FOOD INSECURITY, HEALTH EQUITY, AND ESSENTIAL HOSPITALS

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KEY FINDINGS

- Food insecurity is significantly associated with a number of physical and behavioral health outcomes.
- Poor health and food insecurity often exacerbate each other, perpetuating a cycle of chronic illness that contributes to high health care costs and utilization.
- Food insecurity disproportionately affects vulnerable populations and is driven by social, economic, and environmental factors.
- Essential hospitals have a unique opportunity and responsibility to address food insecurity to improve patient and population health.
- Hospitals can address food insecurity through screening, on-campus resources, community partnerships and engagement, and referral to nutrition assistance programs.

BACKGROUND

Food insecurity is a serious problem in communities across the country, with profound clinical consequences and a deep connection to the social determinants of health. The U.S. Department of Agriculture (USDA) defines food insecurity as "the limited or uncertain availability of nutritionally adequate and safe foods or limited or uncertain ability to acquire acceptable foods in socially acceptable ways."[1] As of 2014, 48.1 million Americans were living in food-insecure households, including 32.8 million adults and 15.3 million children.[2] These figures translate to approximately 14 percent of all U.S. households, with 8.4 percent reporting low food security and 5.6 percent reporting very low food security.[3]

Food insecurity is typically recurrent but not chronic.[4] As a result, food insecure individuals often follow unpredictable diet patterns and use coping mechanisms to compensate for inadequate nutrition. Some of the more common coping mechanisms include eating low-cost/high-energy foods that are high in sugar and fat contents, skipping meals, and overeating during concentrated periods of time.[5]

While some might associate food insecurity strictly with hunger, these coping strategies can result in the overconsumption of the wrong types of foods and subsequent health concerns, such as weight gain and chronic disease.[6] This explains a unique and alarming co-occurrence of hunger and obesity in many low-income communities, where both food deserts (lack of access to fresh produce and full grocery stores) and overexposure to fast and processed food options are components of the built environment.[7] The built environment comprises all physical aspects of an area, such as buildings, homes, infrastructure, and open spaces.

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Every year, the USDA measures food security through a series of questions included on the U.S. Census Bureau's Current Population Survey. The 2014 survey collected information from 43,253 households, a representative sample of the U.S. population. The survey solicits responses from one adult individual in each household for a series of questions about food security, experiences, and behaviors. Based on these responses, households are classified into one of four categories (listed below). Food insecurity refers to the third and fourth classifications: "low food security" and "very low food security."

- **High food security:** Households had no problems, or anxiety about, consistently accessing adequate food.
- **Marginal food security:** Households had problems at times, or anxiety about, accessing adequate food, but the quality, variety, and quantity of their food intake were not substantially reduced.
- **Low food security:** Households reduced the quality, variety, and desirability of their diets, but the quantity of food intake and normal eating patterns were not substantially disrupted.
- **Very low food security:** At times during the year, eating patterns of one or more household members were disrupted and food intake reduced because the household lacked money and other resources for food.

Food Insecurity

U.S. Department of Agriculture, 2015

FOOD INSECURITY AS A HEALTH CARE ISSUE

Inadequate access to nutritious foods has well-documented connections to both physical and mental health outcomes. Associated physical health outcomes include decreased nutrient intake, anemia, asthma, tooth decay, hypertension, hyperlipidemia, diabetes, cardiovascular disease, obesity, immunosuppression, infection, and birth defects.[4-9] Associated behavioral health outcomes include anxiety, cognitive problems, depression, stress, decreased capacity to maintain independence, compromised emotional

Hennepin County Medical Center—Food Shelf, Tailored Meal Plans, and Diet Education

Hennepin Healthcare System operates Hennepin County Medical Center (HCMC) and multiple primary care clinics in Minneapolis and the surrounding suburbs. The Food Shelf at HCMC provides patients with nutritious foods, as well as health and diet education. The program provides food for more than 25 hospital-based clinics and seven community clinics, and it supports approximately 3,000 households and 7,600 people every month. Food is provided in packaging durable for public transportation and is picked according to specific patient groups. Staff also link patients to long-term assistance through the Supplemental Nutrition Assistance Program and the Special Supplemental Nutrition Program for Women, Infants, and Children.

development, and disordered eating.[10-13] Many of these conditions affect individuals of all ages, though some are more prominent among particular demographics. For example, adults under age 65 who face severe food insecurity are twice as likely to have diabetes than food-secure adults, and food-insecure children are 1.4 times more likely to experience pediatric asthma than food-secure children.[7] Some associations between food insecurity and health problems might be underreported, as underserved individuals with preclinical conditions are less likely to be engaged in health care services.[14]

Food insecurity and poor health often exacerbate each other, perpetuating a cycle of chronic illness (Figure 1). Food-insecure individuals are less likely to adhere to their medication and treatment plans. They might have trouble accessing or affording the treatment that they need due to the same resource constraints that impede food security.[7] Health issues also might lead to disability or unemployment, decreasing household income and further limiting access to nutritious foods.[9]

Food-insecure individuals often follow unpredictable diet patterns and use coping mechanisms to compensate for inadequate nutrition.

Boston Medical Center—Systematic Screening, Therapeutic Food Pantry, and Demonstration Kitchen

Boston Medical Center (BMC) comprises a 496-bed academic medical center and 13 affiliated community health centers in the Boston area. BMC screens all patients for hunger in its emergency department and clinics. When patients are found to be hunger-positive, physicians write prescriptions for healthy foods like fruits and vegetables. Patients can fill these prescriptions at an on-campus food pantry, which serves 7,000 low-income patients each month through a partnership with the Greater Boston Food Bank. Registered dietetic technicians receive the prescriptions via BMC's electronic health record system and prepare packages of clinically and culturally appropriate foods. This service extends to whole families rather than just individuals, and patients can visit the pantry up to twice a month. The program serves high numbers of patients with chronic conditions, including cancer, HIV/AIDS, inflammatory bowel disease, diabetes, and obesity. BMC also hosts a demonstration kitchen to teach patients how to prepare the foods they receive from the pantry.[10,29]

UMass Memorial Health Care—Community Gardens, Cooking Classes, and Enrollment Assistance

UMass Memorial Health Care is the largest health care system in central Massachusetts and comprises UMass Memorial Medical Center, Clinton Hospital, HealthAlliance Hospital, and Marlborough Hospital. The health system has increased access to healthy foods by developing community gardens in Worcester. This includes an urban farm for local youth, three school gardens, gardens at public housing developments, and several other gardens in locations in need of healthier food options. Produce from these gardens is made available to community residents through mobile farmers' markets , where Supplemental Nutrition Assistance Program (SNAP) payments are accepted. The health system also provides healthy eating and cooking classes through partnerships with community-based organizations. Additionally, all hospitals within the health care system provide enrollment assistance to thousands of patients for for SNAP and Special Supplemental Nutrition Program for Women, Infants, and Children services. Counselors screen patients in the emergency department, clinics, and community centers, as well as through help lines, to connect food-insecure patients to the appropriate resources.[10,33]

FIGURE 1: THE CYCLE OF FOOD INSECURITY AND CHRONIC DISEASE [6]

This continuous cycle has obvious implications for health care costs in the United States, which are higher than any other nation of similar economic standing.[15] A recent study of "high-utilizer" patients found that 33 percent were food insecure and an additional 25 percent were only marginally food secure.[8] Other studies show that one in four hospitalized children in the United States come from a food-insecure household.[16] High-utilizing patients are extremely costly to providers and payers and often have complex health needs driven by unhealthy behaviors, inadequate resources, and social determinants.[17]

Health care utilization for certain diet-related conditions has been shown to follow temporal patterns, likely associated with the expiration of food budgets or government-sponsored food assistance benefits before the end of each month. A study investigating inpatient hypoglycemia admissions between 2000 and 2008 in California found that among low-income patients, the rate of admission rose an average of 27 percent in the last week of the month.[6] Other income groups and conditions unrelated to food access did not show similar trends.[18]

Canada's use of a single-payer system has allowed researchers to calculate specific health care costs related to food insecurity, with recent studies showing consistently higher costs in food-insecure households.[19] While more research is needed to understand the entire footprint of these expenditures in the United States, estimates combining emergency department visits, inpatient stays, specialty/primary care services, and medication indicate that the overall impact is sizable, with Medicare and Medicaid bearing the majority of costs. [6,20]

Cook County Health and Hospitals System—Screening, Mobile Markets, and Nutrition Education

Cook County Health and Hospitals System (CCHHS) includes the John H. Stroger, Jr. Hospital of Cook County, Provident Hospital of Cook County, Oak Forest Health Center, and 16 ambulatory and community health care clinics in the greater Chicago area and suburban Cook County. CCHHS launched a pilot program in 2015 that connected food-insecure patients to fresh produce resources through the Greater Chicago Food Depository. CCHHS uses a two-question food insecurity screening tool during patient intake, and patients who screen positive are given vouchers for fresh produce at mobile produce markets called "FRESH Trucks." CCHHS also connects food-insecure patients in need of permanent assistance to local Supplemental Nutrition Assistance Program and Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) resources. CCHHS has also piloted culinary and nutrition education programs to teach patients about healthy eating.[30]

FOOD INSECURITY AS A HEALTH EQUITY ISSUE

Food insecurity disproportionately affects vulnerable populations, including ethnic minorities (particularly African-Americans, Hispanics, and Pacific Islanders), immigrants, disabled individuals, and low-income groups.[5,21] The clear disparities in incidence uncover a series of social, economic, and environmental drivers that make food insecurity and its associated health outcomes a pressing health equity issue in the United States.[22,23]

The relationship between income and food security is well-established. Households with limited finances have less money to spend on nutritious foods, and low-income neighborhoods often lack access to full-service grocery stores. Exhaustion of monthly food budgets can inhibit proper nutrition for extended periods of time, and government assistance programs—such as the Supplemental Nutrition Assistance Program (SNAP)—typically only last an average of two to three weeks for beneficiaries.[17] In tandem with economic resources, studies show that food insecurity is significantly associated with several other social burdens, including health care access, education, and housing. These social needs exacerbate and compete with one another as households struggle to prioritize and pay for each one.[24]

Food insecurity also disparately affects communities in various settings (urban, rural, and suburban), highlighting the influence of the built environment.[25] As previously mentioned, the coexistence of hunger and obesity in low-income areas indicates that food insecurity is not simply the absence of food, but the result of an environment that offers the wrong resources.[25]

Both rural and urban environments have statistically higher rates of food insecurity than suburban ones. This might be due in part to lasting structural inequalities, which left low-income communities with less resources and infrastructure than the mostly white, higher-income suburban neighborhoods that developed rapidly in the 1960s and 1970s.[26] More recent development patterns, such as the gentrification of urban neighborhoods, can also displace lower-income groups—either directly or by driving up the cost of living and necessities in their neighborhoods.[24] These constructs and various others—from local violence to disruptive road patterns—all compromise access to food resources within a community. [27]

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Eskenazi Health—Meals on Wheels, Food Pantry, and Rooftop Garden

Eskenazi Health provides care through a 315-bed hospital in Indianapolis and 11 outpatient health centers across Marion County, Indiana. Earlier this year, Eskenazi Health began a program with its local Meals on Wheels America (MOWA) affiliate to deliver food prepared in the hospital cafeteria at no cost to patients in need. Other programs include a food pantry at Eskenazi Health Center Pecar (in one of the region's most vulnerable neighborhoods), operated in partnership with a nearby church. Food at the pantry is provided by a community food bank and given to patients that screen positive for food insecurity at the health system's clinics. Additionally, the Sidney & Lois Eskenazi Hospital has a rooftop garden that is open to patients, staff, and the community at large. This "Sky Farm" includes about 5,000 square feet of available growing spaces and produces more than 2,000 pounds of fresh produce annually.[31,32]

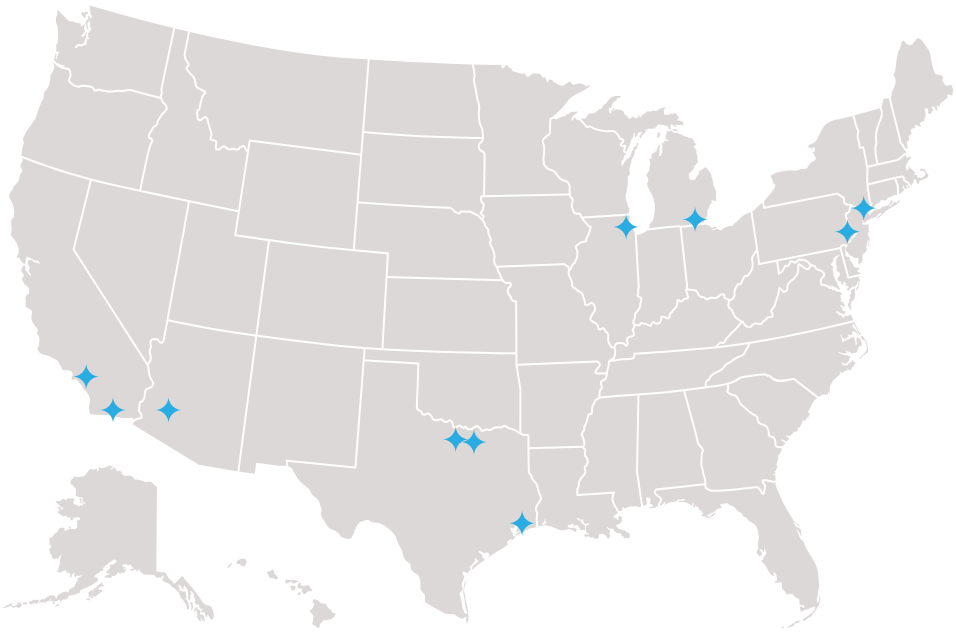
WHAT IS HEALTH EQUITY?

The Centers for Disease Control and Prevention defines health equity as "achieved when every person has the opportunity to attain his or her full health potential and no one is disadvantaged from achieving this potential because of social position or other socially determined circumstances." [22]

FOOD INSECURITY AND ESSENTIAL HOSPITALS

Members of America's Essential Hospitals (essential hospitals) care for the nation's most vulnerable, including racial and ethnic minorities, complex patients, and low-income populations. The established incidence of food insecurity within these groups clearly demonstrates the clinical and financial burden essential hospitals experience as a result of treating such populations. In fact, at least one essential hospital operates within each of the 10 counties with the most food-insecure individuals in the United States (Figure 2).[28] This information underscores the unique opportunity and responsibility essential hospitals have to address food insecurity to improve patient and population health. The case studies found within this brief outline several such programs that are already in place at essential hospitals around the country.

FIGURE 2: COUNTIES WITH THE HIGHEST NUMBER OF FOOD-INSECURE INDIVIDUALS IN THE UNITED STATES



COUNTY

Los Angeles
New York*
Harris, Texas
Cook, Illinois
Maricopa, Arizona
Dallas
San Diego
Wayne, Michigan
Tarrant, Texas
Philadephia

**This comprises all five boroughs and coterminous counties of New York City*

For a current list of America's Essential Hospitals members, please visit essentialhospitals.org.

OPPORTUNITIES FOR IMPROVEMENT

Hospitals can take measures at the patient, system, and community levels to help improve food security. Doing so will help to avoid unnecessary health care costs and utilization, improve the health of individuals and families, and promote a more equitable system of health and health care in the United States. The Affordable Care Act has opened doors to improving and reforming the delivery system to be more equitable, patient-centered, and upstream-focused. Particular opportunities through Medicaid delivery and payment initiatives—like State Innovation Models and other reforms that include a focus on population health—are particularly useful for enacting programs targeting social determinants, such as food insecurity.[36] Community benefit requirements also can serve as a tool, as they require nonprofit hospitals to assess community needs and put forth plans to address those priorities.

Screening

Screening patients for food insecurity is a simple and efficient way to incorporate social determinants into the clinical setting. In 2010, a group of researchers and physicians developed a two-question screening tool derived from the USDA's annual survey, which has been publicly supported by organizations, such as the American Academy of Pediatrics, for effectively identifying household food insecurity.[37,38] Having clinicians include this in patient encounters will use existing staff and processes at no additional cost to the provider. Screening allows clinicians to tailor medical care based on food security status, communicate with patients about the importance of nutrition, and provide or link patients to the resources necessary to improve health outside of the hospital setting. As one of the more clinically manifested social needs, it might allow providers to discern other associated social conditions that are harder to identify but often operate concurrently to compromise health.[39]

Hospital-Run Services

Offering affordable or no-cost food through hospital facilities is a convenient option for patients and ensures that advice given by physicians can be easily and realistically turned into action. Food pantries, demonstration kitchens, mobile markets, and produce gardens are useful mediums for distribution that can also engage patients through events and participation. In addition to providing food, hospitals can offer culinary and nutrition education programming to empower patients, demonstrate how to prepare healthy meals, and communicate the importance of healthy lifestyles to patients and families. It is important for these programs to be culturally sensitive and accommodate the medical needs of patients with various conditions.

Community Partnerships and Engagement

For more sustained improvement, partnering with community organizations—such as food banks and local MOWA affiliates—can provide clear channels for patients to get safe, nutritious foods in their own neighborhoods. Pooling resources with these other entities

Virginia Commonwealth University Health System—Senior Care Transitions, Meal Delivery, and Nutrition Education

Virginia Commonwealth University Health System (VCU Health) serves the larger Richmond, Virginia, area through VCU Medical Center, Children's Hospital of Richmond, VCU Community Memorial Hospital, and several outpatient clinics. VCU Medical Center has partnered with Meals on Wheels America and the Capital Area Agency on Aging's Senior Connections program to target Medicare beneficiaries being discharged from the hospital who are at high risk for readmission. Health coaches and volunteers deliver meals to patient homes and work with patients to develop meal plans and provide nutrition education. The program specifically targets self-management and medication adherence through improved nutrition.[35]

can expand access to inventory and address transportation barriers for patients and community members. Hospitals and health systems can also work with other community groups to invest in food security as a community priority by supporting local policies and business investments that promote equitable food access. Health care providers, policymakers, and community officials should carefully consider resource allocation for vulnerable populations, and pay specific attention to monthly food supplies. By attuning to the amount and frequency of government assistant food program allotments, these stakeholders can make informed staffing and funding decisions for food banks and pantries throughout the community.[16]

Referral and Enrollment Assistance

Health care providers can offer assistance to patients who are eligible for federal nutrition assistance programs, such as SNAP, WIC, and the National School Lunch Program. Although these programs can significantly help low-income families, only about 61 percent of food-insecure households use them, and many qualifying households are unaware of such services.[23] In addition to directing patients to these agencies, hospitals can offer assistance with the application and enrollment process to ensure that patients from all literacy backgrounds and languages can complete their paperwork properly.

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