Life Course Indicator: Obesity

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: Obesity (LC-32 A/B)

Brief description: Percent of children and percent of adults who are currently overweight or obese

Indicator category: Family Well-being

Indicator domain: Risk/Outcome

Numerator:

a. Number of children 10-17 who are currently overweight or obese, based on Body Mass Index for age (BMI-for-age):overweight OR obese (85th percentile or above)
b. Number of adults who are currently overweight or obese based on Body Mass Index (BMI): overweight OR obese (with a BMI of 25 or above)

Denominator:

a. Total number of children 10-17 with height and weight data
b. Total number of adults with height and weight data

Potential modifiers: Age, race/ethnicity, gender, education level, income level

Data source:

a. For children: National Survey of Children's Health (NSCH)
b. For adults: Behavioral Risk Factor Surveillance System (BRFSS)

Notes on calculation: The concept of obesity was considered to be important for tracking across the life span. To operationalize this, the indicator proposed is actually broken into separate indicators by age because different age groups are assessed using different data sources. These are NOT intended to be summed, averaged, or combined in any other way. They should be treated as separate indicators.

BMI for age is pre-calculated by the National Survey of Children's Health and is available as a four-category variable called BMICLASS

in the 2011/2012 dataset. Categories three and four can be combined to obtain the percent of children 10-17 in the 85th percentile or above. BMI for adults pre-calculated by the Behavioral Risk Factor Surveillance System and is available both as a four-category variable and binary variable (SAS variable names_BMI5CAT and _RFBMI5) for the 2012 dataset. Analysts who use the raw datasets should apply the appropriate survey weights to generate the final estimates.

Similar measures in other indicator sets:

a. HP 2020 Focus area NWS-10; CDC Winnable Battle (Reduce the proportion of children and adolescents age 2-19 who are obese by 5 percent); Title V Performance Measure #14; Chronic Disease Indicator
b. Preconception Health Indicator F-2; HP 2020 Focus area NWS-9 (Leading Health Indicator); Title V Performance Measure #14; Chronic Disease Indicators; United Health Rankings Core Measure

Life Course Criteria

Introduction

Over the past 30 years, obesity prevalence has more than doubled among children and adults and tripled among adolescents.[1,2] The alarming rates of obesity cause concern because of the associated health consequences. Obesity increases the risk of many chronic diseases and conditions including diabetes, heart disease, hypertension, depression, stroke, arthritis, and some cancers.[3] Overweight children are likely to become overweight or obese adults.[4,5,6] A range of complex economic, environmental, social and cultural factors all have a part to play in the rise of obesity as a health problem, and the differential exposure to these factors by different populations has contributed to disparities in overweight and obesity by socioeconomic status, racial/ethnic origins, geographic location, gender and having a physical or mental disability.

Obesity in childhood, particularly in adolescence, is a key predictor for obesity in adulthood. Whitaker et al. found that the risk of adult obesity was greater in both obese and non-obese children if at least one parent was overweight. This effect was most pronounced in children that were <10 years old; over the age of 10 years, the child's own overweight/obesity status was a better predictor than having an obese parent.[31] Improvements in this indicator have significant potential to improve health throughout the life course, as well as potential to improve associated health conditions and quality of life. Recently documented improvements in childhood obesity among two to five year olds indicate that as a nation we are beginning to move in the right direction with addressing obesity.[7] To have an impact over the long term, these improvements will need to be expanded, accelerated, and sustained.

Implications for equity

A range of complex economic, environmental, social and cultural factors all have a part to play in the rise of obesity as a health problem. These factors have implications for health equity in terms of disparities in obesity prevalence by socio-economic status, racial/ethnic origins, geographic location, gender and having a physical or mental disability. Obesity is also associated with inequities in unemployment, poverty and well-being of adults and children. Psychosocial and psychological influences are also tied to increased risk for obesity and can often be influenced by environmental stressors or conditions.

Considerable evidence suggests that people with low socioeconomic status (SES) are at greater risk of becoming overweight and obese than people with high SES. SES measures (parental education, occupation, income, marital status, single-parent); home-related factors (parental divorce, parental support in education); school-related factors (learning experience, delinquency, early menarche), and health behavior factors (tobacco use, alcohol consumption, physical inactivity, and screen time) may all contribute to disparities in obesity, which translate to health and social inequities. Further, access to safe places to play, sidewalks allowing safe routes to school, and other factors comprising a healthy “built environment” are associated with the socioeconomic status of the census block group in which a person lives, which is in turn associated with physical activity and prevalence of overweight and obesity.[8] Multiple adverse circumstances experienced from adolescence to young adulthood in the context of their family and environment have a cumulative impact on risk for obesity.

Underlying pathways to social inequity in overweight differ between men and women.[9] Between the NHANES I and NHANES III surveys (a period of 20 years) prevalence for overweight and obesity in young girls increased more than two-fold, whereas that of boys increased less (approximately 25 percent). However, in children older than six years of age, and particularly in adolescence, there has been an approximate doubling of obesity prevalence in boys as well as in girls in the United States in the same time. Racial and ethnic differences also are apparent. For boys and girls, overweight is highest in Mexican American children, intermediate among non-Hispanic black children, and lowest in non-Hispanic white children. In examining what can be defined as the overweight group in childhood (i.e., above the 85th percentile cutoff), nearly 22 percent of pre-school children in the United States can be defined as overweight and 10 percent as obese.[10,11,12,13]

Emerging data suggest associations between the influence of maternal and fetal factors during intrauterine growth and growth during the first year of life on risk of later development of adult obesity and its comorbidities. In addition, recent data suggest that varying biological responses in different racial/ethnic groups differently contribute to overweight, obesity, and their comorbidities, placing some children at greater risk – African-American, Latino, Native American, Asian American and Pacific Islander children living in low-income communities.[14,15,16,17]

Additionally, children and adults that have a physical disability that limits mobility, or an intellectual or learning disability are at an increased risk of obesity.[18,19] For example, 20 percent of children ages 10 through 17 years who have special health care needs are obese compared with 15 percent of children the same ages without special health care needs.[20]

Recent research shows that children and adults living in rural communities may also have an increased risk for obesity and require focused prevention efforts as well. Research published in *Obesity* and *The Journal of Rural Health* reinforces that children living in rural areas should be recognized as a high-risk population for childhood obesity, who warrant additional attention and assistance. According to the studies, 16.5 percent of rural children and 20.4 percent of rural adults are obese, compared with 14.4 percent of urban children and 17.8 percent of urban adults.[21,22] The studies also show that in addition to being at increased risk for obesity and overweight, rural children also are at increased risk of poverty, are less likely to have health insurance, are less likely to have accessed preventive care in the past year, and have lower levels of physical activity. Overall, children living in rural areas are about 25 percent more likely to be overweight or obese than children living in metropolitan areas.[23,24] This represents a change from the past when children from metropolitan areas were at greater risk for being overweight than rural children.

A person's risk of developing obesity is often heavily influenced by psychological factors. Boredom, depression, anxiety, stress, trauma (whether as an adult or child), and feelings of low self-esteem are examples of psychological factors that could result in an individual's overeating and under-exercising. Identifying the psychological problems can help an individual greatly in his or her understanding of the basis of overeating. Psychosocial factors associated with the incidence of obesity in ethnic minorities include inadequate social support, cultural barriers to communication, racism and discrimination, stress and lack of knowledge. Psychological factors also influence eating habits and obesity. Many people eat in response to negative emotions such as boredom, sadness, or anger.[25,26]

Public health impact

Obesity is a public health problem as it is a risk factor for several chronic diseases and can lead to higher rates of morbidities**.** According to the NCHS, 66 percent of adults age 20 years and over are overweight or obese.[27] Despite moderate declines among two to five year olds, over the past 30 years, obesity prevalence has more than doubled among children and adults and tripled among adolescents.[28,29] The alarming rates of obesity cause concern because of the associated health consequences. Obesity increases the risk of many chronic diseases and conditions including diabetes, heart disease, hypertension, depression, stroke, arthritis, and some cancers.[30] Overweight children are likely to become overweight or obese adults.[31,32,33] Further, experts posit that obesity is beginning to have an impact on life expectancy; if the trends in obesity continue unchecked, the increases in fatal and non-fatal chronic conditions could impact life expectancy such that children may live shorter and unhealthier lives then their parents.[34]

The economic costs of obesity are staggering. The total cost of obesity and physical inactivity in 2000 was estimated to be $117 billion. The treatment of obesity related conditions has been linked to a 36 percent increase in health care spending.[35] The proportion of pediatric hospital discharges with obesity-related diagnoses has increased dramatically in the past 20 years. Wang and Dietz analyzed the economic burden of obesity in youths six to 17 years of age and found

that obesity-related annual hospital costs (based on 2002 constant dollar value) increased more than three-fold over the two decades between 1979-81 and 1997-99; from $35 million to $127 million. During that period, discharges of obesity-related diabetes nearly doubled (1.43 to 2.36 percent); obesity-related gallbladder disease tripled (0.36 to 1.06 percent); and obesity-related sleep apnea increased five-fold (0.14 to 0.75 percent). Asthma and certain mental disorders were the most common primary diagnoses when obesity was listed as the secondary diagnosis. Thus, the increasing prevalence and severity of obesity among children and adolescents has resulted in significant economic costs.[36]

Recent studies have documented the impact that obesity has on annual medical expenditures among adults. Sturm found that obese adults (18 to 65 years of age) have 36 percent higher average annual medical expenditures compared with those of normal weight.[37] Finkelstein et al. found that aggregate obesity-attributable medical expenditures account for 5.3 percent of adult medical expenditures in the United States and that roughly 50 percent of these expenditures are financed by Medicare and Medicaid.[38]

Leverage or realign resources

With the strong evidence that a life course perspective is important in obesity development and its consequences, consideration must be focused on preventing obesity in women of child-bearing age, preventing excessive weight gain during pregnancy, and encouraging breastfeeding in infants. Family behavior patterns, diet after weaning, adequate physical activity and the use of new methods of information dissemination can help reduce the impact of childhood obesity worldwide.[39,40] Public health programs can work with providers and other community organizations that provide care and services to pregnant women to include messaging and resources around healthy weight.

Other potential approaches to fighting the obesity epidemic beginning in childhood include leveraging and readjusting resources to ensure that children, particularly those who are disadvantaged, have access to and benefit from a comprehensive, effective, community-based health and mental health care system. It will be necessary to work with non-health partners to integrate childhood obesity priorities with initiatives such as environmental design and sustainability, food systems, food marketing, disabilities, or economics.[41] Strategies such as those implemented by the New York City local government, including requirements to post nutrition information on menus, the banning of trans fats, and limiting the size of single serving beverage cups, are all regulatory policy changes that aim to make the healthy choices easier; whether or not these strategies will ultimately influence personal choice and impact health outcomes remains to be seen, but early studies show that consumer awareness of nutrition has increased since labeling requirements went into effect.[42]

A key aspect of capacity building involves establishing collaborative relationships with partners from state and local governments and the private sector. It is crucial for the maternal and child health (MCH) programs and other key partners at the state and local level (e.g., department of transportation, parks and recreation, local health departments) to build numerous partnerships with health care organizations (e.g. the American Academy of Family Physicians), volunteer agencies (e.g., the YMCA, the American Heart Association), universities, organizations that address health disparities (e.g., the Indian Health Service), private companies (e.g., sporting goods companies), and other types of organizations (e.g., the National Guard).[43] The potential partners that can improve the health of the community is not limited to those listed above; schools, planning commissions, restaurants, and farmers are all stakeholders in this effort. Through partnerships and collaborations, organizations can align efforts, policies and resources to promote healthy behaviors, and ensure communities have access to healthy foods and environments that promote physical activity and healthy lifestyles.

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

Overweight and obesity are independent risk factors for increased morbidity and mortality throughout the lifecycle. For example, overweight and obesity in women are predictors of gestational diabetes during pregnancy and newborns with excessive birth weight. High birth weight is a predictor of overweight and obesity in adulthood and in cofactors associated with insulin resistance.[44,45,46,47] Overweight and obese individuals are more likely to develop conditions such as hypertension, diabetes, some cancers, sleep apnea and stroke.

Data from a number of studies provide strong evidence that higher levels of BMI during childhood can predict overweight later in life. This was recently summarized in a review by Goran.[48] Data from four longitudinal studies were reviewed and showed that the probability of overweight at 35 years of age for children with BMI in the 85th to 95th percentiles increased with increasing age. The prediction for adult weight was most accurate for BMI at 18 years of age with accuracy

decreasing for BMI below 13 years of age. Goran concluded that the “persistence of pediatric obesity into adulthood increases according to the age at which obesity is initially present.[48,49]

Maternal obesity during pregnancy carries an increased risk of birth defects, including neural tube defects, orofacial clefts, and congenital heart defects (CHDs).[50],[51] As maternal obesity becomes more common, the potential for children to be born with CHDs is anticipated to increase; CHDs and other birth defects contribute significantly to infant morbidity and mortality, adding to the overall health consequences of obesity.[52]

Comorbidities associated with obesity and overweight are similar in children as in the adult population. Elevated blood pressure, dyslipidemia, and a higher prevalence of factors associated with insulin resistance and type 2 diabetes appear as frequent comorbidities in the overweight and obese pediatric population; the obesity-dependence of type 2 diabetes has led to the use of the term “diabesity” to describe the co-morbidity.[53] In some populations, type 2 diabetes is now the dominant form of diabetes in children and adolescents.[14] [54] Thus, being overweight during childhood brings comorbidities that will increase the duration of comorbidities in an individual by one to two decades, a factor that can increase the impact of a number of risk factors on adult diseases and overall health.[51,52] Obese children and adolescents also have a greater risk of social and psychological problems, such as discrimination and poor self-esteem, which can continue into adulthood.[55]

Data Criteria

Data availability

Data tracking population obesity measures are compiled and collected from multiple data sources. To capture the child and adult populations two surveys must be used; one for children under 17 years of age, and one for adults 18+ years of age.

Childhood/Adolescent Obesity Data

The National Survey of Children’s Health (NSCH), sponsored by the Maternal and Child Health Bureau (MCHB) of the Health Resources and Services Administration, examines the physical and emotional health of children ages zero to 17 years of age. The survey is administered using the State and Local Area Integrated Telephone Survey (SLAITS) methodology, and it is sampled and conducted in such a way that state-level estimates can be obtained for the 50 states, the District of Columbia, and the Virgin Islands. The survey has been designed to emphasize factors that may relate to the well-being of children, including medical homes, family interactions, parental health, school and after-school experiences, and safe neighborhoods. The MCHB leads the development of the NSCH and NS-CSHCN survey and indicators, in collaboration with the National Center for Health Statistics (NCHS) and a national technical expert panel. The expert panel includes representatives from other federal agencies, state Title V leaders, family organizations, child health researchers, and experts in all fields related to the surveys (adolescent health, family and neighborhoods, early childhood and development etc.). The most recent data set, the 2011-2012 NSCH, encompasses a sample size of more than 95,000 children with approximately 1,800 interviews completed in each of the 50 states and the District of Columbia.

MCH programs can readily gain immediate access to the data through datasets released by the NCHS, and on the MCHB sponsored Data Resource Center for Child and Adolescent Health Website (www.childhealthdata.org). Data from the 2011/2012 NSCH were made available in early 2013. The survey questionnaire and raw dataset are available for download on the CDC’s NCHS website in SAS format. The Data Resource Center (DRC) website provides data nationwide, for all 50 states and the District of Columbia. Additionally, both the raw datasets and the website allow users to stratify measures by sociodemographic groups, including but not limited to age, sex, race/ethnicity, primary household language, household income, and special health care needs. Cleaned, state-specific datasets with new variables that include national and state indicators are available at no cost in SAS and SPSS formats. For information on how to order state-specific sets, contact cahmi@ohsu.edu. Local data is not searchable. The NSCH is not administered annually. Over the past decade, the NSCH has been administered four times.

In the NSCH, BMI-for-age is based on parents' recollection of the selected child's height and weight. Data are available for children age 10-17 years only and are grouped into three categories: Underweight (less than 5th percentile); healthy weight (5th to 84th percentile); overweight OR obese (85th percentile or above).

In children and teens, body mass index percentile is used to assess underweight, overweight, and obesity. Children's body fat composition and volume change over the years as they grow. Also, girls and boys differ in their body fat composition and volume as they mature. This is why BMI for children, also referred to as BMI-for-age, is gender- and age-specific.[56] For more information, including how BMI-for-age is calculated for children and teens, go to: www.cdc.gov/healthyweight/assessing/bmi/childrens_bmi/about_childrens_bmi.html.

Adult Obesity Data

The Behavioral Risk Factor Surveillance System (BRFSS) is the world's largest, on-going telephone health survey system, tracking health conditions and risk behaviors in the United States yearly since 1984. Currently, data are collected monthly in all 50 states, the District of Columbia, Puerto Rico, the U.S. Virgin Islands, and Guam. The Centers for Disease Control and Prevention (CDC) provides state and national level prevalence data on their web site.

The CDC develops approximately 80 BRFSS questions each year. Some of these are core questions asked each year, and some are rotating core questions asked every other year. There are also CDC supported modules that address specific topics that states can use on an optional basis. States can also develop additional questions to supplement the core questions.[57]

Due to changes in the weighting methodology and the addition of the cell phone sampling frame, the BRFSS 2011 data should be considered a baseline year for data analysis and is not directly comparable to previous years of BRFSS data. This indicator is calculated from self-reported weight and heights from survey respondents. BMI is computed as weight in kilograms divided by height in meters squared (kg/m^2). BMI is an intermediate variable used in defining overweight and obesity. BMI categories for adults are: Underweight=BMI less than 18.5, Recommended Range=BMI 18.5 to 24.9, Overweight=BMI 25.0 to 29.9 and Obese=BMI 30 or greater. Respondents who answer that they do not know their height and weight or refuse to answer these questions are not included in the analysis.

Data quality

Childhood/Adolescent Obesity Data

The main limitation of the NSCH is that the information provided is from parent recollection of screenings received and perception of child's health and development over the past year. The survey methodology does not provide an opportunity for confirmation with medical records or physical measurements. Although literature regarding parental reporting as a proxy measure is contradictory, research supports the use of parents as proxy measures when obtaining child health information.

The NSCH is weighted to represent the national population of non-institutionalized children age 0-17 years. According to the survey documentation, missing data for income were relatively high for 2011-2012 data, and a study of nonresponse patterns indicated that excluding records with missing income could impact the representativeness of the remaining data; therefore, a data file with imputed values for income is provided to be used with the datasets.

The NSCH documentation presents both response rates and completion rates. For 2011-2012 data, the combined national response rate for both landline and cell phone samples was 23 percent. The completion rate, which is calculated as the proportion of households known to include children that completed all sections up to and including Section 6 (for children less than 6 years of age) or Section 7 (for children 6 to 17 years of age), was 54.1 percent for the landline sample and 41.2 percent for the cell-phone sample.

Qualitative testing of the entire 2007 NSCH was conducted by the National Center for Health Statistics. They conducted cognitive interviews with the 2007 NSCH Computer-Assisted Telephone Interview (CATI) to make sure the entire survey instrument was functioning properly. N=640 interviews were completed over three days in December 2006. The questionnaire was then revised and finalized based on feedback from participants in these interviews.

Previously validated questions and scales are used when available. All aspects of the survey are subjected to extensive literature and expert review. Respondents' cognitive understanding of the survey questions is assessed during the pretest phase and revisions made as required. All final data components are verified by NCHS and DRC/CAHMI staff prior to public release. Face validity is conducted in comparing results with prior years of the survey and/or results from other implementations of items.

NSCH survey collects data on childhood obesity, including state reports of childhood obesity. The sample sizes are sufficient for state-level analyses in every state. Responses to questions K2Q02 (child's height) and K2Q03 (child's weight) from NSCH were not independently verified (e.g., measurement, health records, etc.). A study comparing parent-reported height and weight estimates from the 2003 NSCH with results of physical measurement from the National Health and Nutrition Examination Survey revealed that parents typically overestimate height and underestimate weight of children younger than 10 years of age.[58] Therefore, BMI for children under 10 years of age are not reported or included as part of this indicator. Additionally, calculation of BMI-for-age is usually based on the age of the child in months. Because age was only reported in years for this survey, children were assumed to be at the midpoint of the age-year for purposes of calculating BMI-for-age.

Items K2Q02 and K2Q03 and calculation of BMI-for-age were not changed since 2003. However, changes in CDC's labeling of the 2 highest BMI-for-age categories are reflected in DRC label changes for the 2007 NSCH. The 85th to 94th percentile range was changed from "At risk of overweight" to "Overweight." The 95th and higher percentile range was changed from "Overweight" to "Obese."[59]

Adult Obesity Data
Numerous studies have compared estimates of chronic conditions and behaviors obtained from BRFSS to other national surveys including the National Health Interview Survey and the National Health and Nutrition Examination Survey; while there are some differences, findings on overall health status and certain chronic conditions tended to be similar despite declining response rates for BRFSS.

Since some questions on the BRFSS address sensitive health conditions and behaviors, there is intermittent missing data throughout the dataset. However, refusal to answer generally accounts for a small proportion of responses for most data elements. The notable exception is income, where refusals accounted for more than 23 percent of the data in one state in 2010; the median percent missing across BRFSS for income in 2010 was 14 percent.

Quality control computer programs are used to check the raw data for values out of range. CDC performs quality checks for core questions, and each state has its own protocol for checking state-specific questions. Interviewers are monitored during the annual questionnaire pilot period and intermittently during the data collection period to determine whether any interviewer bias exists and to correct any bias that might be found. On an ongoing basis, 10 percent of interview calls are verified.

Prior to 2011, the sampling for BRFSS represented only adults living in a private residence with a landline telephone, but starting in 2011, the sample also included data from respondents living in cell phone-only households. In 2012, the BRFSS sample expanded to include adults who live in college housing. Weighted response rates are presented by state. For 2011, the median weighted response rate for the combined cell phone and landline was 49.72 percent.

The survey adjusts for non-response to reduce the known differences between respondents and non-respondents. Although participants interviewed may not represent a state in terms of age, sex and race distribution, it is believed that weighting the data corrects for this potential bias. As with other health surveys, estimates are based on self-report data and they may over- or underestimate the actual prevalence of a particular risk factor in the population. Despite some oversampling in states by geography, the annual sample size is too small to compute precise estimates at the county level. The child prevalence data are reliant on proxy report from the adult respondent to the BRFSS and may be subject to misclassification related to this method.

The majority of BRFSS health indicators are at least moderately reliable and valid, with many being of high reliability and validity. The BMI measures used for this indicator were found to be of high reliability and validity.[60]

Estimates of overweight and obesity obtained from the BRFSS are based on sound methods for conducting surveys and performing statistical analyses; however, respondents tend to overestimate their height and underestimate their weight leading to underestimation of BMI and the prevalence of obesity.

Simplicity of indicator
BMI is calculated using weight in kilograms divided by height in meters squared. It is a measure to determine overweight and obesity. BMI does not measure body fat directly, but it is a reasonable indicator of body fat composition and volume

for most children and teens. A child's weight status is determined using an age- and sex-specific percentile for BMI rather than the BMI categories used for adults because children's body composition varies as they age and varies between boys and girls.

CDC Growth Charts are used to determine the corresponding BMI-for-age and sex percentile. For children and adolescents (aged two to 19 years):

- Overweight is defined as a BMI at or above the 85th percentile and lower than the 95th percentile for children of the same age and sex
- Obesity is defined as a BMI at or above the 95th percentile for children of the same age and sex[61]

Despite this moderate complexity explaining how BMI is calculated in children, the data required for calculation of the indicator from the NSCH are not difficult to obtain, nor is the indicator difficult to calculate.

For adults, overweight and obesity ranges are determined by using weight and height to calculate a number called the "body mass index" (BMI). BMI is used because, for most people, it correlates with their amount of body fat.

- An adult who has a BMI between 25 and 29.9 is considered overweight
- An adult who has a BMI of 30 or higher is considered obese

Data required for calculation of the indicator for adults from the BRFSS are not difficult to obtain, nor is the indicator difficult to calculate.

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