

Life Course Indicator: Illicit Drug Use

The Life Course Metrics Project

As MCH programs begin to develop new programming guided by a life course framework, measures are needed to determine the success of their approaches. In response to the need for standardized metrics for the life course approach, AMCHP launched a project designed to identify and promote a set of indicators that can be used to measure progress using the life course approach to improve maternal and child health. This project was funded with support from the [W.K. Kellogg Foundation](#).

Using an RFA process, AMCHP selected seven state teams, Florida, Iowa, Louisiana, Massachusetts, Michigan, Nebraska and North Carolina, to propose, screen, select and develop potential life course indicators across four domains: Capacity, Outcomes, Services, and Risk. The first round of indicators, proposed both by the teams and members of the public included 413 indicators for consideration. The teams distilled the 413 proposed indicators down to 104 indicators that were written up according to three data and five life course criteria for final selection.

In June of 2013, state teams selected 59 indicators for the final set. The indicators were put out for public comment in July 2013, and the final set was released in the Fall of 2013.

Basic Indicator Information

Name of indicator: Illicit Drug Use (LC-30)

Brief description: Prevalence of illicit drug use in the past month among population 12 years and older.

Indicator category: Family Well-being

Indicator domain: Risk / Outcome

Numerator: Reported illicit drug use in the past month for those 12 and older

Denominator: Total population aged 12 and older

Potential modifiers: Race/ethnicity, sex, parental drug use

Data source: National Survey on Drug Use and Health (NSDUH), Substance Abuse and Mental Health Services Administration (SAMHSA)

Notes on calculation: None

Similar measures in other indicator sets: HP 2020 Focus area SA-13, SA-2.4, SA-13.3; Maternal, Infant, and Early Childhood Home Visiting (MIECHV) Benchmark Area Improved Maternal and Newborn Health: Parental use of alcohol, tobacco or illicit drugs

Life Course Criteria

Introduction

Although this indicator includes adults, the focus of the evidence presented here is on adolescence because illicit drug use among adolescents is associated with harmful behaviors that can lead to many negative short- and long-term health outcomes throughout an individual's life span. In addition, substance and illicit drug use in the United States places huge burdens on the health care, justice, education and social service systems [2]. Adolescence is a particularly concerning time for drug use, as the developing brain is more susceptible to addiction and risk-taking, impulsive behavior. Additionally, addictive substances physically alter an adolescent's brain structure and function faster and more intensely than that of an adult [3]. One of the most common, and most dangerous risky adolescent behaviors is using illicit drugs, which includes marijuana/hashish, cocaine (including crack), heroin, hallucinogens, inhalants, or psychotherapeutic medications not taken under a health provider's supervision [4].

According to the National Survey on Drug Use and Health (NSDUH), 2.2 million adolescents between the ages 12-17 were illicit drug users. Recent studies indicate that by the 12th grade, about half of adolescents have abused an illicit drug at least once. Furthermore, 90 percent of Americans with a substance abuse problem started smoking, drinking or using other drugs before age 18 [2,5]. Because of the large impact this indicator has on adolescent health in the short term and into adulthood, improvements in this area and prevention of adolescent illicit drug use have significant potential to improve the life course trajectory and long-term health throughout adulthood.

Implications for equity

Adolescent drug use is a concern in the United States. According to the Child Health USA 2011 report, 10 percent of adolescents aged 12 to 17 years reported illicit drug use in the past month, a significant increase from past years. According to the NSDUH (reporting a two-year average of data from 2010 and 2011), teenagers are the most likely age group to use illicit drugs while pregnant, with an estimated prevalence of 20.9 percent among pregnant teens aged 15 to 17 years. Further, based on NSDUH data from 2011, illicit drug use varies by age, with 3.3 percent of youth aged 12 to 13 years reporting drug use in the past month, compared to 9.2 percent of youth aged 14 to 15 years and 17.2 percent of youth aged 16 to 17 years. On average, the prevalence of illicit drug use among male adolescents is higher than among female adolescents. There is also variation by race/ethnicity, with rates ranging from 5.5 percent among non-Hispanic Asian youth to 14.6 percent among non-Hispanic American Indian/Alaska Native youth. Rates for non-Hispanic White, non-Hispanic Black, and Hispanic youth were 9.6 percent, 10.8 percent, and 11.4 percent, respectively.

Other factors shown to be associated with adolescent illicit drug use include family structure, such as parental educational attainment and parental substance use, and other social and environmental factors that include family and social networks, poverty and peer groups [6].

Public health impact

Illicit drug use during adolescence is a strong predictor of normative use of these substances in adulthood that can influence community and society at large. Further, adolescents who persistently use these substances are observed to have academic difficulties, mental health problems, lower social and peer relations and an increased involvement in criminal behaviors [7]. Use of any illicit drug among adolescents aged 12 to 17 years is associated with increased emergency visits because of unintentional injuries caused by drug overdose or illicit drug use [7].

Engaging in sexual behaviors that increase the risk of contracting sexually transmitted diseases (such as HIV and hepatitis) is associated with adolescent use of substances [8]. Though rates of AIDS diagnoses are currently relatively low among teenagers compared with most other age groups, this could be due to long latency period of the virus where many young adults with AIDS were actually infected with HIV as adolescents [7].

Economic and societal costs of adolescent drug use include an estimated \$14.4 billion in substance-related juvenile justice programs each year. Total costs to federal, state and local governments of substance use (including alcohol) are estimated at \$468 billion per year, and included costs associated with substance use-related accidents, diseases, crimes, child neglect and abuse, unplanned pregnancies, homelessness, unemployment, and other health conditions. The majority of these costs are driven by individuals who began substance use as adolescents [2]. Reducing the illicit drug use among adolescents age 12 to 17 years will reduce the burden of emergency visits, as well as reduce lifelong social and

economic costs. This includes reducing the familial and societal burden of supporting adolescents who are not self-sufficient, the additional burden on the medical system for long-term and lifelong care of such individuals, and the financial loss to the community due to crime connected with substance abuse [7].

Leverage or realign resources

Family-centered interventions are critical for improvement in this indicator. Well-integrated programs that address entire families and not only parents or adolescents alone are more successful in improving this indicator [9, 10]. Other factors in the social environment like peer pressure and community norms need to be addressed through community programs [9, 11]. Media campaigns can be successful to bring about social changes, and policy and regulations have been successful in restricting access to alcohol, tobacco, or other drugs. For example, the Partnership for a Drug-Free America's Above the Influence campaign has shown evidence in reducing initiation and use of illicit drugs in adolescents. Effectiveness of such campaigns is increased when combined with school-based prevention programs. School-based programs that focus on increasing protective factors, increasing awareness and education, and fostering life skills, have shown significant effectiveness in reducing drug use among adolescents [15-17]. Similar programs that occur outside the classroom, such as in a community or after-school settings, also show effectiveness in decreasing drug use and promoting protective factors and positive peer-influences, especially when efforts are aligned [9,13]. There are several federal investments in research on understanding drug use and providing resources and grants for states and communities to reduce and prevent illicit drug use, such as through the National Institute on Drug Abuse and Substance Abuse and Mental Health Services Administration. Overall, when all of the interventions targeting changes in individual level behaviors are accompanied by community and policy level changes, greater impact on the use of alcohol or illicit drugs in adolescent is shown [12].

Predict an individual's health and wellness and/or that of their offspring

Adolescent illicit drug use is a leading cause of mortality and morbidity among this age group, particularly because it leads to accidental injuries. The leading causes of death among adolescents are unintentional injuries, homicide and suicide. While there is not exact data on the proportional of these death that are attributable to illicit drug use, research suggests that substance use or abuse is a key contributing factor to each of the leading causes [2]. Among adolescents aged 12 to 17 years, visits to hospital emergency rooms are correlated with the use of illicit drugs and resulting accidental injuries [7]. In addition, drug overdose increases the risk of other serious health problems by damaging the functionality of vital organs like the liver, kidneys and heart, and causing long-term disability in some instances. Adolescents who use illicit drugs are also more likely to engage in high risk sexual behaviors and are more likely to expose themselves to and contract sexually transmitted diseases, such as HIV and hepatitis [14]. While there is not explicit data to link illicit drug use and unintended pregnancies in adolescents, the more addictive substances an adolescent uses throughout his/her life decreases the likelihood of reporting condom use, and substance use is correlated with "doing more" sexual activity under the influence compared to planned activity while sober [2,14]. Further, adolescents who persistently use these substances are observed to have academic difficulties, mental health problems, poorer social and peer relations and increased involvement in criminal behaviors. A recent report stated that up to 67 percent of youth involved in the juvenile justice system have a substance use problem [9]. Thus, this indicator predicts the individual health of adolescents in the short and long term [12, 13].

Data Criteria

Data availability

Data on adolescents using any illicit drugs during the past 30 days is captured through the administration of the NSDUH funded by SAMHSA, an agency of the U.S. Department of Health and Human Services (HHS). The NSDUH is a nationwide survey administered annually since 1971 and involves interviews with randomly selected individuals aged 12 and older across all 50 states in the United States and District of Columbia.

The indicator is based on whether the survey respondent used any illicit drug "within the past 30 days" as one of the response options. The NSDUH obtains information on nine categories of illicit drug use: marijuana, cocaine, heroin, hallucinogens, and inhalants, as well as the nonmedical use of prescription-type pain relievers, tranquilizers, stimulants, and sedatives. The NSDUH uses multistage area probability sampling for each of the 50 states and the District of Columbia and oversamples youth and young adults who represent three major age groups of 12 to 17 years, 18 to 25 years, and 26 years or older. The NSDUH data is available for download through the SAMHSA Substance Abuse and

Mental Health Data Archive (SAMHDA) (samhsa.gov/data/) and is readily available to any MCH program in the country. This website provides links to the public-use data files as well as restricted-use data files that list information on use of some illicit drugs. The SAMHDA website also allows users to generate quick tables for the target age group of 12-17 years and allows for required variable searches across the different years of data.

Data quality

A reliability study was conducted for NSDUH in 2006 by the Office of Applied Studies of SAMHSA, based on a directive of the Office of Management and Budget to evaluate the quality of federally funded surveys. The reliability study was conducted on a subsample of the main study by administering a second interview in addition to the interview conducted for the main study. A total of 3,136 interviews were completed and they were done five to 15 days after the initial interview for the main study. The interview for the reliability study followed the same procedure for data collection as the main study. The study found perfect reliability for indicators that measure lifetime substance use, as well as substantial reliability for substance dependence and abuse indicators.

NSDUH is the primary source of statistical information on the use of illegal drugs by the U.S. population. Prior to 2002, the NSDUH was called the National Household Survey on Drug Abuse (NHSDA) with the first round of surveys being conducted in early 1970s with 3,000 respondents. As the data collected through this survey gained importance, the Office of National Drug Control Policy advocated for expansion of the sample in the early 1980s for tracking data about illicit drug use. Also, a series of studies were conducted to evaluate the survey methods and questionnaire that lead to the redesign of the survey in 1994. Following this redesign of the survey, SAMHSA pursued the use of a newly emerging data collection technology, audio computer-assisted self-interviewing (ACASI), simultaneously with new sampling design to produce state-level estimates from survey responses. Since this initial redesign, there has been routine evaluation of the survey methodology and periodic improvements of the survey design and implementation.

Simplicity of indicator

The indicator is widely used by many federal and state agencies and other organizations interested in the use of tobacco, alcohol, illicit drugs (including non-medical use of prescription drugs) and mental health in the United States. The indicator is used by HHS, Health Resources and Services Administration, and the Maternal and Child Health Bureau for their Child Health USA report [1]. The data for the indicator are readily available, and the numerator and denominator for this indicator are simple. Adolescent use of illicit drugs is a common focus area among professionals and communities and one that community members can understand.

Numerous government, national, and community groups use this indicator for advocacy or improving public health programs. The White House Office of National Drug Control Policy uses NSDUH data to track progress toward goals in the National Drug Control Strategy. SAMHSA prepares statistical reports on substance use patterns and trends and uses the data to identify populations and geographic areas with particular substance abuse problems so federal resources can be used efficiently for prevention and treatment programs. The Partnership for a Drug-Free America uses NSDUH data to design media advertising campaigns for the prevention of substance use and abuse. Based on the trends and patterns of substance use evident in the data, the National Institute on Drug Abuse develops research programs targeted toward populations and types of drug use problems where the need is greatest. University-based researchers use NSDUH data to conduct research on important substance use issues, such as the risk and protective factors associated with substance use, personal and societal consequences of substance use, and the impact of policy decisions for dealing with the substance abuse problem. Substance abuse agencies at the state and local levels use NSDUH data to assess the potential need for treatment services and to design programs that fit the needs of populations served. State and local health departments use NSDUH data to assess area substance use problems and to develop appropriate funding strategies and prevention measures. The U.S. Department of Education uses the data to inform drug use prevention and education programs and provide educational materials for teachers and administrators. The U.S. Department of Transportation uses NSDUH data on driving after alcohol and illicit drug use to develop prevention programs and materials on impaired driving.

References

[1] U.S. Department of Health and Human Services, Health Resources and Services Administration, Maternal and Child Health Bureau. *Child Health USA 2011*. Rockville, Maryland: U.S. Department of Health and Human Services, 2011.

- [2] Columbia University, National Center on Addiction and Substance Abuse at Columbia University. (2011). *Adolescent Substance Use: America's #1 Public Health Problem*. New York, NY. Columbia University. Available from: <http://www.casacolumbia.org/addiction-research/reports/adolescent-substance-use>.
- [3] Casey, B. J., Jones, R. M., & Hare, T. A. (2008). *The adolescent brain*. Annals of the New York Academy of Science, 1124, 111-126.
- [4] Murphey, D., Barry, M., Vaughn, B., Guzman, L., Terzian, M. (2013) *Adolescent Health Highlight: Use of Illicit Drugs*. Child Trends. Available from: <http://www.childtrends.org/wp-content/uploads/2013/09/Illicit-drug-use-Highlight-9.13.pdf>.
- [5] Johnston, L. D., O'Malley, P. M., Miech, R. A., Bachman, J. G., & Schulenberg, J. E. (2014). *Monitoring the Future national survey results on drug use: 1975-2013: Overview of key findings on adolescent drug use*. Ann Arbor: Institute for Social Research, The University of Michigan.
- [6] Galea, S., A. Nandi, et al. (2004). *The Social Epidemiology of Substance Use*. Epidemiologic Reviews 26(1): 36-52.
- [7] Substance Abuse and Mental Health Services Administration, Center for Behavioral Health Statistics and Quality. (July 2, 2012). *The DAWN Report: Highlights of the 2010 Drug Abuse Warning Network (DAWN) Findings on Drug-Related Emergency Department Visits*. Rockville, MD.
- [8] Gerbi, G. B., C. G. Davis, et al. (2011). *The association between substance use and risky sexual behaviors among middle school children*. Journal of Substance Use 16(5): 339-347.
- [9] Adolescent Substance Abuse: A Public Health Priority. *An evidence-based, comprehensive, and integrative approach. Position paper on Adolescent Drug Policy*. Aug 2012.
- [10] Hill, N. (2008). Adolescent Substance Use Prevention Interventions Outside of Classroom Settings. Child Adolesc Soc Work J (2008) 25:451–467.
- [11] Romer, D. A Biosocial-Affect Model of Adolescent Sensation Seeking: The Role of Affect Evaluation and Peer-Group Influence in Adolescent Drug Use. Prev Sci (2007) 8:89–101.
- [12] Spoth R., Trudeau L., Gyll M., Chungyeol Shin, and Cleve Redmond (2009). Universal Intervention Effects on Substance Use Among Young Adults Mediated by Delayed Adolescent Substance Initiation. Journal of Consulting and Clinical Psychology 2009, Vol. 77, No. 4, 620–632.
- [13] Feinstein, E., Richter, L., and Foster, S. (2012) Addressing the Critical Health Problem of Adolescent Substance Use Through Health Care, Research, and Public Policy. Journal of Adolescent Health 50 431–436.
- [14] Kaiser Family Foundation. (2002). *Substance use and risky sexual behavior*. Washington, DC: Kaiser Family Foundation. Available from: <http://kaiserfamilyfoundation.files.wordpress.com/2002/01/3214.pdf>.
- [15] Slater M., Kelly K., Lawrence F., Stanley L., Comello ML., Assessing Media Campaigns Linking Marijuana None-use with Autonomy and Aspirations: "Be Under Your Own Influence" and ONDCP's "Above the Influence." Prevention Science. 2011;12(1):12-22.
- [16] Longshore D., Ghosh-Dastidar B., Ellickson P. National Youth-Anti-Drug Media Campaign and school-based drug prevention: Evidence for a synergistic effect in ALERT plus. Addictive Behaviors. 2006;31(3):496-508.
- [17] Inman D., van Bakergem K., LaRosa A., Garr D. Evidence-based Health Promotion Programs for School and Communities. American Journal of Preventive Medicine. 2011;40(2): 207-219.

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