings, including intensive care units; and doctors’ offices). There are over 2,000 calls yearly from pre-hospital providers. The MPC database consists of information regarding the names of the product(s) involved, all reported ingredients, the amount of product(s) involved, time of the potentially toxic exposure, clinical effects, treatments, and outcomes. In addition, the MPC collects information on demographics (e.g., age, gender, and zip code), which is useful in examining the types of poisoning events in specific age groups and county regions. MPC data are current through 2017 and available upon request. [http://www.mdpoison.com/](http://www.mdpoison.com/)

**National Survey on Drug Use and Health (NSDUH):** The NSDUH provides national- and state-level data on mental health as well as the use of tobacco, alcohol and illicit drugs (including non-medical use of prescription drugs) in the United States. NSDUH is sponsored by the Substance Abuse and Mental Health Services Administration (SAMHSA), an agency of the U.S. Public Health Service within the U.S. Department of Health and Human Services. A random sample of households is selected across the United States, and a professional field interviewer makes a personal visit to each selected household. After answering a few general questions during the in-person visit by the interviewer, residents of the household may be asked to participate. Participants answer most of the interview questions in private by entering their responses directly into a computer. The survey is conducted annually, with state-level data available from 1999-2016, substate-level data available every 2 years from 1999-2016 and national data available 1999-2017. [https://nsduhweb.rti.org/respweb/homepage.cfm##](https://nsduhweb.rti.org/respweb/homepage.cfm##)

**National Vital Statistics System (NVSS):** The National Center for Health Statistics, a division of the CDC, collects data from vital registration systems operated across the nation and from various jurisdictions legally responsible for the registration of vital events: births, deaths, marriages, divorces, and fetal deaths. NCHS provides important surveillance information that helps identify and address critical health problems including those related to the consequences of substance use. Data are current through 2016. [http://www.cdc.gov/nchs/nvss.htm](http://www.cdc.gov/nchs/nvss.htm). The data in this report were accessed through the CDC's Wide-ranging Online Data for Epidemiologic Research (WONDER) internet system. [http://wonder.cdc.gov/](http://wonder.cdc.gov/)
**Treatment Episodes Dataset (TEDS-a):** TEDS-a data include treatment admissions from all substance use disorder treatment facilities that receive state alcohol and/or drug agency funds (including Federal Block Grant funds) for the provision of treatment for substance use disorders. TEDS-a does not include data from private or for-profit treatment facilities, hospitals, the state correctional system (unless licensed through the state substance use disorders agency) or federal agencies (the Bureau of Prisons, the Department of Defense, and the Veterans Administration). Data elements in TEDS-a include: reason for admission, primary and secondary substances of use, sociodemographic information, the presence or absence of mental illness and treatment modality. Data are current through 2015. [https://www.samhsa.gov/data/data-we-collect/teds-treatment-episode-data-set](https://www.samhsa.gov/data/data-we-collect/teds-treatment-episode-data-set)

**Office of the Chief Medical Examiner (OCME):** The OCME is the statewide agency designated to investigate deaths from injury, homicide, unusual or suspicious circumstances, or when a person is not attended by a physician. Along with forensic investigation to determine the cause and manner of death, OCME serves an important public health role by identifying injury trends or potential infectious diseases that may pose risk to Marylanders. More information about OCME is available at [https://health.maryland.gov/ocme/Pages/Home.aspx](https://health.maryland.gov/ocme/Pages/Home.aspx)
Indicators

In identifying and selecting potential indicators of tobacco, alcohol, and drug use and consequences of use, we relied on the availability of data to operationalize the indicators, as well as materials and guidance provided by SAMHSA for statewide epidemiological initiatives. In selecting primary indicators for alcohol and substance use, we applied the following epidemiologically-driven criteria:

1) Relevance: To be included in this report, each indicator must be directly related to substance use and/or consequences of use. As well, the proposed indicator must be evaluable. The chosen indicator must be related to the problem being assessed. That is, if an indicator is too broadly defined, inferences about its relationship to alcohol and/or substances may not be clear or direct.

2) Generalizability: The proposed indicator must be available at the state level AND national and/or sub-state levels. The ability to generalize the prevalence of an indicator to the nation provides both context and an assessment of a particular indicator’s relative severity. National comparisons help provide some idea of whether a particular problem (e.g., binge drinking among young adults) is significant in the state. Such knowledge helps prioritize prevention efforts, as well as evaluate efforts that have active prevention initiatives. Similarly, comparison of sub-state regions can help identify areas to target resources and initiatives.

3) Timeliness: The proposed indicator must be available over time. Evaluation of indicators over time provides a sense of change, and hence the effectiveness of prevention and policy initiatives. The proposed indicator must be current and available. The lag time between data collection and availability is important for states and their jurisdictions in prioritizing prevention efforts. Currently available data provides a more accurate snapshot of consequences and consumption of alcohol and substances.

4) Reliability and Validity: The data from which the proposed indicator derives must have accepted validity and reliability. An indicator is only as good as its data source. If sample sizes are inadequate, then reliable estimates cannot be made. If the data are not collected uniformly or routinely, then the indicator may not be valid.

5) Availability: For an indicator to be included in this report, data regarding its use must be available from a regular and reliable source.

In addition to primary indicators evaluated in this report, the SEOW also recognizes the changing needs of SAMHSA and MDH/BHA to include mental health, recovery, and treatment imperatives. To address these mandates, the SEOW has identified additional secondary indicators. Although these secondary indicators do not meet all the criteria established for the primary indicators, they have intrinsic value to the state. For this report, the secondary indicators serve as benchmark for future epidemiological profiles. Secondary indicators incorporated in this report include those reported in the sections on mental health, suicide, and co-occurring disorders.
**Maryland State Resources**

Maryland Statewide Epidemiological Outcomes Workgroup (SEOW):  
[http://www.pharmacy.umaryland.edu/programs/seow/](http://www.pharmacy.umaryland.edu/programs/seow/)

Maryland Department of Health (MDH):  
[https://health.maryland.gov/Pages/Index.aspx](https://health.maryland.gov/Pages/Index.aspx)

- MDH Virtual Data Unit  
  [https://health.maryland.gov/DATA/Pages/home.aspx](https://health.maryland.gov/DATA/Pages/home.aspx)

- Maryland Office of the Chief Medical Examiner  
  [https://health.maryland.gov/ocme/Pages/Home.aspx](https://health.maryland.gov/ocme/Pages/Home.aspx)

Behavioral Health Administration (BHA):  
[https://bha.health.maryland.gov/Pages/Index.aspx](https://bha.health.maryland.gov/Pages/Index.aspx)

- Overdose Response Program (ORP):  
  [https://bha.health.maryland.gov/NALOXONE/Pages/Home.aspx](https://bha.health.maryland.gov/NALOXONE/Pages/Home.aspx)

- Naloxone:  

- [http://bha.health.maryland.gov/OVERDOSE_PREVENTION/StandingOrder/PharmGuid](http://bha.health.maryland.gov/OVERDOSE_PREVENTION/StandingOrder/PharmGuid)

- [http://dontdie.org/](http://dontdie.org/)

- Maryland Prescription Drug Monitoring Program (PDMP)  
  [https://bha.health.maryland.gov/pdmp/Pages/-Healthcare-Providers.aspx](https://bha.health.maryland.gov/pdmp/Pages/-Healthcare-Providers.aspx)

  [https://bha.health.maryland.gov/pdmp/Pages/Home.aspx](https://bha.health.maryland.gov/pdmp/Pages/Home.aspx)

  [https://crisphealth.org/services/prescription-drug-monitoring-program-pdmp/](https://crisphealth.org/services/prescription-drug-monitoring-program-pdmp/)

- Office of Prevention and Wellness (OPW):  

- Opioid Misuse Prevention Program (OMPP):  
  [https://bha.health.maryland.gov/OMPP/Pages/Home.aspx](https://bha.health.maryland.gov/OMPP/Pages/Home.aspx)

- Maryland Strategic Prevention Framework (MSPF2):  
  [https://www.pharmacy.umaryland.edu/programs/bhrt/projects/](https://www.pharmacy.umaryland.edu/programs/bhrt/projects/)

- Strategic Prevention Framework for Prescription Drugs (SPFRx):  
  [https://www.pharmacy.umaryland.edu/programs/bhrt/projects/](https://www.pharmacy.umaryland.edu/programs/bhrt/projects/)
Federal Resources

Substance Abuse and Mental Health Services Administration (SAMHSA): http://www.samhsa.gov/

National Institute on Drug Abuse (NIDA): http://www.drugabuse.gov/

National Institute on Alcohol Abuse and Alcoholism (NIAAA): http://www.niaaa.nih.gov/

Office of National Drug Control Policy: https://www.whitehouse.gov/ondcp

Additional Links and Resources

Fatality Analysis Reporting System (FARS): http://www.nhtsa.gov/FARS


Maryland’s Tobacco Resource Center: http://mdquit.org/

