

# Health and Economic Benefits from Hospital Investment in a Sustainable Food System

## Research and Guidance for Administrators



### The Cost of an Inequitable Food System

Some of the most common and costly diseases including heart disease, obesity and diabetes are diet-related and often preventable. One in every four deaths in the United States is related to heart disease. Furthermore, this deadly disease costs the country \$207 billion each year. Over a third of the adult population is obese. Not only does obesity impact quality of life for nearly 79 million individuals, the Centers for Disease Control and Prevention (CDC) estimated that obesity related medical costs were \$148 billion in 2008, the most recent year for which data was available.

Diabetes impacts 29 million individuals and an additional 86 million are pre-diabetic. The CDC estimates that without major changes as many as one in three adults will have diabetes by 2050. Diabetes is a serious disease that can lead to kidney failure, amputations and loss of eyesight. It is also extremely costly, accounting for 20% of all medical expenses.

Without action by the health care sector and public health professionals, the prevalence of these diseases and their financial burden on our health care system and society will grow.

This brief reveals four ways that investments in a sustainable food system may reduce disease burden as well as financially benefit individual hospitals and health systems.

- (1) Provision of healthier food offerings in cafeterias to **improve employee productivity**.
- (2) Investment in the local food system may be implemented under the **community benefit standard** to reduce poverty and prevent or treat diet-related disease.
- (3) Improvement of patient access to healthy food after leaving the facility may reduce **readmission rates and their associated costs** by helping patients maintain a better diet.

- (4) Access to sustainably-produced foods has the potential to **reduce the health risks to vulnerable populations that are most likely to be uninsured or underinsured**.

### How Diet Relates to Disease

Poor diet is a contributing factor to costly and life-impacting diseases. Despite this knowledge, most Americans do not follow dietary guidance provided by doctors, dietitians and the U.S. Department of Agriculture (USDA). Only 13% of Americans consume the recommended levels of fruits and vegetables and on average, they consume triple the amount of recommended sodium. However, for many households in low-income communities these dietary patterns may not be a choice. Food with less nutritional value may be the only available or affordable option.<sup>6</sup>

### The Unique Role of Health Care in Improving the Food System

Health care is the only sector with an explicit mission to promote wellness and treat the sick. Given the strong association between diet and wellness, improving the food system to provide everyone access to healthy, affordable and culturally appropriate food is in direct alignment with health care's mission.

Health care professionals are in a unique and powerful position to impact patient behavior due to the trust placed in them by patients. Information explicitly provided to patients, as well as the implicit modeling provided by the hospital environment carries this prerogative. According to a study by Watters et al., patients feel that hospital food should be a model for a healthy diet.<sup>7</sup>

Beyond serving patients, health care systems are large employers in many communities. In many facilities the population most impacted by the food that is offered is the staff, since they eat in the cafeteria each day over many years.

Furthermore, demonstrating a culture of health to patients and visitors through the food that is available may be of greater influence than similar efforts undertaken in other environments because a hospital is viewed as a place for healing.

## **Benefits to Health Care for Leading the Way in Food System Reform**

There are a variety of benefits for individuals and population health associated with improved nutrition and increased access to locally sourced and sustainably-produced healthy food. This brief focuses on the benefits to an individual hospital or health system resulting from investments in the food system. The brief summarizes current research demonstrating that hospital food is much more than meals served in the cafeteria; it represents an integral part of health care's ability to promote the health of patients, staff and the surrounding community.

### 1. Provision of healthier food offerings in cafeterias to improve employee productiveness.

Concentration, memory, attention span, and motor performance are affected by diet, and thus, poor nutrition may cause the quality of work to suffer.<sup>8</sup> While this is true of all people, it is of critical importance for healthcare providers for whom these functions have life or death consequences. In a survey of hospital workers in Great Britain, 56% of respondents listed lack of selection to healthy options as a barrier to healthy eating in the workplace and 83% said that nutrition and healthy eating were important factors in influencing their work performance.<sup>9</sup> Improving the quality of food available is a relatively simple and low-cost way to support hospital staff throughout their physically and mentally demanding work.

There are further economic incentives for hospitals to invest in healthy food for their workers. Healthier food means healthier employees, and therefore reduced health care costs for employees. A report by the World Health Organization and the World Economic Forum stated that adding healthier food to the workplace cafeteria was a health promotion strategy that could achieve a 25-30% reduction in medical and absenteeism costs in an average period of 3.5 years, as well as a savings-to-cost ratio of \$5.81 to \$1.<sup>10</sup>

When evaluating the foodservice budget, administrators must consider not only the health benefits of investing in nutritious food, but also the economic benefits often returned in other departments.

### 2. Investment in the local food system implemented under the **community benefit standard** to reduce poverty and prevent or treat diet-related disease.

Sourcing local food can have a significant economic impact on the community surrounding a facility. According to a recent USDA publication, there is an economic multiplier of 1.66 for every dollar spent on local food.<sup>11</sup> Other studies such as one that evaluated the economic impact of the University of Vermont Medical Center's (formerly known as Fletcher Allen) local food program found a multiplier of up to 2.64.<sup>12</sup> Generating local economic activity through investments in the local food system can be utilized as a strategy for addressing social determinants of health under the community benefit standard due to the documented association between income and health. These investments can also help to improve income for both farmers and others in the supply chain, such as value-added processors and distributors residing in the hospital service area.

In addition, targeted growth in the local food system can improve access to healthy food in underserved communities or for low-income individuals. There are numerous evidence-based approaches to reduce disease burden through improved food access,<sup>13,14</sup> that can be utilized for community benefit planning and implementation.

### 3. Improvement of patient access to healthy food after leaving the facility may **reduce readmission rates and their associated costs** by helping patients maintain a better diet.

Investment in the community food environment and an individual's ability to eat well goes beyond community benefits. Under the Readmissions Reduction Program established under the Affordable Care Act facilities are penalized<sup>15</sup> when patients with certain ailments are readmitted within 30 days of their original discharge. Numerous studies call attention to the relationship between

poor diet and hospital readmission.<sup>16,17</sup> This pattern is of particular concern for heart disease and stroke patients, a population whose continued health is largely impacted by diet. For this reason, investing in community food access and supporting patients in eating well after discharge can be cost effective in the long-term.

#### **4. Procurement of sustainably-produced foods reduces health risks to vulnerable populations that are most likely to be uninsured or underinsured.**

Production practices used by many conventional agricultural operations are linked to negative health impacts for farm workers, the surrounding community, and in some instances society at large. Practices of chief concern are the routine use of pesticides in crop production and antibiotics in animal agriculture.

Occupational exposure to pesticides is linked to asthma and chronic bronchitis,<sup>18</sup> increased risk to certain types of cancers such as leukemia and lymphoma,<sup>19</sup> and other health challenges such as skin rashes, nausea, and eye irritation.<sup>20</sup> Laborers in confined animal feeding operations, where animals are routinely provided antibiotics, have been found to carry a higher rate of antibiotic resistant bacteria than the population at large.<sup>21</sup> These confined animal feeding operations cause additional harm to the safety of water supplies and reduce air quality for the surrounding community.<sup>22</sup>

The health burden caused by this dominant agricultural system significantly impacts quality of life for farm laborers and adds a financial burden to healthcare because many farm workers are underinsured or uninsured.

#### **References**

- (1) Centers for Disease Control and Prevention. Heart Disease Fact Sheet. [https://www.cdc.gov/dhdsdp/data\\_statistics/fact\\_sheets/fs\\_heart\\_disease.htm](https://www.cdc.gov/dhdsdp/data_statistics/fact_sheets/fs_heart_disease.htm) Updated 2016.
- (2) Centers for Disease Control and Prevention. Adult Obesity Fact Sheet. <https://www.cdc.gov/obesity/data/adult.html> Updated 2016.
- (3) Centers for Disease Control and Prevention. (2016) At a Glance 2016: Diabetes. <http://www.cdc.gov/chronicdisease/resources/publications/aag/pdf/2016/diabetes-aag.pdf> Last accessed 8.12.2016
- (4) Centers for Disease Control and Prevention. (2015) Adults Meeting Fruit and Vegetable Intake Recommendations. Morbidity and Mortality Report. 64(26);709-713
- (5) Centers for Disease Control and Prevention. (2016) Prevalence of Excess Sodium Intake in the United States - NHANES, 2009-2012. Morbidity and Mortality Weekly. 64(52);1393-7

It adds a financial burden to health care because many farm workers are underinsured or uninsured. Many agricultural operations are exempt from Fair Labor Laws; depending on the farm size employers may not be required to provide workers with minimum wage.<sup>23</sup> According to the Center for Farmworker Health 79% of all farm laborers live below the poverty line.<sup>24</sup> Furthermore, the agricultural system relies heavily on migrants of varying legal status who may remain ineligible for Medicaid. Due to the poor insurance coverage of this high-risk population, health care carries a large financial burden for their treatment. Procurement of more sustainably produced products will send a message to the supply chain that these practices are unacceptable and shift production to be supportive of worker health and protective of our healthcare resources.

#### **Conclusion**

Food is integral to health and a core component of health care's mission to promote wellness and treat disease. This is of particular importance in the United States given the high rates of obesity, diabetes and heart disease - all diet-related and costly.

Despite this fact, hospital food service is often one of the first places administrators look to save money and health care investment in the overall food system is typically an intervention overlooked. As described in this brief, investment in the procurement of local and sustainably produced foods and support for the community food environment can improve diets, create jobs, and improve employee health. Such outcomes are beneficial for population health and will reduce health care costs in the long term.

- (6) Larson, N.I.; Story, M.T.; and Nelson, M.C. (2009). Neighborhood Environments: Disparities in Access to Healthy Foods in the US. American Journal of Preventive Medicine. 36 (1).
- (7) Watters, C. A., Sorensen, J., Fiala, A., & Wismer, W. (2003). Exploring patient satisfaction with foodservice through focus groups and meal rounds. Journal of the American Dietetic Association, 103(10), 1347-1349.
- (8) Winston, J., Johnson, C., & Wilson, S. (2008). Barriers to healthy eating by National Health Service (NHS) hospital doctors in the hospital setting: Results of a cross-sectional survey. BMC Research Notes, 1(1), 1-69
- (9) Winston, J., Johnson, C., & Wilson, S. (2008). Barriers to healthy eating by National Health Service (NHS) hospital doctors in the hospital setting: Results of a cross-sectional survey. BMC Research Notes, 1(1), 1-69

- (10) Preventing Noncommunicable Diseases in the Workplace through Diet and Physical Activity. (2008). Retrieved June 28, 2016, from [http://apps.who.int/iris/bitstream/10665/43825/1/9789241596329\\_eng.pdf](http://apps.who.int/iris/bitstream/10665/43825/1/9789241596329_eng.pdf)
- (11) Dawn Thilmany McFadden, David Conner, Steven Deller, David Hughes, Ken Meter, Alfonso Morales, Todd Schmidt, David Swenson, Allie Bauman, Megan Phillips Goldenberg, Rebecca Hill, Becca B.R. Jablonski, and Debra Tropp. The Economics of Local Food Systems: A Toolkit to Guide Community Discussions, Assessments, and Choices. USDA, AMS. March 2016.
- (12) Florence Becot and David Conner. (2014). Measuring the Economic Impact of Fletcher Allen Local Food Procurement. Center for Rural Studies at the University of Vermont. Burlington, VT.
- (13) USDA. (2009). Access to Affordable and Nutritious Food: Measuring and Understanding Food Deserts and Their Consequences. USDA, Economic Research Service.
- (14) Walker, R.E.; Keane, C.R. and Burke, J.G. (2010). Disparities and Access to Healthy Food in The United States: A Review of the Food Desert Literature. *Health and Place*. 16:876-884.
- (15) Readmissions Reduction Program (HRRP). (2016). Retrieved July 01, 2016, from <https://www.cms.gov/medicare/medicare-fee-for-service-payment/acuteinpatientpps/readmissions-reduction-program.html>
- (16) Beattie, S., & Burrough, B. (n.d.). Reducing Readmissions with Nutrition Management. *Mom's Meals Nourish Care*. Retrieved July 1, 2016.
- (17) Agarwal, E., Ferguson, M., Banks, M., Batterham, M., Bauer, J., Capra, S., & Isenring, E. (2013). Malnutrition and poor food intake are associated with prolonged hospital stay, frequent readmissions, and greater in-hospital mortality: Results from the Nutrition Care Day Survey 2010. *Clinical Nutrition*, 32(5), 737-745. Retrieved July 5, 2016.
- (18) Ming Ye, Jeremy Beach, Jonathan Martin, and Ambikaipakan Senthilselvan. (2013). Occupational Pesticide Exposure and Respiratory Health. *Int J Environ Res Public Health* 10 (12): 6442-6471.
- (19) Koutros S, Alavanja MC, Lubin JH, et al. (2010). An update of cancer incidence in the Agricultural Health Study. *Journal of Occupational and Environmental Medicine*. 52(11):1098-1105.
- (20) Oxfam America. (2004). *Like Machines in the Fields: Workers without Rights in American Agriculture*. Oxfam America.
- (21) Maya Nadimpalli, Jessica Rinsky, Steve Wing Devon Hall, Jill Stewart et al. (2014). Persistence of livestock-associated antibiotic resistant *Staphylococcus aureus* among industrial hog operation works in North Carolina over 14 days. *Occup Environ Med*.
- (22) Carrie Hribar. (2010). *Understanding Concentrated Animal Feeding Operations and Their Impact on Communities*. National Association of Local Boards of Health. Bowling Green, OH.
- (23) US Department of Labor (2008). Fact Sheet #12: Agricultural Employers Under the Fair Labor Standard Act. [https://www.dol.gov/whd/ag/ag\\_flsa.htm](https://www.dol.gov/whd/ag/ag_flsa.htm)
- (24) Center for Farmworker Health (2014). *A Profile of Migrant Health*. <http://www.ncfh.org/fact-sheets--research.html> Last Accessed 9.4.2016.



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This resource was produced by Health Care Without Harm's national Healthy Food in Health Care program, which harnesses the purchasing power and expertise of the health care sector to advance the development of a sustainable food system.

Visit [www.healthyfoodinhealthcare.org](http://www.healthyfoodinhealthcare.org) for more information.

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