

Life Course Indicator: Early Sexual Intercourse

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: Early Sexual Intercourse (LC-50)

Brief description: Initiation of sexual intercourse before age 13 years.

Indicator category: Reproductive life experiences

Indicator domain: Risk/Outcome

Numerator: Number of ninth through 12th grade students who report initiating sexual intercourse before age 13 years.

Denominator: Number of ninth through 12th grade students

Potential modifiers: Sex, race/ethnicity, grade, geographic location - state, local (large urban school districts), U.S. territory, and other populations (Navajo and Nez Perce Tribal Governments)

Data source: Youth Risk Behavior Surveillance System (YRBSS)

Notes on calculation: Analysts who use the raw datasets should apply the appropriate survey weights to generate the final estimates.

Similar measures in other indicator sets: HP 2020 Focus area FP-9

Life Course Criteria

Introduction

Transition to sexual activity is an important event in the life stage of adolescence; however, youth in early adolescence have not yet made the physical, mental, and emotional developments necessary to make sensible decisions surrounding sexual activity (26). According to YRBS 2013 data, 5.6 percent of United States ninth through 12th graders initiated sexual intercourse prior to age 13. Early sexual debut has multiple short- and long-term physical and mental health implications. Adolescents who start having sex before age 13 have an increased likelihood for risky sexual behaviors and associated outcomes such as sexually transmitted infections (STIs) (22,24). In addition to sexual-related outcomes, early sexual intercourse also is associated with other unhealthy behaviors including alcohol use, delinquency and violence (25). Early sexual intercourse also affects intergenerational health through an association with unintended pregnancies. Children who are born to adolescent mothers have a higher risk for a number of negative physical and emotional health outcomes (14). These associations suggest an opportunity for prevention of important negative health outcomes, including teen pregnancy, sexually transmitted infections (STIs), and problem alcohol use, in adolescents and young adults. Early sexual education for youth is important, however, successful interventions to delay age of sexual intercourse also need to incorporate positive youth development to empower them to make informed decisions about sexual activity (25).

Implications for equity

Early sexual intercourse varies by a number of demographic factors. According to 2013 YRBS national data, 8.3 percent of male ninth through 12th graders reported they had sexual intercourse for the first time before age 13 years, compared with 3.1 percent of female respondents (5). Further, there are differences in early sexual debut among racial-ethnic groups; 14 percent of Black adolescents, 9.6 percent of American Indian/Alaskan Native adolescents, and 6.4 percent of Hispanic adolescents reported they had sexual intercourse for the first time before age 13, compared with 3.3 percent of White adolescents and an overall prevalence of 6.2 percent. The YRBS data are supported by numerous studies that found both boys and Black adolescents are at an increased risk for early sexual intercourse (6, 7, 8).

Beyond sex and race/ethnicity, household income also is a risk factor associated with early sexual intercourse. Compared with adolescents living in more affluent households, those living in low-income households are at an increased risk of engaging in early sexual intercourse. When comparing samples of low-income adolescents in the Three-City Study, Jordahl and Lohman found that low-income adolescent girls report a nearly 4 percent increase in early sexual debut when compared with the national average, while low-income adolescent boys reported rates of early sexual debut more than double that of the national average for boys (32 percent vs 15 percent) (9).

Public health impact

When comparing the results from the biennially administered national YRBSS, the percent of ninth through 12th grade respondents who report having sexual intercourse before age 13 years decreased from 1991 to 2005 (10). However, since 2005, this change has stagnated and results from the YRBSS have shown no change in this indicator (10). Early sexual intercourse initiation by youth under 13 years of age has a range of negative public health consequences. Early initiation of sexual intercourse is associated with increased risky sexual behaviors including unprotected sex and sex with multiple partners, which puts youth at risk for HIV infection and other STIs, unintended pregnancy, and other negative social and psychological outcomes (22, 24). One of the strongest predictors of STIs among adolescents and young adults is early age of sexual intercourse, which indicates an important opportunity to prevent STIs in this population by delaying age of sexual intercourse (23). The relationship between early sexual debut and STIs may be mediated not only by sexual risk behaviors but also by the link between early age of intercourse initiation and multiple other high-risk behaviors (23). Other risk behaviors and adverse outcomes that are linked with early sexual intercourse are alcohol and drug use, depression, suicidal thoughts and rape (25). Compared with peers who delay sex, adolescents with early sexual debut are more likely to use alcohol and exhibit problem use of alcohol (23).

Teenage pregnancies have negative consequences for both the teenage mothers and their offspring. A pregnancy during a woman's teenage years can be a barrier to future education and employment (28). Children of adolescent mothers may also be at higher risk for negative outcomes related to physical, social, and emotional health and well-being, indicating that the public health impact of improvement in this indicator could move beyond the individual engaging/abstaining in early sexual intercourse and extend into the next generation of children (14).

While early sexual education for adolescents can help to impact this indicator (9), social and family environments of youth also need to be addressed (27, 9). Family factors such as maternal-child relationships, living in a single parent home, and low parental education attainment are associated with early sexual debut (27). Creating stable family environments and decreasing other risk behaviors in adolescents such as drug and alcohol use to increase good judgment and decision making in adolescents also is important to delaying age of sexual intercourse initiation (9, 27).

Leverage or realign resources

From a holistic, positive youth development perspective, decreasing early sexual intercourse requires attention to factors broader than those related to sexual activity. The more developmental assets youth demonstrate, the less likely they are to engage in sexual intercourse. Developmental assets are supports, strengths, and non-cognitive skills they experience in themselves, their families, their schools, and their communities (21)

There is national support for both abstinence only and comprehensive sex education that target higher risk youth with the goal of encouraging abstinence and/or educating youth about behaviors that protect against STIs and unplanned pregnancy (3, 4). Where delaying the age of sexual debut beyond early adolescence is tied to the issue of teen pregnancy, there are multiple national teen pregnancy initiatives to engage as partners. The National Campaign to Prevent Teen and Unplanned Pregnancy aims to achieve a 20 percent reduction in the national teen pregnancy rate (28). The National Campaign engages teens directly and has had more than three million young people participate in their online National Day to Prevent Teen Pregnancy (28). They also provide a series of sexual education resources on The National Campaign website (28).

Teen pregnancy also is a Centers for Disease Control and Prevention (CDC) winnable battle and one of the key actions outlined to reduce teen pregnancy is “promote the delay of sexual initiation through evidence-based programs and social norm changes (29).” Delaying sexual initiation through social norm changes acknowledges the need to not just educate adolescents about sexual intercourse but also create environments in which adolescents are able to make healthy sexual decisions. Lastly, opportunity to impact this indicator exists within the *Patient Protection and Affordable Care Act of 2010*, which amended Title V of the Social Security Act to include:

- Authorization and funding of the Title V State Abstinence Education Grant Program (AEGP), which provides funding to the states and territories to promote abstinence education to higher risk youth (3)
- The Personal Responsibility Education Program (PREP), which supports state agencies in providing both abstinence and contraception education (4)

Research on the disproportionate impact of this indicator on certain populations illustrates the need for timely, well-tailored, and wide-ranging resources, policies, and education to combat early sexual intercourse and associated negative effects on health (9).

Higher rates of early sexual intercourse among lower income populations suggest that in addition to cultivating developmental assets, sexual education needs to be introduced at earlier ages, especially among higher-risk youth (9). In order to delay age of sexual debut, sexual education programming is needed by the fifth or sixth grade (31). A number of partners, including pediatricians, community leaders, schools and parents can be engaged to create sexual education programming for youth at earlier ages. As gender differences in rates of early sexual intercourse are clear, further tailoring of programs to appeal to and connect with higher risk populations is important.

Sexual education can be a sensitive topic in some communities. As noted above, another avenue for delaying onset of sexual intercourse in adolescents is through positive youth development. A similar tactic is cited by the CDC to assist in youth HIV prevention through increasing skills and assets of youth to help them avoid health risks such as sexual risk behaviors (30). Positive youth development is advantageous because it also has the ability to address more than one health risk behavior at one time (30). Programs can be run through schools or as extracurricular activities and teach youth problem solving skills, how to communicate with others, and help develop positive family and community relationships (30). Increasing other protective factors against early sexual debut in youth and families also is an important consideration. Maternal education is a notable protective factor against early sexual activity, and it is possible that an increase in social capital and education of young women could potentially decrease the likelihood of early sexual activity among the adolescent children of these women (9). Further, CDC research has shown the clear cost benefit of addressing

early sexual initiation and adolescent sexual activity; for every dollar spent in evidence-based school-based HIV, STI, and pregnancy prevention programs, \$2.65 was saved in medical costs and lost productivity (15).

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

Early initiation of sexual intercourse is associated with a number of behaviors risky to health and wellness including decreased likelihood of regular condom use during intercourse, an overall higher lifetime number of sexual partners, and increased substance abuse (11, 12, 13). Additionally, early initiation puts a person at higher risk for diseases and conditions such as STIs, adolescent pregnancy, poorer self-reports of health, and cervical neoplasia in females (11, 12, 13). Earlier sexual intercourse may be associated with poorer self-report of life satisfaction, demonstrating that the effects of this early sexual intercourse in adolescence can ripple into multiple realms of health and well-being (18).

It is critical to recognize the impact of early sexual intercourse beyond that on the health of the individual. Children of adolescent mothers are at a higher risk for negative physical, emotional and social outcomes (14). These negative outcomes include higher risk of substance abuse in adolescence, joining gangs, running away from home, being less prepared for kindergarten, dropping out of school, becoming incarcerated at some point in their lives, and to become pregnant in adolescence themselves (14, 29).

Data Criteria

Data availability

The YRBSS monitors priority health-risk behaviors and the prevalence of obesity and asthma among youth and young adults. The YRBSS includes a national school-based survey conducted by the CDC, state, territorial, and local education and health agencies and tribal governments. YRBSS monitors six categories of priority health-risk behaviors among youth and young adults, including behaviors that contribute to unintentional injuries and violence; sexual behaviors that contribute to unintended pregnancy and sexually transmitted diseases, including HIV infection; alcohol and other drug use; tobacco use; unhealthy dietary behaviors; and inadequate physical activity. In addition, YRBSS monitors the prevalence of obesity and asthma.

The YRBSS is administered every other year (odd years), generally in the spring semester in schools via a pencil and paper mode. The YRBSS survey contains no skip patterns. In the even-numbered years, CDC leads a process of examining and revising the questionnaire, using both expert opinion and votes from the YRBSS coordinators in states. The final result is a standard questionnaire that can be modified by states to meet their needs, but modifications must be within certain parameters.: 1) the modified questionnaire must contain at least two-thirds of the original standard questionnaire, 2) questions that are added are limited to eight mutually exclusive response options, 3) the questionnaire may not have skip patterns or fill in the blanks, and 4) the questionnaire may not exceed 99 questions, and the state must retain the height and weight questions. The 2011 YRBSS included a national school-based survey conducted by CDC and 47 state surveys, six territory surveys, two tribal government surveys, and 22 local surveys conducted among students in grades nine through 12 during October 2010 to February 2012. Data collected by CDC represent both public and private schools with students in grades nine through 12; data collected by states, territories, tribes, and localities represents primarily public school students.

Data on early sexual intercourse are currently collected every two years through the YRBSS. The YRBSS surveys a sample of high school, and in some cases middle school, students that is representative at the national, state, tribal, and large urban school district levels. Youth Risk Behavior Surveys (YRBS) have been conducted biennially since 1991. In 2011, 47 states and the District of Columbia conducted the YRBS, as did six United States territories, two tribal governments, and 21 other large urban school districts (1). As three states (Minnesota, Oregon and Washington) did not conduct surveys, state-level data are not available for all 50 states.

Early sexual intercourse before age 13 is included on the national, state, territorial, tribal and large urban school district versions of the survey. The formula for measurement is the same on all surveys for this indicator. The numerator is calculated from data reported by ninth to 12th grade respondents on whether or not they have had sexual intercourse before the age of 13 years.

The CDC creates reports for each participating site. Further, CDC maintains a publicly accessible website with detailed information about the YRBSS and results, including “Youth Online,” a data-query application that allows users to view detailed survey results. YRBS data available on “Youth Online” includes all weighted national, states, territorial, tribal and local results from 1991-2011. Also available through the CDC website are data files and documentation for all national surveys conducted since 1991, which allows individuals to conduct their own analysis of national data. YRBSS data tables and fact sheets are available on apps.nccd.cdc.gov/youthonline/App/Default.aspx.

Data quality

From the available YRBSS documentation, the 2011 national YRBS school response rate was 81 percent; the student response rate was 87 percent; and the overall response rate was 71 percent. Comparisons between estimates for states and districts from the national data collection effort and the surveys collected by states, territories, tribes, and localities can be found on the CDC YRBSS website. Each jurisdiction reached a minimum site response rate of 60 percent and therefore had weighted data for that year. Weighted data allows a jurisdiction to make statements from the data that generalize to all high school students in that jurisdiction.

Studies by CDC and others indicate that data about risk behaviors can be gathered as credibly from adolescents as from adults. YRBSS performs internal reliability checks to help identify the small percentage of students who falsify their answers. To obtain truthful answers, students must perceive the survey as important and know procedures have been developed to protect their privacy and allow for anonymous participation.

A test-retest study of the 1999 version of the questionnaire (1) found that 47 percent of items had at least “substantial” reliability, with kappa statistics of agreement of 61 percent or greater, and 93 percent of items had at least “moderate” reliability, with kappas of 41 percent or greater. The study found no differences in reliability by gender, grade, or race/ethnicity. The study found that items related to tobacco use, alcohol and other drug use, and sexual behavior had the highest reliability. By comparison, items asking about dietary behaviors, physical activity, and other health-related topics were less reliable. A study of mode and setting using the YRBSS questions (20) determined that students were more likely to report risk behaviors when they took the survey at school compared with taking the survey at home.

Simplicity of indicator

The level of complexity in calculating and explaining this indicator is low. The denominator captures how many youth responded ‘yes’ to ever having sexual intercourse on the YRBS. The numerator captures a segment of those who reported ever having sexual intercourse who also report ever having sexual intercourse before age 13 years. While this is a fairly simple measure, it relies on self-report, which can result in misclassification problems (2). Early sexual intercourse is a measure that can be readily and simply explained, and addressing this issue has garnered much attention in programming and policy.

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To learn more, please contact Caroline Stampfel, Senior Epidemiologist at cstampfel@amchp.org or (202) 775-0436.

Association of Maternal & Child Health Programs

2030 M Street, NW, Suite 350

Washington, DC 20036

(202) 775-0436 ▪ www.amchp.org

