

Life Course Indicator: Household Food Insecurity

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: Household Food Insecurity (LC-09)

Brief description: Household Food Insecurity

Indicator category: Community Well-being

Indicator domain: Risk/Outcome

Numerator: Number of households experiencing food insecurity (household reports being unable to afford balanced meals, having to cut the size of meals because of too little money for food, or being hungry because of too little money for food.)

Denominator: Number of households

Potential modifiers: Adjunctive eligibility in TANF and Medicaid, race/ethnicity, age, education, income, geography, and rural/urban residence

Data source: United States Department of Agriculture (USDA) Economic Research Service (ERS)

Notes on calculation: Food insecurity is a status assigned by USDA based on the responses to a series of questions: household reports being unable to afford balanced meals, having to cut the size of meals because of too little money for food, or being hungry because of too little money for food. The estimate is available pre-calculated from <http://www.ers.usda.gov/>.

Similar measures in other indicator sets: Healthy People 2020 focus area NWS-13

Life Course Criteria

Introduction

According to the World Health Organization food security exists when “when all people at all times have access to sufficient, safe, nutritious food to maintain a healthy and active life.” It is common for specific measures of food security to be defined as including both physical and economic access to food that meets individuals’ dietary needs as well as their food preferences (WHO 2012).

Therefore, household food insecurity is when the conditions of food security are not met and members within a household report being unable to afford balanced meals, having to cut the size of meals because of too little money for food, or being hungry because of too little money for food. In 2011, 14.9 percent (17.9 million) of U.S. households were food insecure. Of these, 5.7 percent (6.8 million households) had very low food security. Nationally, 10 percent of households with children (3.9 million) experienced episodes of food insecurity during the past year. (Coleman-Jensen, 2012)

Growing up or living in food secure environments is a key component of ensuring good nutrition within and across populations. Poor nutrition has a large impact on overall health. Lifetime exposure to poor nutrition can increase the risk of negative adult and intergenerational health outcomes (Sell et al 2010). Research indicates that a lifetime of exposure to poor nutrition affects brain development, contributes to child mortality and is associated with chronic diseases including diabetes, heart disease and other chronic conditions (Bryce et al 2005) (Darnton-Hill, 2004).

Household food insecurity is an important life course indicator for both individual level health effects and overall community well-being. Community-level social capital (i.e. civic participation, norms of reciprocity, and trust) is significantly associated with decreased odds of experiencing hunger. In addition, social capital, particularly in terms of reciprocity among neighbors, contributes to household food security. Households may have similarly limited financial or food resources, but households with higher levels of social capital are less likely to experience hunger. (Martin et al 2004)

Implications for equity

As both a measure of individual and community well-being, household food insecurity has implications for social equity. Different populations experience different rates of household food insecurity. When examining national data on household food insecurity, certain populations have been disproportionately affected by increased food insecurity since the economic recession of 2008, including women living alone, Black and Hispanic households and households living below 185 percent of the federal poverty level (FPL). For households with incomes near or below the FPL, households headed by single parents, and Black and Hispanic households, rates of food insecurity were substantially higher than the national average. (Coleman-Jensen, 2012) Further, households that are below 185 percent FPL are 34 percent more likely to experience food insecurity than those who are above the 185 percent of FPL (Coleman-Jensen, 2012). Food insecurity is strongly linked to not having money to purchase food or resources available to attain food within one’s community; although food spending is an indirect indicator of food consumption, when household food spending drops below a minimum level because of resource constraints, food insecurity can manifest in disrupted eating patterns and reduced food intake (Coleman-Jensen, Nord, Andrews & Carlson, 2011). Most food-secure households spent 24 percent more for food than food-insecure households of comparable size and composition (Coleman-Jensen, Nord, Andrews & Carlson, 2012).

Such disparities are also reflected on the community level. Food insecurity was more prevalent in large cities and rural areas compared with suburban areas and within communities surrounding large cities. Very low food security is more prevalent in households located in principal cities of metropolitan areas (Coleman-Jensen, 2012).

Public health impact

In 2011, more than 50 million people in the United States experienced food insecurity. Ensuring food security in U.S. households is a critical public health issue. Lack of access to adequate and nutritious food is associated with many negative health outcomes that span across a lifetime and influence future generations. Poor nutrition affects the individual both physically and mentally; poor nutrition resulting from food insecurity was linked to experience of behavioral problems in preschoolers (Sell et al 2010). Infants born to mothers with inadequate nutrition before and during their pregnancy may experience developmental delays, congenital anomalies, low birth weight, and other health issues. Children who experience food insecurity are at increased risk for behavioral and social issues, chronic health conditions, and impaired academic development. (Bryce et al 2005) (Darnton-Hill et al 2004)

Good nutrition is the basic building block of human capital. Within communities, improving nutrition contributes to increased productivity, economic development, and reduced poverty; as disease and mortality are reduced, the community benefits from improved physical work capacity, cognitive development, school performance, and the overall better of its members health. Borrowing research and conceptual frameworks from international development, there is much evidence that nutrition and economic development have a two-way relationship. Improved economic development contributes to improved nutrition (albeit at a very modest pace), but more importantly, improved nutrition drives stronger economic growth (WHO 2006).

In response to food insecurity among low-income families, USDA supports the Supplemental Nutrition Assistance Program (SNAP), which offers nutrition assistance to households with a gross income less than 130 percent FPL. Evaluation and return on investment data from this program illustrates the broader public health impact of intervention on household food insecurity. SNAP leverages resources that reach beyond improving household nutrition to strengthening the economy by providing fiscal resources to local communities, thereby improving family economic self-sufficiency. For example, SNAP has a powerful anti-poverty impact that is not reflected in the Nation's official poverty statistics. If SNAP benefits were included in the official measure of income and poverty, the Census Bureau indicates that SNAP would lift 3.9 million Americans, including 1.7 million children, out of poverty. Further, with the deep recession in 2009 and the benefit increase with the Recovery Act, the estimated number of people lifted out of poverty rose to 4.5 million. Over the past 10 years, the number of households with earned income receiving SNAP has increased from 27 percent to 30 percent. In addition to assistance to individual families, SNAP provides a fiscal boost to the economy during economic recessions by putting critical dollars back into local economies. Every \$1 of SNAP benefits generates up to \$1.80 in economic activity, which translates into an estimated 18,000 jobs created or maintained for every \$1 billion increase in SNAP benefits (Ziliak, 2011). SNAP is a critical component of efforts to reduce food insecurity.

Leverage or realign resources

This indicator has the potential to leverage or realign resources as multiple potential partners, including many non-traditional public health partners, have a vested interest in food security and amelioration of household food insecurity within the United States. Because of the impact of poor nutrition on growth and development, children are a main focus of food security efforts, creating a natural area of partnership with MCH programs. In addition, there are three major national food and nutrition assistance programs in the United States administered by USDA Food and Nutrition Assistance service: SNAP, the Special Supplemental Program for Women, Infants, and Children (WIC), and the National School Lunch Program.

New or strengthened partnerships with the following organizations could realign resources and maximize impact on reducing food insecurity:

- Social or human service agencies or other community services organizations can work on promotion, advocacy or education around SNAP benefits across populations and other antipoverty work.
- Economic and community development agencies and urban planners, as well as obesity and chronic disease prevention partners can work on policy, systems, and environmental change work related to food access
- WIC programs can work towards increasing nutrition access and food security during the perinatal period
- Education and school health programs can work on continued promotion, advocacy and education around the National School Lunch Program

Other community-based food security programs may provide opportunities for partnership, for example, food pantries, food banks, and emergency kitchens. The food provided by emergency kitchens and food pantries comes mostly from local sources, distributed by volunteers. Food pantries, in 2000, distributed 239 million pounds of food per month, and emergency kitchens served a total of 479,000 meals on an average day. Many are operated by faith-based or community-based organizations (ERS 2005). Food banks through the non-profit group, Feeding America, feed 37 million people a year (Feeding America, 2013). Funding is acquired through donations from corporations, foundations and individuals to obtain food from local manufacturers, retailers, farmers and government sources and distribute it to local sites.

According to the National Resource Defense Council (NRDC), almost 40 percent of edible food in the United States goes to waste; it is estimated that an additional 25 million people could be fed if food waste were reduced by 15 percent (NRDC 2013). In an effort to reduce some of this waste, some restaurant groups participate in "food rescue" programs that

distribute unserved food that is still safe to eat to community agencies and organizations across the country. Programs such as these could avert the estimated costs of food waste that include \$750 million in waste disposal and 33 million tons of landfill waste annually. Increasing food security for U.S. households through these types of programs engages the restaurant industry in a health and social issue and can have a consequent positive impact on the environment.

In addition to expanded opportunities and partnerships, improved nutrition will lead to expanded productivity, economic development, and poverty reduction. As human capital and community well-being increase, additional resources may be realigned as a part of broader community development.

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

Food access and its effects on nutrition have multiple individual and intergenerational impacts for health. Experiencing food insecurity has impacts for both physical and mental health. Food insecurity is associated with a range of chronic illnesses such as hypertension, hyperlipidemia, and various cardiovascular risk factors (Seligman 2009). Food insecure adults have an increased risk of developing diabetes (Seligman 2007).

Although food insecurity is harmful to any individual, it can be particularly devastating among children due to their increased vulnerability and the potential for long-term consequences (Kushel, 2006). Food insecurity is associated with adverse outcomes in young children. In households where there is food insecurity, children display a higher rate of fair/poor health status and illness leading to hospitalizations which in turn, contributes to higher health care costs. The psychological health of children is affected when living in homes where food insecurity is prevalent, due to feelings of deprivation, increased stress, and depression created within the family (Cook, 2004). Research has also found that academic development is impaired in young, school-age children when they grow up in an environment of food insecurity. Their reading and math skills develop more slowly than in other children when entering kindergarten. They also may experience behavior problems including fighting, hyperactivity, anxiety, mood swings, and bullying (Feeding America Child Development 2013).

Food access and nutrition is also important during the perinatal period. Because of the lack of proper nutrients needed in pregnancy, a woman may be at risk for long-term physical health problems beyond pregnancy as well as depression and other mental health issues (Tarasuk 2011, Heflin 2005). In addition, infants may experience developmental delays, low birth weight, and other health issues if their mother did not have access to proper nutrition while pregnant.

In addition to specific health conditions, food insecurity is associated with incomes below the federal poverty level, decreased access to health care, and a higher incidence of visits to emergency departments and hospitalizations. Those lacking food security may prioritize meeting basic needs over preventive health care, and obtaining food for their families over medications for themselves. Medical care may be delayed which can further predispose individuals to a greater need for acute care (Coleman-Jensen et al 2011).

Data Criteria

Data availability

The USDA monitors the extent and severity of food insecurity through a nationally representative survey conducted by the United States Department of Agriculture (USDA) Economic Research Service (ERS) as a supplement to the U.S. Census Bureau Current Population Survey (CPS). This survey has been conducted annually since 1995. Reports from this survey include household food security, food expenditures and use of food and nutritional assistance programs. USDA ERS sponsors the annual survey and then compiles and analyzes the results.

Data for rates of food insecurity and very low food insecurity are readily available by state, including all 50 states and the District of Columbia. Data are combined over a three year period (2009 – 2011) and averaged in order to be more reliable (Coleman-Jensen, 2012)

MCH programs in all 50 states and the District of Columbia can gain access to the data through datasets released annually by the USDA Economic Research Report on the USDA website, <http://www.ers.usda.gov/>. The data is easy to access and interpret, presented in a variety of ways including 16 Tables in the *Household Food Security in the United States in 2011: Statistical Supplement/ap-058*, and available annually to the entire United States by state, including the

District of Columbia (ERS 2005). Data on food insecurity in the United States in 2012 were published in September 2013, indicated a less than one year lag in disseminating the data.

Data quality

The Census Bureau quality standards apply to all products released, including the CPS and the ERS. The Census Bureau makes every effort to ensure the data are accurate and reliable. The Office of Management and Budget (OMB) released Standards and Guidelines for Statistical Surveys with requirements for federal statistical agencies in 2006 (OMB 2006). In 2012, the U.S. Census Bureau reissued their statistical quality standards in 2012, which complement the 2006 OMB standards ensuring data quality (USCB 2012).

The food security statistics reported by ERS are based on survey measures developed by the U.S. Food Security Measurement Project, an on-going collaboration among federal agencies, academic researchers, and private, commercial and nonprofit organizations that was established in response to the National Nutrition Monitoring and Related Research Act of 1990 (NNMRR). The ERS survey consists of 18 questions exploring food security experienced within the previous 12 months. Following the enactment of the National Nutrition Monitoring and Related Research Act, a questionnaire was developed and field tested with the first analysis of the data produced in 1995. From 2003 to 2006 an expert panel convened by the Committee on National Statistics (CNSTAT) of the National Academies conducted a review of the survey and measurement methods. CNSTAT recommended that USDA continue to monitor food insecurity, affirmed the appropriateness of the current methodology, and suggested refinements.

The standardized questionnaires and methods for analyzing data developed by The Food Security Project are used by several national surveys including the National Health and Nutrition Examination Survey (NHANES), National Center for Education Statistics' Early Childhood Longitudinal Study – Kindergarten Cohort (ECLS-K), National Center for Education Statistics' Early Childhood Longitudinal Study – Birth Cohort (ECLS-B), National Health Interview Survey (NHIS) and Survey of Income and Program Participation (SIPP).

The annual survey covers a representative sample of the U.S civilian non-institutionalized population of 119 million households, with 43,770 households participating in the survey in 2011. These data have contributed to a growing number of regional, state and local studies that use the standardized data and analysis (ERS 2013).

Simplicity of indicator

Calculating this indicator is straightforward, comparable across all states, and simple to explain. The food security survey asks one adult respondent in each household a series of questions about experiences and behaviors that indicate food insecurity such as being able to afford balanced meals, cutting the size of meals because of too little money for food, or being hungry because of too little money for food. The food security status is assigned based on the number of food-insecure conditions reported.

The survey also collects information on whether a household participated in a federal food and nutrition assistance program such as Supplemental Nutrition Assistance Program (SNAP) or WIC nutrition services. Prevalence of food insecurity is reported at the state level and analyzed by multiple characteristics including family composition, race/ethnicity, household income, rural/urban residence, and participation in federal food and nutrition programs among other characteristics.

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