RECOMMENDED CSTE SURVEILLANCE INDICATORS FOR SUBSTANCE ABUSE & MENTAL HEALTH

CSTE

Version 3, January 2019

Acknowledgements

2015/16 Workgroup members included:

- Cathy Saiki, MS, California Department of Health
- Corinne Miller, PhD, Michigan Department of Health and Human Services, Substance Abuse Subcommittee Co-Chair
- Denise Paone, EdD, New York City Department of Health and Mental Hygiene
- Ellenie Tuazon, MPH, New York City Department of Health and Mental Hygiene
- Hal Johnson, MPH, Hal Johnson Consulting (FL)
- James W. Davis, MA, New Mexico Department of Health
- Jennifer Sabel, PhD, Washington State Department of Health
- Jessica Reno MPH, New Mexico Department of Health
- Luigi Garcia Saavedra, MPH, New Mexico Department of Health
- Michael Landen, MD, MPH, New Mexico Department of Health, Substance Abuse Subcommittee Co-Chair
- Steve Wirtz, PhD, California Department of Health
- Svetla Slavova, PhD, Kentucky Injury Prevention and Research Center
- Thomas Largo, MPH, Michigan Department of Health and Human Services
- Toby Yak, MPH, Iowa Department of Public Health

SAMHSA Members:

- Alejandro Azofeifa, DDS, MSc, MPH, Substance Abuse and Mental Health Services Administration
- Patrick M. High, DrPH, Substance Abuse and Mental Health Services Administration

CSTE Staff:

- Nidal A- Z Kram, MPH, Council of State and Territorial Epidemiologists
- Richard S. Hopkins, MD, MSPH, Council of State and Territorial Epidemiologists Consultant

2017-Revision Contributors:

- Abby Hagemeyer, PhD, MPH, Council of State and Territorial Epidemiologists Applied Epidemiology Fellow placed at the Substance Abuse and Mental Health Services Administration
- Alejandro Azofeifa, DDS, MSc, MPH, Substance Abuse and Mental Health Services Administration
- Aley Joseph-Pallickaparambil, MPH, MS, Public Health Seattle King County
- Donna F. Stroup, PhD, MSc, Data for Solutions, Inc., Consultant to Substance Abuse and Mental Health Services Administration
- James W. Davis, MA, New Mexico Department of Health
- Kyle Gardner, MSPH, Arizona Department of Health Services
- Laura Tomedi, PhD, MPH, New Mexico Department of Health
- Megan Toe, MSW, Council of State and Territorial Epidemiologists
- Michael Landen, MD, MPH, New Mexico Department of Health, CSTE Substance Use & Mental Health Subcommittee Chair

- Thomas Largo, MPH, Michigan Department of Health and Human Services
- Valerie Goodson, MPA, Council of State and Territorial Epidemiologists

2019-Revision Contributors:

- Thomas Largo, MPH, Michigan Department of Health and Human Services, CSTE Substance Use and Mental Health Indicator Subcommittee Chair
- Michael Landen, MD, MPH, New Mexico Department of Health, Substance Use & Mental Health Subcommittee Chair
- Megan Toe, MSW, Council of State and Territorial Epidemiologists
- Members of the CSTE Substance Use and Mental Health Indicator Subcommittee

"The reason for collecting, analyzing, and disseminating information on a disease is to control that disease. Collection and analysis should not be allowed to consume resources if action does not follow." (1)

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Importance of Substance Abuse and Mental Health to Overall Health in the United States

In the United States, death rates from suicide, drug abuse and chronic liver disease have been rising for 10 to 15 years—a trend in stark contrast to gains in life expectancy and reductions in mortality from many other causes. In addition to mortality attributable to substance abuse and mental health disorders, suffering, disability and economic cost contribute to the burden of these conditions.

The national age-adjusted suicide rate (per 100,000) for all ages increased from 10.5 in 1999 to 12.9 in 2014. These problems show disturbing disparities. Suicide rates have been consistently higher in men than in women, but rates in both sexes have increased. Suicide rates and rate increases were greater in non-Hispanic whites (12.0 to 16.4 deaths per 100,000 in 1999 and 2014) than in other racial/ethnic groups (3).

A Definition of
Public Health Surveillance

"The ongoing, systematic collection, analysis, and interpretation of health data, essential to the planning, implementation and evaluation of public health practice, closely integrated with the dissemination of these data to those who need to know and linked to prevention and control." (2)

U.S. age-adjusted death rates from opioid overdose (fatal poisonings) rose from 2.5 in 2000 to 5.4 in 2010 and to 9.0 in 2014. The age-adjusted death rate for heroin-related drug-poisoning tripled from 1.0 to 3.4 per 100,000 from 2010 to 2014 (4). This increase in drug overdose deaths is the major contributor to the rise in the overall age-adjusted unintentional injury death rate from 35.3 to 40.5 per 100,000 from 1999 to 2014 (4).

U.S. age-adjusted death rates (per 100,000) from chronic liver disease and cirrhosis rose from 9.6 to 10.2 from 1999 to 2013 (3). Age-specific rates have been increasing substantially in adults aged 45 to 64 (17.4 to 20.1 for aged 45 to 54, and 23.7 to 30.4 for aged 55 to 64). Similar patterns are seen for the subset of those suffering from "alcoholic liver disease" (3). In 2013, there were 29,000 deaths attributable to alcohol, an increase from 25,500 in 2010. The overall 2013 death rate from alcohol-related causes was 9.2 per 100,000, with the highest rate by age being 25.3 in those aged 55 to 64. Of these deaths, 74% were in men, and 86% were in white non-Hispanic persons (5).

Economic impact data are more readily available for abuse of alcohol and other substances than for mental illness. According to Sacks and coauthors (6), excessive drinking cost the U.S. $249 billion in 2010, or $2.05 per drink, a significant increase from $223.5 billion, or $1.90 per drink, in 2006. Most of these costs were due to reduced workplace productivity, crime, and the cost of treating people for health problems caused by excessive drinking" (7) Opioid abusers generate, on average, annual direct health care costs 8.7 times higher than non-abusers (8). In 2006 an estimated $57.8 billion was spent in the United States on care for mental illness, similar to the cost for cancer care (9). Worldwide, the economic impact of mental illness for the period 2010 to 2030 is estimated to be similar to that of cardiovascular disease (10). In the United States, depression has become the fifth most common cause of disability (10).

Call for Action

To respond to the importance of these causes of illness, disability, economic impact, and death, in 2015 the Council of State and Territorial Epidemiologists (CSTE) established a substance use and mental health indicator workgroup, which has developed a set of substance abuse and mental health surveillance indicators for use by state and local public health departments. This work was undertaken in partnership with the U.S. Department of Health and Human Services' (HHS's) Substance Abuse and Mental Health Services Administration (SAMHSA).

Several criteria have been proposed for selecting conditions for public health surveillance (10):

- Clinically severe, with high risk of hospitalization or death (severity).
- Commonly occurring, and thus important contributors to overall morbidity or mortality (frequency).
- Responsible for substantial economic impact, either in cost of medical care or in lost productivity and years of healthy life (economic impact).
- Preventable, with a feasible method for preventing or controlling the condition (preventability).
- Not fully understood, and thus additional data are needed to inform planning or evaluation of disease prevention and control activities (planning and evaluation).

Mental illness and substance abuse disorders meet these criteria, for frequency, severity and economic impact of illness. A substantial degree of potential preventability is suggested by the disparate impact of these disorders on segments of the population from state to state, among communities within states, and among groups defined by age, race, sex, ethnicity, culture, and socioeconomic status. The high rates seen among different groups, locations and time periods are not inevitable, and could, in principle, be lowered with sustained implementation of appropriate evidence-based prevention measures. Moreover, rates of mental illness and substance abuse disorders sometimes change rapidly. Current population-based state- and local-level surveillance data are critical to public health, substance abuse, and mental health officials for program planning and evaluation.

Public Health Surveillance Indicators

Since 1996, CSTE and partners have gradually identified sets of surveillance indicators in numerous noninfectious disease domains (starting with indicators for tobacco use) to complement the nationally notifiable conditions, most of them infectious, that make up the Nationally Notifiable Diseases Surveillance System. The CSTE Blueprint for Public Health Surveillance (1) called for development of a set of conditions to be put under uniform national surveillance, as the National Public Health Surveillance System. So far, sets of surveillance indicators have been developed in the domains of occupational health (1996), chronic disease (1998), maternal and child health (1998), injuries (1999), poisonings (2000), environmental health (2001), and oral health (2002), with several subsequent rounds of updates in most of

these domains (e.g., chronic disease in 2013 and oral health in 2015). The existing chronic disease and injury/poisoning indicator sets (12, 13) include items relevant to substance abuse and mental health.

CSTE adoption of surveillance indicators in a particular domain means that there is agreement among states that these are important conditions to put under surveillance, that all states should use the same specified indicator definitions and methods, and that these uniformly collected data should be shared -- among states, with federal public health authorities, with those who have a need to know, and with the public. Prevention and control programs can use these data to develop and target interventions and for evaluation. In some domains, almost all data collection and analysis are done by state-based epidemiologists, while in others the work is shared between state-based epidemiologists and federal staff who can calculate values for many indicators for all jurisdictions using national datasets. Methods for dissemination of the state-by-state indicator values include publications of periodic multi-state summaries by consortia of the states, to publication of summaries by national organizations like CSTE or Safe States, or data maintenance in publicly accessible websites.

Public Health Surveillance for Substance Abuse in the United States

Drug-use patterns in communities (for drugs with potential for abuse and dependence) are even more variable than patterns of mental illness, as they are the net effect of numerous influences, including drug availability, quality and price; introduction of new substances or new formulations of old substances into the market; penalties for drug possession or sale; vigor of law enforcement; treatment availability and use; cultural acceptance; and hard-to-quantify factors related to anomie, powerlessness, and related societal factors (14). One example of this dynamism is the ongoing epidemic of fatal drug overdoses associated with use of prescription opioids. As that epidemic has leveled off and receded in some areas, an overlapping epidemic of overdoses associated with heroin and fentanyl use has driven overdose death rates even higher in some parts of the country (3). Prevalence of use, abuse or dependence for various drugs varies by a factor of two to three among the states.

National surveys such as The National Survey and Drug Use and Health (NSDUH), Monitoring the Future (MtF) (15), and the Youth Risk Behavior Surveillance System (YRBSS) provide state-by-state estimates of the use of alcohol and various drugs. NSDUH data provide a 15-year baseline for comparison with current survey estimates of the prevalence of abuse and/or dependence and drug treatment usage among persons aged 12 and older. MtF and YRBSS provide similar and complementary data for adolescents, but not for adults. Methodological differences make MtF and YRBSS results hard to compare directly to those in NSDUH. MtF data are collected every other year. The Behavioral Risk Factor Surveillance System (BRFSS) provides in-depth information about patterns of use of alcohol by adults, but little information about other drug usage.

Direct measurements of the impact of drug abuse and mental illness are not yet standardized nationally. Although a few jurisdictions have been tabulating rates of hospitalization attributable to Alcohol and other Drugs (AOD), a standardized methodology for doing this is just emerging. States may use CDC's web-based Alcohol-related Disease Impact (ARDI) tools to estimate alcohol-related disease impact, including hospitalizations, deaths and costs, but these do not address such impacts due to other drugs.

Public Health Surveillance for Mental Health in the United States

The major sources of information on the epidemiology of mental illness in the United States have been a series of national surveys, implemented beginning in the 1960s. These include the Epidemiology Catchment Area studies (16) and four rounds of the National Comorbidity Survey (17). These surveys have gradually grown in sophistication, especially as reliable instruments have been developed for ascertaining the presence or absence of major disorders, such as depression, through structured face-to-face interviews, questionnaires, and computer-assisted data gathering. They have also grown in sample size, so that regional or even statewide estimates can sometimes be made. However, these large surveys may not be timely for intervention and prevention and do not always have sufficient sample sizes to support state-level estimates.

Since 1971, SAMHSA (and its predecessor agency, the Alcohol, Drug Abuse and Mental Health Administration) have conducted annual, random, population-based surveys of drug use and mental health with sample sizes adequate to make state-level estimates of key findings. The current version of this family of surveys is the National Survey of Drug Use and Health (NSDUH) (18). Due to periodic changes in survey methodology and questionnaire items, results from the earlier years of the survey cannot always be directly compared with current data; full backwards comparability for the current survey design and instrument extends to 2002 for substance abuse and to 2008 for mental illness. Thus, NSDUH provides more data for drug use than for mental health. Nevertheless, its mental health modules include youth (ages 12-17) having major depressive episodes (MDE) in the past year and in their lifetime, treatment for depression among youth who indicated having an MDE, and mental health service use in the past year. Its emphasis for adult mental illness (aged 18 and older) include lifetime and past year major depressive episode, past year any mental illness and serious mental illness, past year and past month serious psychological distress, past year serious thoughts of suicide and suicidal behaviors and mental health service use in the past year. The NSDUH is not designed to estimate the prevalence of specific disorders other than depression. However, a clinical follow-up interview to the NDSUH was conducted from 2008-2012 that collected specific mental disorders on a small subset of adults who response to the NSDUH.

The CDC-sponsored YRBSS (19) obtains self-reported information about suicidal ideation, self-harm and suicide attempts, as well as other mental illness symptoms pertaining to adolescents

attending public school for grades 9-12. Data are not available for every state, however, and are only obtained every other year.

The BRFSS survey (20) of adults aged 18 and older has a well-validated and detailed optional module (21) available for depression, but the module has been used consistently by only a few states. It was included in the BRFSS for 39 states in 2006 but only 8 in 2008. Some states have continued to use it, for example New Mexico in 2011. The BRFSS has also developed an optional module using six questions known as the Kessler 6 to assess non-specific psychological distress (22). The module was included in the BRFSS in 26 states in 2007 and in 8 states in 2009. State-level results for both of these modules were published in 2011 (23). Several states have published state-level surveillance summaries using these data (24,25).

BRFSS items about general mental health (e.g., "*Now thinking about your mental health, which includes stress, depression, and problems with emotions, for how many days out of the last 30 has your mental health not been good?"*) are routinely obtained in every state for all adults and are also tabulated separately for women of reproductive age.

The National Health and Nutrition Examination Survey (NHANES) is designed to assess the health and nutritional status of adults and children in the United States, which is conducted in 2-year cycles. The survey combines interviews and physical examinations. The Depression Screener has been administered during a computer-assisted personal interview as part of NHANES since 2005 (26). NHANES is designed to produce US regional estimates but not state-level estimates.

Few state and local health departments have routinely analyzed available hospital discharge data for mental health conditions. This omission is partly because many states do not include specialty psychiatric hospitals in their hospital discharge databases, and thus the epidemiologic picture would be incomplete. Also, in most states the epidemiologic surveillance functions and programmatic activities related to substance abuse and mental health are in different agencies. Finally, to date there has been no standard epidemiologic method for monitoring hospitalization rates for substance abuse and mental health disorders.
All states have access to high-quality data on incidence of completed suicide through their vital statistics records, though comparability among states may be affected by differences in states' medical examiner/coroner (ME/C) protocols.

Variability in suicide rates by age, race, socioeconomic status, marital status, religion, ethnicity and geographic area has been known for over a century (27). Although rates in any particular subgroup tend to be stable over periods of a few to ten years or more, there can be striking cumulative changes over time, suggesting changes in underlying risk factors. In fact, the close association between suicide rates and various social factors is among the best evidence that prevention of suicide is possible by concerted community action.

Finally, our understanding of suicide patterns is aided by investigating the natural pathways that can end in suicide, including symptoms of depression, episodes of major depression,

hospitalization for mood disorders, suicidal ideation, episodes of self-harm, and suicide attempts. As more and better population-based surveillance is carried out in near real-time for other mental health disorders, we can expect to understand more about the natural risk factors and prevention potential for these disorders as well. As evidenced by the results of the NSDUH survey, only 31.5% of adults with serious mental illness receive treatment or counseling (28). Programs that increase access to the behavioral health care system may prevent future mental illness and other outcomes such as substance abuse and suicide.

CSTE Workgroup on Surveillance Indicators for Substance Abuse and Mental Health

Process

CSTE's Workgroup on Surveillance Indicators for Substance Abuse and Mental Health met monthly from June through December 2015 to develop an initial set of indicators in these domains. In seven conference calls and one two-day, face-to-face meeting, the workgroup identified the scope of the indicators; identified and assessed over 50 potential indicator topics; and went through three rounds of prioritization using a modified Delphi process to identify approximately 20 candidate indicators for the final set. The key result of the scoping exercise was that the group decided to exclude tobacco-related indicators. The 20 candidate indicators were reviewed at the in-person meeting in Chicago, Illinois, October 19-20, 2016.

Recommended Indicators

The CSTE workgroup recommended the use of 18 indicators to measure and monitor substance abuse and mental health in the United States (Table 1). CSTE approved this approach in a position statement from the 2016 annual meeting. These 18 indicators are available from seven existing data systems: four are derived from vital records; three are derived from hospital discharge and emergency department visit data sets; two are derived from the BRFSS; two are derived from the YRBSS; five are based on published NSDUH data; one is based on the Drug Enforcement Agency's ARCOS database of prescription opioid sales; and one is based on CDC's Alcohol Policy Information System.

Position Statement, Pilot Testing, and Version 3 Updates

In June 2016, at the annual business meeting in Anchorage, Alaska, the CSTE position statement recommending the 18 selected indicators was approved by vote (29). Therefore, CSTE recommends the use of these 18 indicators to measure and monitor substance abuse and mental health at the local and state levels in the United States. CSTE supported 2 rounds of indicator pilots to assess the clarity of guidance and develop capacity in public health agencies for the regular collection and reporting of the 18 indicators. In 2017, 4 states participated in the Phase I Pilot. Feedback from those participants was included in a Version 2, released in December 2017. In 2018, 10 states and 5 local jurisdictions completed a Phase II pilot of the updated recommendations. The results of both pilot phases were presented at the CSTE annual conferences in 2017 and 2018. In 2018, CSTE identified that the Substance Use and Mental

Health Indicator Subcommittee would take ownership of the indicators and develop detailed guidance for collection and analysis and coordinate updates to the indicators and guidance as needed going forward. This subcommittee led the completion of Version 3 in January 2019, which includes feedback from Phase II participants and additional refinement of the list and definitions. Version 3 finalizes ICD-10-CM definitions where relevant, focuses on the reporting of crude rates and simplifies the guidance across indicators to improve accessibility for all public health departments. In Spring 2019, CSTE will be supporting state public health departments to report 2016 data for all 18 indicators, with results shared on a data dashboard on the CSTE website.

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Table 1. Summary of CSTE's Substance Abuse and Mental Health Surveillance Indicators, Version 3 (2019)

Indicator #	Indicator	Measure of frequency to be reported
1	Adult binge drinking	Annual prevalence: crude with 95% CIs.
2	Youth binge drinking	Biennial (odd years) prevalence with 95% CI.
3	Alcohol-related crash deaths	Annual number of deaths. Annual crude mortality rate per 100,000
4	Mortality from liver disease and cirrhosis	Annual number of deaths. Annual mortality rate per 100,000: crude.
5	State excise tax; **beer, wine, distilled spirits**	Rate per gallon
6	Drug overdose mortality, all drugs	Annual number of deaths. Annual mortality rate per 100,000: crude, as a total for all drug types together and by drug type.
7	Hospitalization attributable to drugs with potential for abuse and dependence; **all drugs, heroin poisoning, cocaine poisoning, non-heroin opioid poisoning, benzodiazepine-based tranquilizer poisoning, amphetamine poisoning, cocaine abuse or dependence, opioid abuse or dependence**	Annual number of hospital discharges. Annual rate of hospital discharge per 100,000: crude.
8	Prescription opioid sales per capita	Morphine milligram equivalents (MME) per capita.
9	Drug or alcohol dependence or abuse in the last year	Two year prevalence with 95% CIs. States should combine two survey years (e.g., 2013-2014) to provide stable state-level estimates.
10	Prevalence of use of selected prescription and illicit drugs; **past month illicit drug use*, past year marijuana use, past month marijuana use, past month illicit drug use other than marijuana*, past year cocaine use, past year non-medical use of pain relievers***	Two year prevalence with 95% CIs. States should combine two survey years (e.g., 2013-2014) to provide stable state-level estimates. *not available for 2014-2015
11	Suicide rate	Annual number of deaths. Annual mortality rate per 100,000: crude.
12	Hospital discharges for mental disorders; **all, mood and depressive disorders, schizophrenic disorders, all mental disorders EXCEPT drug- and alcohol-induced mental disorders.**	Annual number of hospital discharges. Annual rate of hospital discharge per 100,000: crude and.
13	Emergency department visits for intentional self-harm	Annual number of ED admissions. Annual rate of ED admissions per 100,000: crude.
14	Self-reported youth suicide attempts	Biennial (odd years) prevalence with 95% Cis.

15	Depressive episodes in the past year	Two year prevalence with 95% CIs. States should combine two survey years (e.g., 2014-2015) to provide stable state-level estimates.
16	Any adult mental illness in the past year	Two year prevalence with 95% CIs. States should combine two survey years (e.g., 2014-2015) to provide stable state-level estimates.
17	Serious adult mental illness in the past year	Two year prevalence with 95% CIs. States should combine two survey years (e.g., 2014-2015) to provide stable state-level estimates.
18	Frequent mental distress (≥14 days out of 30)	Annual prevalence: crude with 95% Cis.

Indicator Definitions and Measurements for Substance Abuse and Mental Health Surveillance

Indicator Group: Alcohol

Indicator 1. Adult binge drinking

Demographic group	Adults aged ≥18 years.
Numerator	Adults aged ≥18 years who report having ≥ 5 drinks (men) or ≥ 4 drinks (women) on ≥ 1 occasion during the past 30 days.
Denominator	Adults aged ≥18 years who report having a specific number, including zero, of drinks on one occasion during the past 30 days (excluding those who refused to answer, had missing answers, or answered "don't know/not sure").
Measure of frequency to be reported	Annual prevalence: crude
Time period for case definition	Past 30 days.
Data resources	Behavioral Risk Factor Surveillance System (BRFSS). State-level data are available at the CDC BRFSS website: https://www.cdc.gov/brfss/brfssprevalence/index.html
Background	In 2013, a total of 17.4% of adults reported binge drinking on ≥ 1 occasion during the previous 30 days, with a range among states from 10.3% to 24.4% (2). Binge drinking prevalence in 2010 was higher among men, persons aged 18–34 years, whites, and those with household incomes ≥ $75,000 (3).
Significance	Excessive alcohol use accounted for an estimated average of 88,000 deaths and 2.5 million years of potential life lost (YPLL) in the United States each year during 2006-2010 (4), and an estimated $223.5 billion in economic costs in 2006 (5). Binge drinking accounted for more than half of those deaths, two thirds of the YPLL (6), and three quarters of the economic costs (5). Binge drinking also is a risk factor for many health and social problems, including motor-vehicle crashes, violence, suicide, hypertension, acute myocardial infarction, sexually transmitted diseases, unintended pregnancy, fetal alcohol syndrome, and sudden infant death syndrome (7, 8). In the United States, binge drinking accounts for more than half of the alcohol consumed by adults (9). However, most binge drinkers are not alcohol dependent (10, 11). Reductions in the value of this indicator are expected if states implement policy changes recommended in the CDC Prevention Status Report, and other evidence-based interventions.
Limitations of indicator	This indicator does not convey the frequency of binge drinking or the specific amount of alcohol consumed.

Limitations of data resource	As with all self-reported sample surveys, BRFSS data might be subject to systematic error resulting from non-coverage (e.g., college campuses or the military), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement (e.g., social desirability or recall bias). To address some of these potential concerns, BRFSS began including cell phone-only users in the 2011 data collection. Due to changes in sampling and weighting methodology, 2011 is a new baseline for BRFSS, and comparison with prior year data is inappropriate. A recent study using BRFSS data found that self-reports identify only 22%–32% of presumed alcohol consumption in states, based on alcohol sales (12).
Related indicator or recommendation	*Healthy People 2020* Objective SA-14.3: Reduce the proportion of persons engaging in binge drinking during the past 30 days—Adults aged 18 years and older. http://www.healthypeople.gov/2020/topics-objectives/topic/substance-abuse/objectives CDC's Prevention Status Report: Excessive Alcohol Use.
Note	None.

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Indicator Group: Alcohol

Indicator 2. Youth binge drinking

Demographic group	Students in grades 9–12.
Numerator	Students in grades 9–12 who report having ≥5 drinks of alcohol within a couple of hours on ≥1 day during the past 30 days. (YRBSS case definition for 2015 survey cycles) Students in grades 9–12 who having ≥ 5 drinks of alcohol (males) or ≥ 4 drinks (females) *in a row* on ≥ 1 day during the past 30 days. (YRBSS case definition for 2017 survey cycles)
Denominator	Students in grades 9–12 who report having a specific number, including zero, of drinks of alcohol within a couple of hours during the past 30 days (excluding those who refused to answer, had missing answers, or answered "don't know/not sure"). (YRBSS case definition for 2015 survey cycles) Students in grades 9–12 who report having a specific number, including zero, of drinks of alcohol *in a row* during the past 30 days (excluding those who refused to answer, had missing answers, or answered "don't know/not sure"). (YRBSS case definition for 2017 survey cycles)
Measure of frequency to be reported	Biennial (odd years) prevalence with 95% confidence interval.
Time period for case definition	Past 30 days.
Data resource	Youth Risk Behavior Surveillance System (YRBSS). State-level data are available at CDC YRBSS website: https://nccd.cdc.gov/youthonline/App/Default.aspx
Background	In 2013, 20.8% of high school students in the United States reported binge drinking during the past 30 days, with a range among the states from 5.9% to 24.4% (1). Binge drinking accounts for 90% of the alcohol consumed by youths (2), and about 2 in 3 high school students who drink report binge drinking (3), usually on multiple occasions. In 2013, the prevalence of binge drinking among boys was 22.0% and 19.6% among girls (4). The prevalence of binge drinking was higher among non-Hispanic white (23.2%) and Hispanic (22.6%) students than among black students (12.4%); prevalence increased with grade (4). Binge drinking by youth is correlated with binge drinking by adults (5).

Significance	Alcohol is a factor in the deaths of approximately 4,700 youths in the United States per year, shortening their lives by an average of 60 years (6). Underage drinking cost the U.S. $24 billion in 2006 (7). Binge drinking is a risk factor for many health and social problems, including motor vehicle crashes, violence, suicide, hypertension, acute myocardial infarction, sexually transmitted diseases, unintended pregnancy, fetal alcohol spectrum disorders, and sudden infant death syndrome (8, 9). Reductions in the value of this indicator are expected if states implement policy changes recommended in the CDC Prevention Status Report on excessive alcohol use, and other evidence-based interventions.
Limitations of indicator	The indicator does not convey the frequency of binge drinking or the specific amount of alcohol consumed. Prior to the 2017 administration of YRBSS, the data definition of binge drinking used in the data source (YRBSS) is not gender-specific (as it is for adults). This indicator is available every other year.
Limitations of data resource	As with all self-reported sample surveys, YRBSS data might be subject to systematic error resulting from noncoverage (e.g., no participation by certain schools), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement (e.g., social desirability or recall bias). YRBSS data only apply to youth who are attending school in regular classrooms, and thus may not be representative of all persons in this age group. YRBSS results are not available from every state because some states do not participate in the YRBSS. Moreover, some states that do participate do not achieve a high enough overall response rate to receive weighted data from CDC, and are therefore not included in the results. Some states may be able to use comparable data for this indicator that are collected through a mechanism other than the YRBSS.
Related indicator or recommendation	Healthy People 2020 Objective SA–14.1: Reduce the proportion of students engaging in binge drinking during the past 2 weeks—High school seniors. Healthy People 2020 Objective SA–14.4: Reduce the proportion of persons engaging in binge drinking during the past month—Adolescents aged 12 to 17 years. See: http://www.healthypeople.gov/2020/topics-objectives/topic/substance-abuse/objectives CDC's Prevention Status Report: Excessive Alcohol Use (10).
Note	YRBSS binge drinking related question changed from 2015 to 2017.

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Indicator Group: Alcohol

Indicator 3. Alcohol-related crash deaths

Demographic group	All resident persons.
Numerator	Alcohol-related death of a person involved in crash of a motor vehicle traveling on a public roadway and occurring within 30 days of the crash. Deaths are considered alcohol related when a driver had a blood alcohol concentration (BAC) ≥0.01 g/dL.
Denominator	Midyear population for the calendar year.
Measure of frequency to be reported	Annual number of deaths. Annual crude mortality rate.
Time period for case definition	Calculated annually for all deaths in the most recent calendar year.
Data Resource	Fatality Analysis Reporting System (FARS) coordinated by the National Highway Traffic Safety Administration (numerator) and population estimates from the U.S. Census Bureau or suitable alternative (denominator). Data calculated by CDC and included in annual summary of injury surveillance. FARS data are available at https://crashstats.nhtsa.dot.gov/#/
Background	In 2013, 10,076 people died in alcohol-impaired driving crashes, accounting for nearly one third (31%) of all traffic-related deaths in the U.S. Over half (61%) of the 200 child passengers aged 14 years and younger who died in alcohol-related crashes in 2013 were riding with drivers who had a BAC of 0.08 g/dL or higher (1).
Significance	To the extent that states implement effective programs to prevent driving or cycling while intoxicated, as well as other effective traffic and pedestrian safety interventions, the annual rate of alcohol-related crash deaths will decline in those states.
Limitations of indicator	Injuries severe enough to result in death represent only a small proportion of the overall burden of injury. An evaluation of only these injuries may not present an accurate picture of the causes of less severe injuries.
Limitations of data resource	FARS does not include non-traffic crashes, such as those occurring on driveways and other private property. In addition, it does not include deaths that occur more than 30 days after the motor vehicle crash. Because BACs are not available on all fatalities, the FARS BAC estimates are based on a multiple imputation process.
Related indicator or recommendation	SA-17: Decrease the rate of alcohol-impaired driving (.08+ blood alcohol content [BAC]) fatalities. See: http://www.healthypeople.gov/2020/topics-objectives/topic/substance-abuse/objectives

Related surveillance indicators	Liver disease mortality, adult binge drinking, youth binge drinking.
Note	Data can be found through the FARS Pubs/Data Requests link, in the "Alcohol-Impaired Driving Traffic Safety Fact Sheet" publication (usually in Table 4. Motor Vehicle Traffic Fatalities, by State and Highest Driver BAC in the Crash).

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Indicator Group: Alcohol

Indicator 4. Mortality from liver disease and cirrhosis

Demographic group	All resident persons.
Numerator	Deaths with the *International Classification of Diseases, 10th Revision codes K70.x or K73.x–K74.x* as the underlying cause of death among residents during the calendar year.
Denominator	Midyear resident population for the same calendar year.
Measure of frequency to be reported	Annual number of deaths. Annual mortality rate per 100,000: crude.
Time period for case definition	Calendar year.
Data resource	Death certificate data from state health departments (numerator) and population estimates from the U.S. Census Bureau or suitable alternative (denominator). Available at: https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=PEP_2016_PEPANNRES&src=pt
Background	In 2010, a total of 31,903 persons died from chronic liver disease (2). The age-adjusted rate of death among males (12.7 per 100,000 population) was greater than the rate among females (6.1 per 100,000 population) (2). Death rates among states ranged from 6.4 to 17.0 per 100,000 per year (3).
Significance	Excessive alcohol use accounted for an estimated average of 88,000 deaths and 2.5 million years of potential life lost in the United States each year during 2006–2010 (4) and an estimated $223.5 billion in economic costs in 2006 (5). Sustained alcohol consumption is the leading cause of liver cirrhosis, the 12th leading cause of death (6). The risk for chronic liver disease and cirrhosis is directly related to heavy and long-term alcohol consumption. Implementation of effective state programs to reduce long-term and heavy alcohol consumption, as well as to prevent cirrhosis of other etiologies (such as chronic infection with hepatitis B and C viruses) should reduce state liver disease death rates.
Limitations of indicator	Much alcohol-related disease can have a long latency, with changes in behavior or clinical practice affecting population mortality not be immediately apparent, with the exception of chronic liver disease which is responsive to alcohol policy (7). Not all chronic liver disease deaths are alcohol-attributable (6). In 2009, however, almost 70% of U.S. cirrhosis deaths were alcohol-attributable, and the proportion of cirrhosis deaths coded as 100% alcohol-attributable increased dramatically during 1970–2009 among adults aged 25–64 years (6).

Limitations of data resource	Causes of death and other variables listed on the death certificate might be inaccurate.
Related indicator or recommendation	Healthy People 2020 objective SA–11: Reduce cirrhosis deaths. See: http://www.healthypeople.gov/2020/topics-objectives/topic/substance-abuse/objectives

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Indicator Group: Alcohol

Indicator 5. State excise taxes on alcohol

Demographic group	All resident persons.
Numerator	State taxes levied per gallon of beverage at the wholesale or retail level, by beverage type, reported separately for 1) beer, 2) wine, and 3) distilled spirits.
Denominator	None.
Measure of frequency to be reported	Annual excise tax amount, by beverage type.
Time period for case definition	Annual as of January 1.
Data resource	Alcohol Policy Information System (APIS)-Under the taxation tab: https://alcoholpolicy.niaaa.nih.gov/
Background	The Community Preventive Services Task Force recommends increasing the unit price of alcohol by raising taxes, based on strong evidence of effectiveness for reducing excessive alcohol consumption and related harms (1). Public health effects are expected to be proportional to the size of the tax increase (2). Alcohol consumption is particularly sensitive to the price of alcoholic beverages (2). Across alcohol beverage types (i.e., beer, wine, and distilled spirits), the median price elasticity (a measure of the relationship between price and consumption) ranges from -0.50 for beer to -0.79 for distilled spirits, and the overall price elasticity for ethanol is -0.77 (2). Thus, a 10% increase in the price of alcoholic beverages likely would reduce overall consumption by <7% (2). Recent analyses also note a substantial gap between the societal and governmental cost of excessive alcohol consumption (approximately $1.90 and $0.80 per drink, respectively) and the total federal and state taxes on alcoholic beverages (approximately $0.12 per drink) (3). Alcohol excise taxes are implemented at the state and federal levels and are beverage specific (i.e., differ for beer, wine, and distilled spirits) (2). These taxes usually are based on the volume of alcohol sold and not on the sales price; therefore, their contribution to the total price of alcohol can erode over time because of inflation (2).
Significance	This indicator provides information about the level of state alcohol excise taxes and supports state-level surveillance of an important component of the price of alcohol (i.e., beverage-specific alcohol excise taxes), which has been strongly associated with changes in alcohol consumption (2). At the state and federal levels, inflation-adjusted alcohol taxes have decreased considerably since the 1950s (2). Concordant with this decrease in the real value of these taxes, the inflation-adjusted price of alcohol has decreased, reflecting the fact that changes in taxes are efficiently passed on through changes in prices (2).

	Changes in state alcohol excise tax levels can be expected to lead to changes in per capita consumption and patterns of consumption.
Limitations of indicator	Taxes other than excise taxes that can affect the price of alcoholic beverages (e.g., sales taxes, which are levied as a percentage of the beverage's retail price) are not reported.
Limitations of data resource	Beverage-specific state tax levels are based on the taxes assessed on an index beverage within a particular beverage category (e.g., beer with 5% alcohol by volume) (4). APIS reports taxes for the most commonly sold container size and therefore does not include data on the taxes levied on alcoholic beverages sold in other container sizes. Tax amounts are not reported for states and beverage types for which the index beverage is available in state-run retail stores or through state-run wholesalers. In these cases, the state sets a price for each alcohol product that is some combination of cost, mark-up, and taxes, and determining the dollar value assigned to each of these components is not possible. Some states have separate tax rates for other types of alcoholic beverages (e.g., sparkling wine) that are not included in APIS. However, these beverages generally constitute a small segment of the alcohol retail market.
Related indicator or recommendation	CDC Prevention Status Report: Excessive alcohol use (5).
Note	None.

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Indicator Group: Drugs

Indicator 6. Drug overdose mortality, all drugs

Demographic group	All resident persons.
Numerator	Deaths with *International Classification of Disease 10th Revision* codes as the underlying cause of death among residents during the calendar year: • X40–X44, accidental poisoning by drugs; • X60–X64, intentional self-poisoning by drugs; • X85, assault by drug poisoning and; • Y10–Y14, drug poisoning of undetermined intent. Deaths should also be tabulated on a drug-specific basis, using the T codes below to assign deaths to selected specific drugs. Unspecified drug type should be included as a category. Drug categories include opium (T40.0), heroin (T40.1), other opioids including codeine and morphine (T40.2), methadone (T40.3), other synthetic narcotics (T40.4), cocaine (T40.5), other and unspecified narcotics (T40.6), cannabis (T40.7), lysergide (T40.8), other unspecified psychodysleptics (T40.9), benzodiazepines (T42.4), and psychostimulants with abuse potential (T43.6). Also stratify by T50.9, other and unspecified drugs, medicaments and biological substances, if it is present and none of the T codes listed above are present. Deaths may be counted more than once if more than one drug was involved in the death; numerator need both underlying cause and multiple cause files.
Denominator	Midyear resident population for the same calendar year.
Measure of frequency to be reported	Annual number of deaths. Annual mortality rate per 100,000: crude, distribution, as a total for all drug types together and by drug type (1).
Time period for case definition	Calendar year.
Data resource	Death certificate data from state health department (numerator) and population estimates from the U.S. Census Bureau or suitable alternative (denominator). Available at: https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=PEP_2016_PEPANNRES&src=pt

	Data can be accessed by state offices of vital statistics and through CDC WONDER, available at http://wonder.cdc.gov.
Background	The number and rate of drug poisoning deaths (overdoses) has increased significantly in all regions of the country (2). In 2013 there were almost 44,000 deaths attributed to drug poisoning. From 1999 to 2013, the U.S. death rate from drug poisoning more than doubled, from 6.1 to 13.8 per 100,000 per year. Within this overall epidemic of drug overdose deaths, there has been striking variability by age group, race, ethnicity, and region. From 1999 to about 2006, the major contributor to the increase in such deaths was opioid analgesics. Since 2006, the death rate due to these drugs has stabilized around 5 per 100,000, while the death rate for drug-poisoning deaths involving heroin has risen from 1.0 per 100,000 in 2010 to 2.7 in 2013 (2). Deaths associated with benzodiazepine tranquilizers increased 5-fold from 2001 to 2014 (3). Cocaine-involved deaths peaked in 2006 but reached a low point in 2010 and have since edged up (3). The dynamic and diverse nature of these overdose deaths suggests a need for systematic and timely surveillance for overall deaths and for deaths associated with use of specific substances.
Significance	This indicator measures the burden of deaths attributed to these drugs in the population. Total and drug-specific data illuminate the impact of policies related to prescription drugs and illicit drugs. Drug overdose deaths are preventable through a series of mutually reinforcing activities including (1) measures to reduce inappropriate prescribing of analgesics through health insurance and healthcare system policies and procedures, prescription drug monitoring programs, tighter standards for pain clinics and law enforcement activities; (2) efforts to assure providers know how to identify and address addiction and make appropriate treatment referrals; (3) increased availability of treatment for drug abuse or dependence; and (4) programs to make naloxone more readily available.
Limitations of indicator	Both underlying-cause and multiple-cause death certificate files are needed for these analyses. Death records often lack specificity as to the exact drug responsible for the death. Deaths suspected to be due to these drugs are typically medical examiner or coroner cases, and the extent of laboratory analysis varies by jurisdiction. Records indicating that the death is due to overdose with an unknown or unspecified drug are an issue in many states, and these should be tabulated separately. Nationally, 22% of 2013 death certificates for persons dying of drug poisoning lacked information on the type(s) of drug involved (4), and this varied considerably among the states. Information about drug type may not be fully comparable across jurisdictions. Multiple drugs are often involved in a drug overdose death, and each death should be tabulated according to each drug mentioned on the death certificate. For example, approximately 16% of drug-poisoning deaths involving heroin also involve opioid analgesics (2). In deaths involving opioids, substances such as tranquilizers and alcohol may be important cofactors in causing death, with only modest doses of the opioid.

Limitations of data resource	Finalized files of death certificate data are often unavailable until 6 to 18 months after the end of a calendar year, although they are becoming more timely with electronic death registration. Records for deaths of greatest interest for this indicator are often particularly delayed because of further laboratory testing by the medical examiner or coroner (ME/C), though delays may be minimized through cooperation with these officials. Records for jurisdiction residents who die outside the jurisdiction are also often delayed in the interstate notification process. Jurisdictions vary as to the extensiveness of ME/C laboratory investigation and availability of electronic death records in real time (especially those for ME/C cases).
Related indicator or recommendation	MSA 12: Reduce drug-induced deaths. MSP 2.4: Reduce deaths from the use of pain medicines. IVP 9: Prevent an increase in poisoning deaths. See http://www.healthypeople.gov/2020/topics-objectives/topic/substance-abuse/objectives
Note	See supplemental guidance on using WONDER: Introduction to Multiple Causes of Death Dataset on WONDER available at https://www.cdc.gov/drugoverdose/pdf/pdo_wonder_guide_mcod_dataset-a.pdf.

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Indicator Group: Drugs

Indicator 7. Hospitalizations attributable to drugs with potential for abuse and dependence, all drugs

Demographic Group	All resident person.
Numerator [1]	Hospitalizations attributable to drugs with potential for abuse and dependence, excluding alcohol, substances that cause adverse effects in therapeutic use, and underdosing. A case is identified using the principal (first-listed) diagnosis code [specific *International Classification of Disease 10th Revision, Clinical Modification (ICD-10-CM)* codes are listed in Table 1 below]. All hospitalizations of jurisdiction residents occurring in acute care, non-federal in-state hospital settings are included. Excluded are those with unknown age, out-of-jurisdiction residence, unknown state of residence, non-acute care or federal hospital admission, and admission only for short stays or observation visits. Calculate separately for the following drugs using the codes in Table 1: 1) Heroin poisoning, 2) Cocaine poisoning, 3) Non-heroin opioids, 4) Benzodiazepine-based tranquilizer poisoning, 5) Amphetamine poisoning Note that in states where emergency department (ED) visits and hospital discharges are combined in a single database, the same record selection criteria can be applied to hospital ED visits that do not result in hospitalization as to hospital admissions/discharges.
Denominator	Midyear resident population for the same calendar year.
Measure of frequency to be reported	Annual number of hospital discharges. Annual rate of hospital discharge per 100,000: crude 1), as a total for all drug types together and by drug type (1).
Time period for case definition	Calendar year.
Data resource	State hospital discharge database.

Background	In 2014, there were nearly 260,000 hospitalizations resulting from nonfatal, unintentional drug poisonings (2). Of these, 3.2% (8,290) were attributable to methamphetamine poisonings, 5.1% (13,265) were attributable to cocaine poisoning, and 20.4% (53,000) were due to opioid poisonings. Moreover, heroin was identified as the involved opioid in 21.7% of the opioid hospitalizations.
Significance	Drug-related hospitalizations represent the more severe morbidity burden of drug use. Drug-related hospitalizations are preventable through a series of mutually reinforcing activities including, but not limited to, (1) measures to reduce inappropriate prescribing of analgesics through health insurance and care system policies and procedures, prescription drug monitoring programs, tighter standards for pain clinics and law enforcement activities; (2) efforts to assure providers know how to identify and address addiction and make appropriate treatment referrals; (3) increased availability of treatment for drug abuse or dependence and (4) programs to make naloxone more readily available. This indicator measures an important component of the morbidity burden of drugs in the population. Total and drug-specific data inform the impact of policies related to nonmedical use of prescription drugs, as well as to other drugs with potential for abuse and dependence. Patterns of drug use and abuse vary greatly over time and by age group, race, ethnicity, income level, and geography. Timely monitoring of hospitalizations by specific drug type, as well as overall, can assist in rapid identification and characterization of community health threats.
Limitations of indicator	Captures admissions for which drug use is the primary reason, per the admitting physician. Thus, it does not capture admissions for which drug use may be an ancillary or indirect reason, e.g., a motor vehicle crash injury caused by drug-impaired driving. This indicator is only as good as the recognition, documentation and coding of drug use and drug-related diagnoses by hospital staff, all of which are known to vary. It documents definitively those cases in which drug use is the main impetus for the admission.
Limitations of data resource[2]	Data availability may lag a year or more behind hospitalization date, depending on the jurisdiction. Because most jurisdictions do not include information from U.S. Veterans Administration, Department of Defense and Indian Health Service hospitals in their hospital discharge data—and many do not include specialty hospitals, such as psychiatric facilities—information from these facilities is excluded from the numerator of this measure. As a result, the included hospitalizations may not be representative of all such events in the jurisdiction, and there may be underestimation of hospitalization rates. Since the unit of analysis is the episode

	of care, not the individual, individuals with several hospital admissions during an analysis period may be counted several times. Completeness and quality of ICD-9-CM and ICD10-CM coding are limiting factors for any indicator based on administrative data. Comparability cannot be assured over the transition from ICD-9-CM-coded to ICD10-CM-coded hospital discharge data.
Related indicator or recommendation	IVP-10: Prevent an increase in nonfatal poisonings. MPS 2.3: Reduce serious injuries from the use of pain medicines. See http://www.healthypeople.gov/2020/topics-objectives/topic/medical-product-safety/objectives and http://www.healthypeople.gov/2020/topics-objectives/topic/injury-and-violence-prevention/objectives
Note	None.

References

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Table 1

ICD-10-CM codes and corresponding diagnoses for hospitalizations attributable to drugs with potential for abuse and dependence

ICD-10-CM Code*	Diagnosis
F11.1 - F11.9	Opioid related disorders
F12.1 - F12.9	Cannabis related disorders
F13.1 - F13.9	Sedative, hypnotic, or anxiolytic related disorders
F14.1 - F14.9	Cocaine related disorders
F15.1 - F15.9	Other stimulant related disorders
F16.1 - F16.9	Hallucinogen related disorders
F19.1 - F19.9	Other psychoactive substance related disorders
O99.32	Drug use complicating pregnancy, childbirth, and the puerperium
P04.4	Newborn (suspected to be) affected by maternal use of drugs of addiction
P96.1	Neonatal withdrawal symptoms from maternal use of drugs of addiction
T40.0 - T40.9	Poisoning by narcotics and psychodysleptics (hallucinogens)
T42.3	Poisoning by barbiturates
T42.4	Poisoning by benzodiazepines
T42.6	Poisoning by other antiepileptic and sedative-hypnotic drugs
T42.7	Poisoning by unspecified antiepileptic and sedative-hypnotic drugs
T43.6	Poisoning by psychostimulants

*The listed code may be an abbreviation of the full ICD-10-CM code. Codes are comprised of between 4 and 7 characters. For all T codes, adverse effects, underdosing, and encounters due to sequela are excluded.

Indicator Group: Drugs

Indicator 8. Prescription opioid sales per capita

Demographic group	All resident persons.
Numerator	Total state sales of prescription opioids by pharmacies, expressed in morphine milligram equivalents (MMEs)/per capita.
Denominator	Midyear resident population for the same calendar year.
Measure of frequency to be reported	Annual sales of opioid prescription drugs (MME/per capita) sold by pharmacies. Opioid prescription drugs include the following: Codeine, Buprenorphine, Dihydrocodeine, Oxycodone, Hydromorphone, Hydrocodone, Levorphanol, Meperidine (Pethidine), Methadone, Morphine, Opium Powdered, Oxymorphone, Tapentadol, Fentanyl Base
Time period for case definition	Calendar year.
Data Resource	Drug Enforcement Administration ARCOS (Automation of Reports and Consolidated Orders System) database. Available at: https://www.deadiversion.usdoj.gov/arcos/retail_drug_summary/index.html
Background	The number of kilograms of morphine equivalent of prescription opiates and opioids sold per 10,000 population in the U.S. as a whole rose from 3.0 in 2001 to 8.5 in 2014. In 2001, the range among the states was 1.8 to 5.4 kg per 10,000; in 2014 it was 4.8 to 14.8. Prescription opioid drug abuse and dependence has become a major medical and public health issue, whether measured as number of people needing treatment for dependence or addiction, number of hospitalizations or number of overdose deaths. Although opioid drugs are an important medical intervention for pain relief (e.g., in relation to surgery, cancer or injuries), there are large grey areas between indicated and non-indicated uses. These grey areas enable people to obtain prescriptions, often from unethical prescribers, for their own non-medical use or for resale to others. The U.S. Drug Enforcement Administration (DEA) tracks total sales of opioid drugs to pharmacies, measured as MMEs. Because the legitimate medical need for pain relief is roughly the same everywhere (despite varying prescribing practices), total sales of these drugs provides an indicator of their possible overuse, diversion and/or abuse. Measures to control diversion of these drugs are different from those needed to control the manufacture, distribution and sale of street drugs such as heroin, methamphetamines and cocaine, which are manufactured outside the legal pharmaceutical industry.

Significance	State restrictions, policies or guidelines to ensure safe opioid prescribing practices should result in a reduction in per-capita sales. Implementation of effective prescription drug monitoring programs (intended to reduce doctor-shopping for opioid drug prescriptions) and pain clinic medical practice guidelines should result in reduced consumption (1).
Limitations of indicator	This indicator cannot distinguish between prescriptions issued for necessary pain relief and prescriptions issued for other reasons (e.g., because of fraudulent requests by patients or because of unethical prescribing). The optimal amount of prescribed MMEs of opioid drugs per capita is not known. Reducing overall consumption of opioid drugs too low could mean that some people are not obtaining needed pain relief. CDC has issued guidelines for prescribing opioids for pain relief (2).
Limitations of data resource	The data reported by the U.S. DEA reflect the distribution of prescription opioids to pharmacies, not actual prescriptions written or filled, medications taken, or individual users. Thus, total sales are an overestimate of consumption. The degree of overestimation is expected to be consistent over time, however. Consumption per capita could reflect heavy consumption by a few people or moderate consumption by many.
Related indicator or recommendation	SA 19.1: Reduce the past-year nonmedical use of pain relievers. See http://www.healthypeople.gov/2020/topics-objectives/topic/substance-abuse/objectives
Note	Data can be found through the ARCOS link. Select appropriate Reporting Period and data can usually be found under Report 5 "Statistical Summary for Retail Drug Purchases by Grams WT" Activity A – Pharmacies. Sum select prescription opioids then multiply "Total Grams" by 1000 and divide by midyear population.

References

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Indicator Group: Drugs

Indicator 9. Illicit drug or alcohol dependence or abuse in the past year

Demographic group	All persons aged ≥12 years.
Numerator	All persons aged ≥12 years who answered question items positively, meeting DSM-IV inclusion criteria, for dependence on or abuse of alcohol or illicit drugs in the past year. Illicit drugs include marijuana/hashish, cocaine (including crack), heroin, hallucinogens, inhalants and methamphetamines, and nonmedical use of prescription pain relievers, tranquilizers, stimulants, or sedatives (1).
Denominator	All persons aged ≥12 years (excluding those who refused to answer, had missing answers, or answered "don't know/not sure").
Measure of frequency to be reported	Two year prevalence with 95% confidence intervals. States should combine two survey years (e.g., 2013-2014) to provide stable state-level estimates. State estimates provided by the Substance Abuse and Mental Health Services Administration are developed using a small area estimation procedure in which state-level NSDUH data from 2 survey years are combined with local-area county and census block group/tract-level data from the state. This model-based methodology provides more precise estimates of state-level substance use than those based solely on the sample, particularly for smaller states (2).
Time period for case definition	Past year.
Data resources	National Survey of Drug Use and Health (NSDUH). State-level NSDUH estimates are available at: http://www.samhsa.gov/data/population-data-nsduh/reports?tab=33 (Note: Access link with specific year of interest [e.g., *2014-2015 NSDUH State-specific Tables*]) and http://pdas.samhsa.gov/saes/state.

Background	This is a summary measure (see note below) of dependence on or abuse of alcohol, drugs or both. It documents the overall abuse/dependence burden on society of all of these agents, whether used separately or together. From 2013/2014, alcohol dependence or abuse among persons aged 12 and over was 6.5%%, for illicit drugs was 2.64%, and for both (alcohol and illicit drugs) was 8.16% (3). For middle-aged, white, non-Hispanic persons with no education beyond high school, the combined death rate from drug overdose, suicide and alcoholic liver disease has risen strikingly in the first 15 years of the new century (4). This surveillance indicator captures and combines information about most of the direct risk behaviors for these causes of death.
Significance	This indicator captures a very broad set of precursors of ill health, disability and death. Effective evidence-based state-level and national interventions to reduce use and abuse of alcohol and illicit drugs and dependence on these substances, and to improve availability of treatment services, should result in improvements in the value of this indicator.
Limitations of indicator	This is an overall summary measure of dependence on or abuse of either alcohol, drugs or both. It relies on multiple NSDUH questionnaire items, which are self-reported with a long recall period. The indicator captures information on the U.S. civilian, non-institutional population aged 12 or older. NSDUH excludes homeless people who do not use shelters, military personnel on active duty, and residents of institutional group quarters, such as jails and hospitals. It hides regional variations in relative importance of various drugs and of alcohol but documents the overall burden on society and on the healthcare system of abuse and/or dependence on all these agents together. This indicator is intentionally broad; users interested specifically in alcohol, in illicit drugs as a whole, or in specific illicit drugs will need to examine other indicators.

Limitations of data resource	Reported data rely on a two-year rolling average and reflect respondents' recalled experience for the full twelve months before the interview date. Data collected during the two-year period ending in December of one year are reported approximately one year later. Thus, the earliest events captured in the data reported each year may have occurred up to three years before the data become available. The data reported by SAMHSA are derived from a long-running, annual, face-to-face household survey with high response rates and extensive quality checking. As with any sample survey, issues with data item validity and over- or under-estimation of parameters of interest may arise. Small numbers of subjects in sub-state areas limit ability to make sub-state area estimates, especially in less populous states. The NSDUH questionnaire underwent a partial redesign in 2015 to improve the quality of the NSDUH data and to address to changing needs of policymakers and researchers, resulting in lack of availability of some indicators, including those pertaining to illicit drugs, for 2014 and 2015.
Related indicator or recommendation	SA-19: Reduce the past-year nonmedical use of prescription drugs. SA-13: Reduce past-month use of illicit substances. SA15: Reduce the proportion of adults who drank excessively in the previous 30 days. See http://www.healthypeople.gov/2020/topics-objectives/topic/substance-abuse/objectives

Note(s)

There are seven possible dependence criteria for specific drugs (1):

1. spent a lot of time engaging in activities related to use of the drug,
2. used the drug in greater quantities or for a longer time than intended,
3. developed tolerance to the drug,
4. made unsuccessful attempts to cut down on use of the drug,
5. continued to use the drug despite physical health or emotional problems associated with use,
6. reduced or eliminated participation in other activities because of use of the drug, and
7. experienced withdrawal symptoms when respondents cut back or stopped using the drug.

For most drugs, dependence is defined as meeting three or more of these seven criteria. However, experiencing withdrawal symptoms is not included as a criterion for some illicit drugs based on DSM-IV criteria. For these substances, dependence is defined as meeting three or more of the first six criteria.

Respondents who used (or misused) a specific illicit drug in the past 12 months and did not meet the dependence criteria for that drug were defined as having abuse were defined as meeting the abuse criteria for that drug if they reported one or more of the following:

1. problems at work, home, and school because of use of the drug;
2. regularly using the drug and then doing something physically dangerous;
3. repeated trouble with the law because of use of the drug; and
4. continued use of the drug despite problems with family or friends.

References

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Indicator Group: Drugs

Indicator 10. Prevalence of use of selected prescription and illicit drugs (6 sub-indicators)

Demographic group	All persons aged ≥12 years.
Numerator	All persons aged ≥12 years who answered question items positively on past month/year use of the following: 1) Illicit drug use in the past year 2) Marijuana use in the past year 3) Marijuana use in the past month 4) Illicit drug use other than marijuana in the past month 5) Cocaine use in the past year 6) Nonmedical use of pain relievers in the past year Illicit drugs include marijuana/hashish, cocaine (including crack), heroin, hallucinogens, inhalants, or prescription-type psychotherapeutics used non-medically (1).
Denominator	All persons aged ≥12 years (excluding those who refused to answer, had missing answers, or answered "don't know/not sure").
Measure of frequency to be reported	Two year prevalence with 95% confidence intervals. States should combine two survey years (example 2013-2014, 2014-2015) to provide stable state-level estimates. State estimates provided by the Substance Abuse and Mental Health Services Administration are developed using a small area estimation procedure in which state-level NSDUH data from 2 survey years are combined with local-area county and census block group/tract-level data from the state. This model-based methodology provides more precise estimates of state-level substance use than those based solely on the sample, particularly for smaller states (2).
Time period for case definition	Past month or past year, depending on drug.
Data resources	National Survey of Drug Use and Health (NSDUH). State-level NSDUH estimates are available at: http://www.samhsa.gov/data/population-data-nsduh/reports?tab=33 and at http://pdas.samhsa.gov/saes/state

Background	Nationwide, NSDUH estimated past-month illicit drug use in 2012-13 as 9.27% for those aged 12 and older, 9.18% for those aged 12-17, 21.44% for those aged 18-25, and 7.19 for those aged 26 and older. State-specific estimates ranged from 6.2% to 15.1% among adolescents and from 6.2% to 15.8% among adults. Similar variability among the states is seen for individual drugs. For past-month use of marijuana, adolescent and adult use were similar; adolescent use ranged from 5.2% to 12.9%, and adult use from 5.0% to 14.2%. Past-year cocaine use was rare in adolescents, ranging from 0.4% to 1.1%, and more common in adults, ranging from 1.1% to 2.9% (3). Extensive trend data for 2002-2014 are available at http://www.samhsa.gov/data/sites/default/files/NSDUH-FRR1-2014/NSDUH-FRR1-2014.pdf. Just as for hospitalization and mortality, time trends and population groups with greatest use are quite different for different drugs on a multi-year time scale.
Significance	Use of these substances varies over time, space, and personal characteristics, and is a product of many factors acting separately and together, including price and availability of substances, cultural acceptability, concurrent mental distress, and social factors such as prolonged unemployment, poverty or family dysfunction. The substance abuse surveillance indicators in this document range from simple use (this indicator) through abuse and dependence, to hospitalization and death. It is important to have windows into the entire potential natural history of drug use and the entire spectrum of severity, in order to understand the determinants of adverse health effects and the impact of various prevention and control measures.
Limitations of indicator	This is a measure of drug use, not dependence or abuse. It relies on self-report for multiple NSDUH questionnaire items and has a relatively long recall period (one month for some drugs, 12 months for others). The indicator captures information on the U.S. civilian, non-institutional population aged 12 or older. NSDUH excludes homeless people who do not use shelters, military personnel on active duty, and residents of institutional group quarters, such as jails and hospitals. It masks regional variations in drug use within states but documents the population-level exposure to each.
Limitations of data resource	The data reported rely on a two-year rolling average and reflect respondent's self-reported experience for either one month or a full twelve months before the interview date. Data collected during the two-year period ending in December of one year are reported approximately one year later. Thus, the earliest events captured in the data reported each year may have occurred up to two or even three years before the data become available. The data reported by SAMHSA are derived from a long-running annual face-to-face household survey with high response rates and extensive quality checking. As with any sample survey, issues with data item validity and over- or under-estimation of parameters of interest may arise. Small numbers of subjects in sub-state areas limit ability to make sub-state area estimates, especially in less populous states. The NSDUH questionnaire underwent a partial redesign in 2015 to improve the quality of the NSDUH data and to address to changing needs of policymakers and researchers, resulting in lack of availability of some indicators, including those pertaining to illicit drugs, for 2014 and 2015.
Data access	State-level estimates from the NSDUH are available at http://www.samhsa.gov/data/population-data-nsduh/reports?tab=33 and at http://pdas.samhsa.gov/saes/state

	(Note: Access link with specific year of interest [e.g., 2014-2015 NSDUH State-specific Tables])
Related indicator or recommendation	SA-2:Increase the proportion of adolescents never using substances. SA-13:Reduce past-month use of illicit substances. SA-19:Reduce the past-year nonmedical use of prescription drugs. See http://www.healthypeople.gov/2020/topics-objectives/topic/substance-abuse/objectives.
Note	None.

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Indicator Group: Mental Health

Indicator 11. Suicide rate

Demographic group	All resident persons.
Numerator	Suicides with *International Classification of Disease 10th Revision (ICD10) codes* as the underlying cause of death: • X60–X84, intentional self-harm; • Y87.0, sequelae of intentional self-harm; • U03, terrorism-intentional self-harm.
Denominator	Midyear resident population for the same calendar year.
Measure of frequency to be reported	Annual number of deaths. Annual mortality rate per 100,000: crude.
Time period for case definition	Calendar year.
Data Resource	Death certificate data from state health department (numerator) and population estimates from the U.S. Census Bureau or suitable alternative (denominator). Available at: https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=PEP_2016_PEPANNRES&src=pt
Background	In the United States, the 2015 age-adjusted suicide rate was 13.3, at 28% increase since 2000 (2). In 2015, suicide was the 10th leading cause of death among all persons (3). Among males, suicide was the seventh leading cause of death. Suicide was the third leading cause of death among children aged 5-14 years, the second leading cause of death among persons 15-24 years, fourth leading cause of death among 25-44 years, and the eighth leading cause of death among persons 45-64 years.
Significance	To the extent that effective, evidence-based strategies are implemented in communities, suicide rates can be expected to fall, and this change will be reflected in this indicator. Striking regional variations in suicide rates indicate the potential for prevention.

Limitations of Indicator	Injuries severe enough to result in death represent only a small proportion of the overall burden of self-inflicted injury. An evaluation limited to fatal injuries may not present an accurate picture of the causes and impacts of less-severe injuries. Medical examiners or coroners may misclassify intentionality of death. The proportion of deaths of undetermined intent varies by jurisdiction.
Limitations of data resource	The accuracy of indicators based on vital statistics codes is limited by the completeness and quality of coding. The overall completeness of external cause coding on death data is uniformly high. Coding criteria specify that cases of injury death must contain an injury code in the underlying-cause-of-death field. Data-sharing among geographic jurisdictions can be slow, making final determination of numbers of suicide deaths less timely than desired. Different jurisdictional definitions and processes may result in some loss of comparability across jurisdictions.
Related indicator or recommendation	MHMD-1: Reduce the suicide rate. See http://www.healthypeople.gov/2020/topics-objectives/topic/mental-health-and-mental-disorders/objectives
Note(s)	Attempts should be made to include discharges from all hospitals (including psychiatric hospitals). The specification of this indicator uses primary diagnosis in the numerator, and this will be most useful for national and cross-state comparisons. Realizing that this may underestimate the prevalence, an additional calculation could be made using recording of suicide in any of all diagnoses codes. For other information regarding methodology, see https://www.cdc.gov/injury/stateprograms/indicators.html.

References

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Indicator Group: Mental Health

Indicator 12. Hospital discharges for mental disorders (3 subindicators)

Demographic group	All resident persons.
Numerator	1) Hospitalizations, discharged from civilian, non-federal acute care hospitals, attributable to a mental disorder with primary diagnosis of a mental, behavioral or neurodevelopmental disorder *(International Classification of Disease 9th Clinical Modification (ICD-9-CM) codes 290-319, ICD-10-CM codes F01-F99),* total and three subindicators: mood and depressive disorders (ICD-9-CM 296 and 311; ICD10-CM F30 to F39), 2) schizophrenic disorders (ICD-9-CM 295; ICD10-CM F20 to F29), and 3) all mental disorders EXCEPT drug- and alcohol-induced mental disorders (ICD-9-CM 290, 293-302, 306-319; ICD10-CM F01-F09, F20-F99).
Denominator	Midyear resident population for the same calendar year.
Measure of frequency to be reported	Annual number of hospital discharges. Annual rate of hospital discharge per 100,000: crude.
Time period for case definition	Calendar year.
Data resource	State hospital discharge database.
Background	Mental disorders, when serious and untreated, can cause significant morbidity, reduced quality of life, numerous hospitalizations and a burden to the local healthcare system. Mood disorders are particularly important contributors to disability-adjusted life years lost (DALYs), contributing 3.7% of the U.S. total in 2013, and to years lived with disability (YLDs), contributing 7.7% of the U.S. total in 2013. Anxiety disorders contribute 2.3% of DALYs and 4.7% of YLDs, and schizophrenia contributes 0.9% of DALYs and 1.9% of YLDs (2).
Significance	Planning for healthcare system resources, including outpatient treatment (which can reduce hospitalizations and costs) can be improved by understanding subpopulation rates of hospitalizations for mental disorders and trends in those rates. Evidence-based primary and secondary preventive interventions should have an impact on these rates.

Limitations of indicator	Severity of illness resulting in hospital admission varies by locale based on local mental health systems. Admissions with one of the designated codes present only as a secondary diagnosis are excluded from the numerator. Changes in insurance reimbursement policies, or changes in recommendations for psychiatric diagnosis, may increase or decrease hospitalization rates without reflecting changes in true disease burden. Self-harm is not included.
Limitations of data resource	Out-of-jurisdiction admissions by jurisdiction residents are typically not included in jurisdiction databases. In addition, discharges from federal hospitals (e.g., U.S. Veterans Administration, Department of Defense and Indian Health Service hospitals) and from specialty facilities (e.g., psychiatric care centers) may or may not be included in the hospital discharge database, depending on state law and local data agreements. Such differences would limit inter-jurisdiction comparisons.
Related indicator or recommendation	MHMD-4: Reduce the proportion of persons who experience major depressive episodes (MDEs). MHMD-9: Increase the proportion of adults with mental health disorders who receive treatment. See http://www.healthypeople.gov/2020/topics-objectives/topic/mental-health-and-mental-disorders/objectives
Note	None.

Reference

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Indicator Group: Mental Health

Indicator 13. Emergency department visits for intentional self-harm

Demographic group	All resident persons.
Numerator	Emergency department (ED) admissions, from civilian, acute care, nonfederal hospitals, with any primary diagnosis of intentional self-injury International Classification of Disease 9th Revision Clinical Modification (ICD-9-CM) codes E950-E958 or first-listed valid E-code in secondary diagnosis field. Note: Corresponding ICD10-CM codes are T36 to T65 inclusive where 6th digit is 2, and X71 to X83 inclusive, as first-listed diagnosis. Except for T36.9, T37.9, T39.9, T41.4, T42.7, T43.9, T45.9, T47.9, T49.9, T51.9, T52.9, T53.9, T54.9, T56.9, T57.9, T58.0, T58.1, T58.9, T59.9, T60.9, T61.0, T61.1, T61.9, T62.9, T63.9, T64.0, T64.8, and T65.9, the 5th character indicates intent.
Denominator	Midyear resident population for the same calendar year.
Measure of frequency to be reported	Annual number of ED admissions. Annual rate of ED admissions per 100,000: crude.
Time period for case definition	Calendar year.
Data Resource	State hospital discharge database or emergency department database. Note: In some states the syndromic surveillance system may be able to provide the same data.
Background	Suicide attempts are highly correlated with suicide mortality, though the relationship between attempts and completions is different for men and for women. Suicide is one of the top 10 leading causes of death in the United States and is increasing in certain demographic subgroups. An analysis focusing only on completed suicides will miss important morbidity. Putting this behavior under public health surveillance defines the suicide risk by subpopulation and by access to certain suicide mechanisms, thus providing more detail than is available for completed suicides alone. A national strategy to prevent suicide includes components to promote healthy and empowered individuals, families and communities; to enhance preventive services; to increase availability of treatment and support services; and to improve surveillance, research and evaluation (2).
Significance	Successful efforts to prevent suicides should also prevent suicide attempts, and this should be evident in the data. The relationship between attempts and completed suicides may differ by subpopulation and by method.

Limitations of indicator	Only self-injury presentations to the emergency department are included; persons who do not seek medical care are not counted. Intentionality may be misclassified by clinicians. This indicator does not perfectly measure suicide attempts: for example, injury may be intentional but not intended to result in death. Sequelae of intentional self-injury (E959) are not included in this measure to reduce duplicate counts for individual suicide attempts. However, this convention may exclude persons who did not initially visit the emergency department for their injury. There is little experience to date in most jurisdictions for systematic examination of this indicator.
Limitations of data resource	E-codes may not be documented for every visit when ICD-9-CM is used. There is little experience so far on possible quality issues in facilities using ICD10-CM. Residents who are treated in other geographic areas are not captured. Federal facilities (e.g., Veterans Administration, Department of Defense, Indian Health Service hospitals) sometimes do not have data-sharing agreements with local areas, so visits to such facilities would be missed in some states, but not others, if they were included in the analysis.
Related indicator or recommendation	MHMD-1: Reduce the suicide rate. MHMD2: Reduce suicide attempts by adolescents. See http://www.healthypeople.gov/2020/topics-objectives/topic/mental-health-and-mental-disorders/objectives
Note	None.

Reference

1. Klein RJ, Schoenborn CA. Age adjustment using the 2000 projected U.S. population. Healthy People 2010 Statistical Notes, No. 20. Hyattsville, MD: US Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Health Statistics; 2001. Available at http://www.cdc.gov/nchs/data/statnt/statnt20.pdf. Accessed October 16, 2017.

2. United States Surgeon General. National Strategy for Suicide Prevention: Goals and Objectives for Action, 2012. A Report of the U.S. Surgeon General and of the National Action Alliance for Suicide Prevention. Available at http://www.surgeongeneral.gov/library/reports/national-strategy-suicide-prevention/. Accessed October 15, 2015. PMID: 23136686

Indicator Group: Mental Health

Indicator 14. Self-reported youth suicide attempts

Demographic group	Students in grades 9-12.
Numerator	Students in grades 9-12 who reported attempted suicide at least once in the past 12 months
Denominator	All students in grades 9-12 (excluding those who refused to answer, had missing answers, or answered “don’t know/not sure”).
Measure of frequency to be reported	Biennial (odd years) prevalence with 95% confident intervals.
Time period for case definition	Past year.
Data Resource	Youth Risk Behavior Surveillance System. Available at https://www.cdc.gov/healthyyouth/data/yrbs/index.htm.
Background	Suicide attempts are highly correlated with suicide mortality and are a major cause of morbidity. Persons who attempt suicide are at increased risk for completed suicide. The ratio between attempts and completions is not the same for men and women, or for boys and girls. Suicide is one of the 5 leading causes of death for U.S. youth. In the 2013 YRBSS, nationwide, 8.0% of students had attempted suicide one or more times during the 12 months before the survey. The prevalence of having attempted suicide was higher among female (10.6%) than male (5.4%) students. Among the 40 states with analyzable data, the percentage of students reporting having attempted suicide ranged from 6.0% to 14.3% (1).
Significance	YRBSS data define the risk for suicide attempt and indirectly for completed suicide by subpopulation. Successful efforts to prevent suicide should also prevent suicide attempts, and this should be evident in the data. The relationship between attempts and completed suicides may differ by subpopulation and by method.
Limitations of Indicator	Data are conducted biennially in participating states (2).
Limitations of Data Resource	Only public-school students are included; youth who drop out of high school are excluded. In 2013 only 40 of the states participated fully in the YRBSS and had data reported (1). Some states that collect survey data do not get a high enough response rate, and CDC does not weight or report these data. Data are collected only for odd-numbered years.

Related indicator or recommendation	MHMD2: Reduce suicide attempts by adolescents. See http://www.healthypeople.gov/2020/topics-objectives/topic/mental-health-and-mental-disorders/objectives
Note	None.

Reference

1. Kann L, Kinchen S, Shanklin SL, et al. Youth risk behavior surveillance —United States, 2013. *MMWR* 2014;63(No. SS-4):1-172.
2. Brenner Naccy D, Kann L, Shanklin Shari, et al. Methodology of the Youth Risk Behavior Surveillance System — 2013. MMWR 2013; 62 (No.SS-4). Available at https://www.cdc.gov/mmwr/pdf/rr/rr6201.pdf Accessed October 16,2017

Indicator Group: Mental Health

Indicator 15. Depressive episodes in the past year

Demographic group	All persons aged 12-17 and ≥18 years.
Numerator	All persons aged 12-17 and ≥18 years who answered question items positively, meeting DSM-IV inclusion criteria, for major depressive episode in the past year. NSDUH uses different age-adapted questions based on the DSM-IV to ask adults and adolescents about their experiences with MDE. Adults and adolescents were defined as having an MDE if they had a period of 2 weeks or longer in the past 12 months when they experiences a depressed mood or loos of interest or pleasure in daily activities, and they had at least some additional symptoms, such as problems with sleep, eating, energy, concentration and self-worth (1).
Denominator	All persons aged 12-17 and ≥18 years (excluding those who refused to answer, had missing answers, or answered "don't know/not sure").
Measure of frequency to be reported	Two year prevalence with 95% confidence intervals. States should combine 2 survey years (example 2013-2014, 2014-2015) to provide stable state-level estimates. State estimates provided by the Substance Abuse and Mental Health Services Administration are developed using a small area estimation procedure in which state-level NSDUH data from 2 survey years are combined with local-area county and census block group/tract-level data from the state. This model-based methodology provides more precise estimates of state-level substance use than those based solely on the sample, particularly for smaller states (2).
Time period for case definition	Past year.
Data resources	National Survey of Drug Use and Health (NSDUH). State-level NSDUH estimates are available at: http://www.samhsa.gov/data/population-data-nsduh/reports?tab=33 and http://pdas.samhsa.gov/saes/state.

Background	Depression is common and serious; depressive episodes are major causes of morbidity and disability, as well as being precursors to self-harm and suicide. In the United States during 2012-2013, NSDUH data showed an estimated 6.77% of persons over age 18 had at least one major depressive episode in a 12-month span. Many were not specifically medically attended. The percentage of persons aged 18 and over reporting a major depressive episode by state ranged from 5.63% to 9.45%. An estimated 9.86% of adolescents aged 12 to 17 had at least one major depressive episode in a 12-month span. The percentage of persons aged 12 to 17 reporting a major depressive episode by state ranged from 7.95% to 12.65%. (3)
Significance	Implementation by states of effective and evidence-based interventions to reduce episodes of major depressive episodes should affect the value of this indicator.
Limitations of indicator	This indicator relies on multiple NSDUH questionnaire items. It relies on self-report and has a long recall period. Classification of respondents does not come from a clinician's diagnosis. The indicator captures information on the U.S. civilian, non-institutional population aged 12 or older. NSDUH excludes homeless people who do not use shelters, military personnel on active duty, and residents of institutional group quarters, such as jails and hospitals.
Limitations of data resource	Significant time can elapse before data are available for inclusion in a surveillance summary, since reported data rely on a two-year rolling average, data reflect the respondent's experience for a full 12 months before the interview date, and it can be 6 to 12 months after the date of the last interview before the data are cleaned and analyzed. The data reported by SAMHSA are derived from a long-running annual face-to-face household survey with high response rates and extensive quality checking, and current data are directly comparable to those from 2002 and later and appear consistent with those of other surveys of the same topics. As with any sample survey, issues with data item validity and over- or under-estimation of parameters of interest may arise. Small numbers of subjects in sub-state areas limit ability to make sub-state area estimates, especially in less populous states.
Related indicators or recommendations	MHMD-4.1: Reduce the proportion of adolescents aged 12 to 17 who experience major depressive episodes. MHMD-4.2: Reduce the proportion of adults aged 18 and older who experience major depressive episodes. See http://www.healthypeople.gov/2020/topics-objectives/topic/mental-health-and-mental-disorders/objectives.

References

1. Substance Abuse and Mental Health Services Administration (2017). *Key substance use and mental health indicators in the United States: Results from the 2016 National Survey on Drug Use and Health* (HHS Publication No. SMA 17-5044, NSDUH Series H-52). Rockville, MD: Center for Behavioral Health Statistics and Quality, Substance Abuse and Mental Health Services Administration. Retrieved from https://www.samhsa.gov/data. Accessed October 16, 2017.
2. Substance Abuse and Mental Health Services Administration. 2011-2012 National Surveys on Drug Use and Health: Guide to State Tables and Summary of Small Area Estimation Methodology. Available at http://www.samhsa.gov/data/sites/default/files/NSDUHStateEst2011-2012/Methodology/Web/NSDUHsaeMethodology2012.htm. Accessed October 16, 2017.
3. Substance Abuse and Mental Health Services Administration. 2012-2013 National Survey on Drug Use and Health: Model-Based Prevalence Estimates (50 States and the District of Columbia), Table 26. Available at http://www.samhsa.gov/data/sites/default/files/NSDUHStateEst2012-2013-p1/Tables/NSDUHsaePercents2013.pdf. Accessed October 16, 2017.

Indicator Group: Mental Health

Indicator 16. Any adult mental illness in the past year

Demographic Group	All persons aged ≥18 years.
Numerator	All persons aged ≥18 years who answered question items positively, meeting DSM-IV inclusion criteria, for any mental illness (AMI) in the past year. Adults with AMI were defined as having any mental, behavioral, or emotional disorder in the past year that met DSM-IV criteria (excluding developmental disorders and SUDs) (1).
Denominator	All persons aged ≥18 years (excluding those who refused to answer, had missing answers, or answered "don't know/not sure").
Measure of frequency to be reported	Two year prevalence with 95% confidence intervals. States should combine two survey years (example 2013-2014, 2014-2015) to provide stable state-level estimates. State estimates provided by the Substance Abuse and Mental Health Services Administration are developed using a small area estimation procedure in which state-level NSDUH data from 2 survey years are combined with local-area county and census block group/tract-level data from the state. This model-based methodology provides more precise estimates of state-level substance use than those based solely on the sample, particularly for smaller states (2).
Time period for case definition	Past year.
Data resources	National Survey of Drug Use and Health (NSDUH). State-level NSDUH estimates are available at: http://www.samhsa.gov/data/population-data-nsduh/reports?tab=33 (Note: Access link with specific year of interest [e.g., 2014-2015 NSDUH State-specific Tables]) and http://pdas.samhsa.gov/saes/state.
Background	In 2012-2013, 18.53% of U.S. adults aged 18 and over met the criterion of any mental illness in the last year, according to the NSDUH. The percentage reporting any mental illness by state ranged from 15.62% to 22.31% (3).

Significance	To the extent that states and other jurisdictions can assure that effective, evidence-based interventions are put in place to prevent mental illness and its consequences, and can assure access to treatment, the value of this indicator can be expected to fall.
Limitations of indicator	This indicator relies on multiple NSDUH questionnaire items. It relies on self-report and has a long recall period. Classification of respondents does not come from a clinician's diagnosis. The indicator captures information on the U.S. civilian, non-institutional population aged 12 or older. NSDUH excludes homeless people who do not use shelters, military personnel on active duty, and residents of institutional group quarters, such as jails and hospitals.
Limitations of data resource	Significant time can elapse before data are available for inclusion in a surveillance summary, since reported data rely on a two-year rolling average, data reflect the respondent's experience for a full 12 months before the interview date, and it can be 6 to 12 months after the date of the last interview before the data are cleaned and analyzed. The data reported by SAMHSA are derived from a long-running annual face-to-face household survey with high response rates and extensive quality checking, and current data are directly comparable to those from 2002 and later and appear consistent with those of other surveys on the same topics. As with any sample survey, issues with data item validity and over- or under-estimation of parameters of interest may arise. Small numbers of subjects in sub-state areas limit ability, to make sub-state area or race/ethnicity estimates, especially in less populous states.
Related indicators and recommendations	MHMD-4.2: Reduce the proportion of adults aged 18 and older who experience major depressive episodes. See http://www.healthypeople.gov/2020/topics-objectives/topic/mental-health-and-mental-disorders/objectives.
Note	None.

References

1. Substance Abuse and Mental Health Services Administration (2017). *Key substance use and mental health indicators in the United States: Results from the 2016 National Survey on Drug Use and Health* (HHS Publication No. SMA 17-5044, NSDUH Series H-52). Rockville, MD: Center for Behavioral Health Statistics and Quality, Substance Abuse and Mental Health Services Administration. Retrieved from https://www.samhsa.gov/data. Accessed October 16, 2017.
2. Substance Abuse and Mental Health Services Administration. 2011-2012 National Surveys on Drug Use and Health: Guide to State Tables and Summary of Small Area Estimation Methodology. Available at http://www.samhsa.gov/data/sites/default/files/NSDUHStateEst2011-2012/Methodology/Web/NSDUHsaeMethodology2012.htm. Accessed October 16, 2017.
3. Substance Abuse and Mental Health Services Administration. 2012-2013 National Survey on Drug Use and Health: Model-Based Prevalence Estimates (50 States and the District of Columbia), Table 24. Available at http://www.samhsa.gov/data/sites/default/files/NSDUHStateEst2012-2013-p1/Tables/NSDUHsaePercents2013.pdf. Accessed October 16, 2017.

Indicator Group: Mental Health

Indicator 17. Serious adult mental illness in the past year

Demographic group	All persons aged ≥18 years.
Numerator	All persons aged ≥18 years who answered question items positively, meeting DSM-IV inclusion criteria, for serious mental illness (SMI) in the past year. Adults with AMI were defined as having SMI if they had any mental, behavioral, or emotional disorder that substantially interfered with or limited one or more major life activities in the past year that met DSM-IV criteria (excluding developmental disorders and SUDs) (1).
Denominator	All persons aged ≥18 years (excluding those who refused to answer, had missing answers, or answered "don't know/not sure").
Measure of frequency to be reported	Two year prevalence with 95% confidence intervals. States should combine two survey years (example 2013-2014, 2014-2015) to provide stable state-level estimates. State estimates provided by the Substance Abuse and Mental Health Services Administration are developed using a small area estimation procedure in which state-level NSDUH data from 2 survey years are combined with local-area county and census block group/tract-level data from the state. This model-based methodology provides more precise estimates of state-level substance use than those based solely on the sample, particularly for smaller states (2).
Time period for case definition	Past year.
Data resources	National Survey of Drug Use and Health (NSDUH). State-level NSDUH estimates are available at: http://www.samhsa.gov/data/population-data-nsduh/reports?tab=33 (Note: Access link with specific year of interest [e.g., 2014-2015 NSDUH State-specific Tables]) and http://pdas.samhsa.gov/saes/state.
Background	In 2012-2013, 4.14% of U.S. adults aged 18 and over met the criterion of a serious mental illness in the last year, according to the NSDUH. The percentage of such persons reporting serious mental illness by state ranged from 3.26% to 5.48%.

Significance	To the extent that states and other jurisdictions implement evidence-based interventions to prevent serious mental illness and its consequences and assure access to treatment, the value of this indicator can be expected to fall.
Limitations of indicator	This indicator relies on multiple NSDUH questionnaire items. It relies on self-report and has a long recall period. Classification of respondents does not come from a clinician's diagnosis. The indicator captures information on the U.S. civilian, non-institutional population aged 12 or older. NSDUH excludes homeless people who do not use shelters, military personnel on active duty, and residents of institutional group quarters, such as jails and hospitals.
Limitations of data resource	Significant time can elapse before data are available for inclusion in a surveillance summary, since reported data rely on a two-year rolling average, data reflect the respondent's experience for a full 12 months before the interview date, and it can be 6 to 12 months after the date of the last interview before the data are cleaned and analyzed. The data reported by SAMHSA are derived from a long-running annual face- to-face household survey with high response rates and extensive quality checking, and current data are directly comparable to those from 2002 and later and appear consistent with those of other surveys of the same topics. As with any sample survey, issues with data item validity and over- or under-estimation of parameters of interest may arise. Small numbers of subjects in sub-state areas limit ability, to make sub-state area or race/ethnicity estimates, especially in less populous states.
Related indicator or recommendation	MHMD-4.2: Reduce the proportion of adults aged 18 and older who experience major depressive episodes. See http://www.healthypeople.gov/2020/topics-objectives/topic/mental-health-and-mental-disorders/objectives.
Note	None.

References

1. Substance Abuse and Mental Health Services Administration (2017). *Key substance use and mental health indicators in the United States: Results from the 2016 National Survey on Drug Use and Health* (HHS Publication No. SMA 17-5044, NSDUH Series H-52). Rockville, MD: Center for Behavioral Health Statistics and Quality, Substance Abuse and Mental Health Services Administration. Retrieved from https://www.samhsa.gov/data Accessed October 16, 2017.
2. Substance Abuse and Mental Health Services Administration. 2011-2012 National Surveys on Drug Use and Health: Guide to State Tables and Summary of Small Area Estimation Methodology. Available at http://www.samhsa.gov/data/sites/default/files/NSDUHStateEst2011-2012/Methodology/Web/NSDUHsaeMethodology2012.htm. Accessed October 16, 2017.
3. Substance Abuse and Mental Health Services Administration. 2012-2013 National Survey on Drug Use and Health: Model-Based Prevalence Estimates (50 States and the District of Columbia), Table 23. Available at http://www.samhsa.gov/data/sites/default/files/NSDUHStateEst2012-2013-p1/Tables/NSDUHsaePercents2013.pdf. Accessed October 16, 2017.

Indicator Group: Mental Health

Indicator 18. Frequent mental distress (≥14 days out of 30)

Demographic group	Adults aged ≥18 years.
Numerator	Adults aged ≥18 years who reported that their mental health was not good for ≥14 days in the past 30 days.
Denominator	Adults aged ≥18 years who report any number of days, including zero, when their mental health was not good in the past 30 days (excluding those who refused to answer, had missing answers, or answered "don't know/not sure").
Measure of frequency to be reported	Annual prevalence: crude, with 95% confidence intervals (1).
Time period for case definition	Past 30 days.
Data resources	Behavioral Risk Factor Surveillance System (BRFSS). State-level data are available at the CDC BRFSS website: https://www.cdc.gov/brfss/brfssprevalence/index.html
Background	Frequent mental distress is correlated with mental illness, such as clinically significant depression and anxiety. Mental illness can cause significant morbidity and affects healthcare costs. In 2014, the percentage of adults with frequent days of mental distress (days when mental health was not good) in the past 30 days ranged from 8.0% to 15.7% among the states and Washington, D.C. The median value among the states was 11.0% (2).
Significance	Poor mental health interferes with social functioning, is associated with adverse health behaviors, and should be monitored as an overall indicator of chronic disease. Percent of population with frequent mental distress is a good summary measure of population mental health. Evidence-based public health services, mental health services, and other preventive interventions could be expected to reduce the percentage of the population with frequent mental distress.
Limitations of indicator	There is limited validation of the 14-day frequent mental distress method of analyzing responses to this questionnaire item.

Limitations of data resource	As with all self-reported sample surveys, BRFSS data might be subject to systematic error resulting from noncoverage (e.g., on college campuses, residential institutions or military bases), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement (e.g., social desirability or recall bias). To address some of these potential concerns, BRFSS began including cellular telephone–only users in its 2011 data collection. Because of changes in sampling and weighting methods, 2011 is a new baseline for BRFSS, and comparisons with previous years' data are inappropriate. As a phone-based survey it relies on self-report.
Related indicator or recommendation	MHMD-4.2: Reduce the proportion of adults aged 18 and older who experience major depressive episodes. MDHD-9: Increase the proportion of adults with mental health disorders who receive treatment. See http://www.healthypeople.gov/2020/topics-objectives/topic/mental-health-and-mental-disorders/objectives
Note	None.

Reference

1. Klein RJ, Schoenborn CA. Age adjustment using the 2000 projected U.S. population. Healthy People 2010 Statistical Notes, No. 20. Hyattsville, MD: US Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Health Statistics; 2001. Available at http://www.cdc.gov/nchs/data/statnt/statnt20.pdf Accessed October 16, 2017.
2. Zack M. Tables of prevalence of mental distress on ≥14 out of most recent 30 days, from BRFSS, by state, by year, 2011-2014. Personal communication, December 7, 2015.