

# UTILIZATION OF COMMUNITY BENEFITS TO IMPROVE HEALTHY FOOD ACCESS IN MASSACHUSETTS



Health Care Without Harm  
Healthy Food in Health Care



Technical assistance provided by



Health Resources in Action  
*Advancing Public Health and Medical Research*

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## About Health Care Without Harm

Health Care Without Harm seeks to transform the health sector worldwide, without compromising patient safety or care, so that it becomes ecologically sustainable and a leading advocate for environmental health and justice. It is an international coalition of hospitals and health care systems, medical professionals, community groups, health-affected constituencies, labor unions, environmental and environmental health organizations, and religious groups.

Health Care Without Harm's national Healthy Food in Health Care (HFHC) program harnesses the purchasing power and expertise of the health care sector to advance the development of a sustainable food system. Through advocacy and education HFHC motivates facilities to implement programs that connect all aspects of the food system with health. HFHC catalyzes sustainable procurement efforts, creates clinician advocates, and inspires health care institutions to become leaders in shaping a food system that supports prevention-based health care.

## About Health Resources in Action

Health Resources in Action, Inc. (HRiA) is a national nonprofit organization located in Boston, MA with a mission to help people live healthier lives and build healthy communities through prevention, health promotion, policy, and research. For over fifty years, HRiA has been a leader in working with and across multiple sectors and engaging non-traditional partners to develop innovative strategies and approaches to advance healthy communities and medical discoveries. With a conceptual framework that includes a deep understanding of the social determinants of health, HRiA works with individual hospitals and health care systems to conduct rigorous Community Health Needs Assessments and data-driven Strategic Implementation Plans. These innovative health improvement plans highlight and measure specific evidence-based/informed approaches that address health inequities and lead to improved health outcomes for all residents.

## About Massachusetts Convergence Partnership

The Massachusetts Convergence Partnership is a public/private collaborative with a vision of a Massachusetts where people have equitable access to environments that lead to good health, economic well-being, and long life expectancy. This multi-funder, cross-sector collaborative's mission is to increase the number of healthy people living in healthy places by leveraging resources towards system and environment change.

## FOREWARD

As the Institute of Medicine noted in a report on population health improvement, “One of the most important potential sources of community support created by the Affordable Care Act may be the community benefit obligations of nonprofit hospitals that seek federal tax exempt status.”<sup>i</sup> Yet, a 2009 study found that while almost three quarters of community benefit funds are used to help pay for care for the uninsured or underinsured, funding for community health improvement and community building activities represented approximately 5% of community benefit activities.<sup>ii</sup> As the Trust for America’s Health states in a 2013 report, “the new requirements provide an opportunity for nonprofit hospitals across the country to re-evaluate and reconsider their current approach to community benefit programming and assess how increased attention to community health improvement and prevention can help improve the health of their patients and lower health care costs.”<sup>iii</sup>

With the passage of the Affordable Care Act, there is an unprecedented opportunity for nonprofit hospitals to work collaboratively with a diversity of community leaders and stakeholders to utilize data to identify community priorities and develop strategic implementation plans with clear goals, measurable objectives, and actionable strategies. In December 2014, the Internal Revenue Service and the Treasury Department published final rules implementing the Affordable Care Act’s requirements for tax-exempt hospitals. The rules state that hospitals may also consider “...the need to prevent illness, to *ensure adequate nutrition*, or to address social, behavioral, and environmental factors that influence health in the community.”<sup>iv</sup> The specific mention of “nutrition” affirms the idea that utilizing community benefits resources to address barriers and improve healthy food access are viable approaches to improve population health.

Over the past few years, Health Resources in Action has had the opportunity to work with hospital leaders and key community stakeholders around the country to conduct community health improvement efforts. One of the common priorities that has emerged in each one of these plans – whether in urban, suburban, or rural geographies – is the issue of obesity and its related conditions. As nonprofit hospitals begin to engage in their next round of community health improvement efforts, the main purpose of Health Care Without Harm’s report *Utilization of Community Benefits to Improve Healthy Food Access in Massachusetts* is to provide hospital leaders and community stakeholders with an overview of the ways in which hospitals are *using* or *could be using* their community benefit resources to address food access issues within the Commonwealth. Building on our rich history of collaboration among hospitals and the broader community, our hope is that the information provided in this study – the data sets, the innovative policy and practice approaches, the indicators, and recommendations – will provide key decision-makers and

other community leaders with the information, tools, and resources they need to identify and/or sustain efforts to address food access and the community food environment as a preventive strategy for diet-related disease like diabetes, obesity, and cardiovascular disease.

Steve Ridini, EdD  
Vice President, Community Health Division  
Health Resources in Action

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## Researcher & Author

Jennifer Obadia, PhD, Health Care Without Harm

## Technical Assistance

Stacia Clinton, RD, LDN, Health Care Without Harm

Steve Ridini, EdD, Health Resources in Action

## Support

The Massachusetts Convergence Partnership

## Participants

Baystate Medical Center

Beth Israel Deaconess Medical Center Boston

Beth Israel Deaconess Hospital Plymouth (previously Jordan Hospital)

Bowdoin Street Health Center

Boston Children's Hospital

Fairview Hospital

Hallmark Health System

Healthy Chelsea

Holy Family Hospital

Joseph M Smith Community Health Center

Lahey Hospital and Medical Center

Massachusetts Attorney General's Office

Massachusetts General Hospital

Saint Elizabeth's Medical Center

The Dimock Center

UMass Memorial Medical Center

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## ACRONYMS

ACA	Affordable Care Act
AGO	Attorney General's Office
BIDMC	Beth Israel Deaconess Medical Center
BMI	Body Mass Index
CDC	Centers for Disease Control and Prevention
CHD	Coronary Heart Disease
CHNA	Community Health Needs Assessment
CPBR	Community-Based Participatory Research
CVD	Cardiovascular Disease
DVCP	Double Value Coupon Program
FAP	Financial Assistance Policy
FEA	Food Environment Atlas
FVRx	Fruit and Vegetable Prescription Program
FY	Fiscal Year
HCWH	Health Care Without Harm
HFHC	Healthy Food in Health Care
IRS	Internal Revenue Service
MDPH	Massachusetts Department of Public Health
MIGHTY	Moving, Improving and Gaining Health Together at the Y
NPRM	Notice of Proposed Rulemaking
PSE	Policy, Systems and Environment
SHIP	State Health Improvement Plan
SNAP	Supplemental Nutrition Assistance Program (previously Food Stamps)
USDA	United States Department of Agriculture
WIC	Special Supplemental Nutrition Assistance Program for Women, Infants and Children



# EXECUTIVE SUMMARY

*Utilization of Community Benefits to Improve Healthy Food Access in Massachusetts* is an outgrowth of an Eastern Massachusetts workgroup of Health Care Without Harm. This group, composed of hospital leaders and nonprofit organizations, felt there was a strong need to understand the ways in which hospitals across the Commonwealth were engaged in efforts to improve healthy food access for vulnerable communities as a strategy to address chronic diet-related disease. Three objectives were developed to meet this goal.

1. Provide an overview of the ways in which hospitals use their community benefit resources to address healthy food access.
2. Develop an understanding of the types of food access programs that comply with community benefit regulations at the federal and state levels.
3. Develop an understanding of the ways in which hospitals are measuring the impact of food access programs on health outcomes.

To meet the abovementioned goals, a review was conducted of all fiscal year (FY) 2013 community benefit reports submitted to the Massachusetts Attorney General's Office (AGO). This provided an overview of the landscape of relevant activities. Eleven facilities were then interviewed to provide a deeper understanding of their programming and the measures used to evaluate program impact. Additionally, community health needs assessments (CHNAs) were reviewed for the 11 interview facilities to understand how they integrated food security and food access. The research process also included a review of the rules and requirements for compliance with federal and state community benefit standards and an interview with the Massachusetts AGO.

## Community Benefit Standards

Federal community benefit standards have been in place since 1969. However, they underwent a significant transformation with the passage of the Affordable Care Act (ACA) in 2010. Nonprofit hospitals are now required to conduct a CHNA every three years. They must include community input in the assessment process and make the assessment publicly available. Additionally, nonprofit hospitals are required to identify priority health needs, based on the results of the CHNA and develop a plan to address those needs. Finally, hospitals must submit an annual report of their community benefit activities that is required to include an evaluation of their work.

In addition to establishing a framework for how to assess community needs, the new rules acknowledge that community benefits are more than provision of financial assistance to low-income patients and improved access to care. The final rule, published in December 2014, states that hospitals may also consider "...the need to prevent illness, to ensure

adequate nutrition, or to address social, behavioral, and environmental factors that influence health in the community.”<sup>v</sup> The specific incorporation of “nutrition” signals support for the idea that improving the community food environment and addressing barriers to healthy food access are viable strategies to improve population health.

## Findings

All of the interview hospitals identified diet-related disease as a primary health challenge for their community and two of the 11 facilities specifically noted healthy eating as a health challenge. Despite awareness of the struggle for many community members to eat a healthy diet, facilities were inconsistent in their inclusion of questions about food access and food security in their CHNAs.

A total of 80 nutrition and healthy food access activities were reported in FY 2013. These included activities that improved direct access to food, education programs, policy and systems oriented activities, diet and exercise interventions, and grant making activities. Despite the widespread investment in these types of activities, there was little evaluation of their impact. Most programs focused on operational measures such as the number of people served or amount of food provided. Only a small number of programs conducted evaluations that included outcome measures such as body mass index (BMI) or A1c (blood glucose) levels.

## Recommendations

It is recommended that hospitals incorporate a more robust evaluation of the community food environment into their CHNAs. This can be done through the use of secondary data sets such as the United States Department of Agriculture’s (USDA) Food Access Research Atlas and Food Environment Atlas and Map the Meal Gap by Feeding America. Further nuance at the neighborhood level can be provided through community surveys, focus groups, and key informant interviews. The report provides a series of questions to consider for inclusion in primary data collection.

There are a variety of healthy food access initiatives that may be successful in communities throughout Massachusetts. Included in this report are three recommendations for activities that are appropriate for most communities in which diet-related disease is a priority health issue. Priorities from the state health improvement plan (SHIP) were overlaid with the tiers of impact described in the Health Improvement Pyramid developed by the Centers for Disease Control and Prevention (CDC) to develop specific recommendations for Massachusetts hospitals.

1. Food Security Screenings. It is recommended that hospitals routinely screen patients for food security and connect patients in need with community resources.
2. Development of Healthy Retail Options. Hospitals may consider partnering with community groups to invest in the development of healthy retail options to increase food access and stimulate job creation. When possible, such initiatives should focus

on incorporation of local food businesses and producers to further the economic impact of such initiatives.

3. Fruit and Vegetable Incentives. Hospitals may consider development of incentive programs that provide financial assistance to low-income individuals for the purchase of fresh, and when possible, local fruits and vegetables.

Finally, to enhance program evaluation it is recommended that facilities implementing similar programs collaborate around assessment by using the same assessment tools. This approach will lead to a larger sample size and increase the strength of findings.

Additionally, a community-based participatory research approach is recommended to ensure that evaluation tools will be accepted by study participants and that the reliable data will be collected.

# INTRODUCTION

Health Care Without Harm (HCWH) facilitates seven Healthy Food in Health Care workgroups throughout the six New England states. The Eastern Massachusetts workgroup hosts a Community Food Outreach subcommittee. This group represents hospital leaders and nonprofit organizations working to improve healthy food access. From the first meetings in early 2014 the group recognized the need for a better understanding of the ways in which hospitals were engaged in activities related to healthy food access and hunger in Massachusetts. This research project was developed to address that need.

A focus was placed on identifying the ways that hospitals use their community benefit resources to address healthy food access and the community food environment as a strategy to improve community health. Community benefit programs were selected as the focal point for this work because they are a critical point of interaction between hospitals and their communities and because information about their activities is publically available. It is important to note that hospitals may implement food access related programs through other departments that are not captured in their community benefits reports. These activities are outside the scope of this report.

Additionally, a focus was placed on community benefits because changes through the Affordable Care Act (ACA) have created an opportunity to shift the ways in which hospitals use their resources. According to the Congressional Budget Office, the ACA will lead to insurance coverage for an additional 26 million nonelderly Americans by 2017.<sup>vi</sup> This increase in coverage is anticipated to reduce the need for financial assistance provided by hospitals – often referred to as charity care. Simultaneously, the Internal Revenue Service (IRS) rules governing implementation of the ACA specify the need to address the social, environmental and behavioral factors that influence health. This combination of factors, has led some public health experts to suggest that as the need for charity care is reduced, hospitals may shift spending toward preventive services and community programs. Because diet-related chronic diseases such as obesity, diabetes and heart disease place a large financial burden on patient services, hospitals may be inclined to focus on the prevention and management of these diseases through improved healthy food access.

This report aims to inform the health care and food systems sectors about the emerging opportunities for collaboration around the elimination of acute hunger and development of a sustainable regional food system. To this end, the primary goal of this project was to *provide an overview of the ways that hospitals use their community benefit resources to address food access as a preventive strategy for diet-related disease such as diabetes, obesity and cardiovascular disease.* The purpose of this overview is to inform future needs assessments and program development related to healthy food access. The secondary goals of this project were to:

1. Develop an understanding of the types of food access programs that comply with community benefit regulations at the federal and state level.
2. Develop an understanding of the ways in which hospitals are measuring the impact of food access programs on health outcomes.

This report is divided into three sections. Section One provides an understanding of the ways in which food access impacts diet-related disease. It begins with the status of chronic diseases in Massachusetts and the relationship between these diseases and diet. Next it describes the impact of food access and the community food environment on diet. This section concludes with an outline of the primary requirements of the federal community benefit standard and the guidance provided by the state AGO. Section Two provides an overview of the methods used for this research project and the study findings. It includes an overview of how hospitals conduct their CHNAs, the types of food access programs being implemented, and the ways in which these programs are being evaluated. Section Three offers a discussion of the findings including a series of recommendations. These recommendations focus on ways that hospitals can leverage their resources to provide the greatest benefit to the people of Massachusetts.

**SECTION ONE**  
**UNDERSTANDING THE RELATIONSHIP BETWEEN FOOD ACCESS**  
**AND CHRONIC DISEASE AND THE OPPORTUNITY FOR**  
**COMMUNITY BENEFITS**

## Diet-Related Disease in Massachusetts

Chronic diet-related diseases such as obesity, diabetes, and cardiovascular disease impact over half of the population in Massachusetts and place a significant financial strain on the health care system. The wide-spread burden of these diseases on public health has made their prevention and management a priority for the Massachusetts Department of Public Health (MDPH) and many local health departments in the Commonwealth.<sup>i</sup>

Fifty-nine percent of adults in Massachusetts are overweight or obese. Additionally, 25% of high school youth and a third of children ages two to five are overweight or at risk of becoming overweight.<sup>ii</sup> Furthermore, adults who are obese are three times more likely to be diagnosed with other diet-related illnesses like diabetes or high blood pressure.<sup>iii</sup> While it is difficult to assess the cost of obesity, one estimate placed obesity-related medical expenses in Massachusetts at nearly \$3.5 billion in 2011.<sup>iv</sup>

According to the most recent data available from MDPH, 7.5% of the population in Massachusetts has been diagnosed with diabetes and an additional 5.5% has been diagnosed as pre-diabetic.<sup>v</sup> On average, health care costs for individuals with diabetes are 2.3 times higher than for those without the disease. One estimate placed the annual expense of diabetes in Massachusetts at \$4.3 billion in 2011.<sup>vi</sup>

Cardiovascular disease (CVD) is responsible for one in three deaths in Massachusetts.<sup>vii</sup> Major risk factors associated with CVD include hypertension, high cholesterol, diabetes, obesity, and tobacco use. However, the most common risk factor is poor diet.<sup>viii</sup> Similar to diabetes and obesity, CVD is extremely costly to the Commonwealth, with estimated costs of \$3.4 billion in 2007.<sup>ix</sup> Costs for CVD are expected to continue to rise and are estimated to reach over \$800 billion nation-wide by 2030, with the cost of treating high blood pressure expected to be the most expensive component.<sup>x</sup>

In addition to the millions of individuals across Massachusetts who suffer from each of these diseases independently, many are impacted by two or more of these disorders. Metabolic syndrome is the presence of one or more of the following chronic conditions: high blood pressure, high blood sugar, excess body fat around the waist, and abnormal cholesterol levels. The presence of these conditions in combination increases the risk of serious disease and poor outcomes.<sup>xi</sup>

The wide-spread impact of these chronic diseases across the population makes them a top priority for the public health community, including acute and primary care service providers who see the damaging impact they have on patients' quality of life. Fortunately, there is strong evidence that these chronic diseases can be managed, and in many cases prevented, through proper diet and exercise.

Overweight and obesity are, in most cases, the result of an imbalance between calorie intake and output. To address this imbalance, the Dietary Guidelines for Americans recommend an increase of physical activity to increase calorie expenditure and a dietary

shift toward low-calorie, nutrient-dense foods.<sup>xii</sup> This typically means an increase in fruits, vegetables, and whole grains and a decrease in nutrient-poor calories from sugar sweetened beverages and high fat foods.

The evidence supporting the relationship between poor diet and disease is not limited to obesity. It includes heart disease and diabetes as well. One meta-analysis of nine cohort studies found a significant inverse relationship between fruit and vegetable consumption and coronary heart disease (CHD). Based on a pooled risk model, each additional daily serving of fruits and vegetables decreased the risk of CHD by 4% and 7% respectively.<sup>xiii</sup> Another cohort study of over 43,000 men found a significant inverse relationship between dietary fiber and heart disease. Controlling for other known risk factors for heart disease (smoking, physical inactivity, etc) the study found that a 10 gram increase in dietary fiber corresponded to a relative risk for heart attack of 0.81.<sup>xiv</sup> In other words, individuals who consumed an additional 10 grams of dietary fiber were 19% less likely to have a heart attack.

There is similarly strong evidence to support the importance of a balanced diet to prevent and manage diabetes. Development of diabetes is strongly correlated with overweight and obesity, which as discussed above, can be regulated with diet and exercise. Furthermore, there is evidence that consumption of fruits and vegetables can play a role in diabetes prevention and/ or management due to their high levels of magnesium, which is known to aid in the metabolism of glucose.<sup>xv</sup>

Due to the strong relationships between chronic disease and diet, many interventions have focused on the dietary patterns of high risk individuals. Unfortunately, as of 2011, only 18.8% of adults in Massachusetts consumed the recommended five daily servings of fruits and vegetables leaving significant room for improvement.<sup>xvi</sup> In recent years the public health community has begun to explore environmental factors that influence food access in order to improve diet and health outcomes instead of focusing on consumption at the individual level.

## Food Access and the Community Food Environment

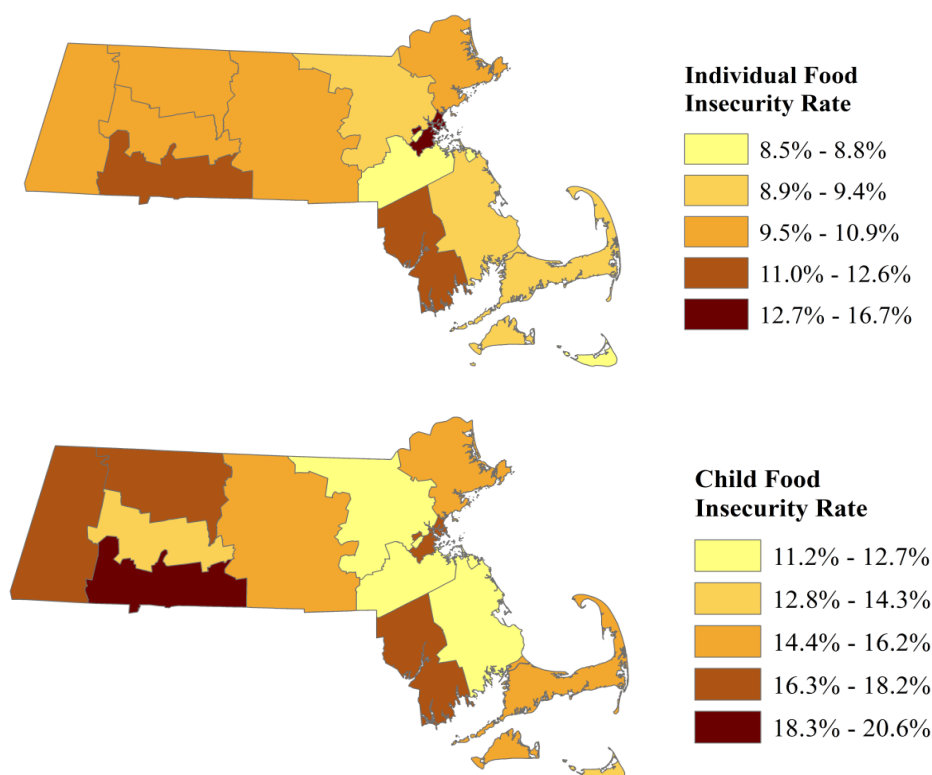
The shift in focus from individual behavior to community interventions led to a national assessment of food access by the USDA. They term communities with poor food access “food deserts” and define them as areas “with limited access to affordable and nutritious food, particularly such an area composed of predominantly lower-income neighborhoods and communities.”<sup>xvii</sup> Under this framework, nutritious food is defined as a basket of diverse food options sufficient to meet the Dietary Guidelines for Americans. This is typically measured by the presence of a full-service supermarket or large grocery, rather than individual food items. Affordability is determined by the Low-Cost Food Plan, which concludes that a family of four (2 adults and 2 children) can purchase a nutritious diet for approximately \$175 a week.<sup>xviii</sup> In addition to considering the presence of a full-service market and affordability of the products sold, the concept of food access incorporates the ability of individuals to physically access the market and recognizes that this requires



reliable access to a vehicle in most instances.<sup>xix</sup> Finally, the cultural appropriateness of food is an important element of food access. For example, in neighborhoods with large immigrant populations, it may be most effective to ensure availability of healthy food items from their countries of origin instead of expecting these communities to accept the fruits, vegetables and other food items that are most common in the American diet.

The focus on improving the community food environment has emerged as the understanding of the inequities in food access has come to light. According to the USDA, nearly 30 million people live in low-income communities without access to a full-service supermarket.<sup>xx</sup> Low-income zip codes have been found to have 25% fewer full-service supermarkets than middle-income zip codes.<sup>xxi</sup> This uneven distribution of supermarkets has the greatest impact on low-income communities of color. A national cross-sectional study found that low-income, urban communities of color have fewer supermarkets than low- and high-income white communities. The same study found that zip codes with predominantly black residents have half as many supermarkets as zip codes with predominantly white residents, regardless of income.<sup>xxii</sup> Furthermore, supermarkets in low-income communities have been found to charge more than their counterparts in middle-income communities for the same products.<sup>xxiii</sup>

**Figure 1. Food Insecurity Rates in Massachusetts, 2012**



Source: West et al., 2014

In addition to limited healthy food access, low-income individuals may also suffer from acute food insecurity, or hunger. In 2012, 11.9% of the population in Massachusetts was food insecure. Among children the rate rose to 16.6%.<sup>xxiv</sup> As discussed above, food insecure individuals are more likely to suffer from the chronic diseases.<sup>xxv</sup>

## Demonstrated Efficacy of Common Healthy Food Access Interventions

Based on the understanding of the relationship between food access and diet-related disease a variety of community food environment interventions have been developed. The majority of these programs are aimed at cost and/ or physical access barriers to purchasing healthy food. Below is a brief overview of the literature on these types of interventions, with a focus on incentive programs, fruit and vegetable prescriptions (FVRx), healthy corner store initiatives and development of full-service supermarkets.

### *Cost Barriers*

The use of financial incentives to increase the affordability of produce for Supplemental Nutrition Assistance Program (SNAP, formerly known as food stamps) recipients has become increasingly popular over the last decade. These programs, often referred to as Double Value Coupon Programs (DVCP),<sup>xxvi</sup> offer different levels of matching dollars depending on where they are implemented. For example, New York City provides a two dollar match for every five SNAP dollars spent, whereas Boston offers a dollar for dollar match up to ten dollars. The use of these incentive dollars is typically restricted to farmers markets in order to support development of a sustainable regional food system.

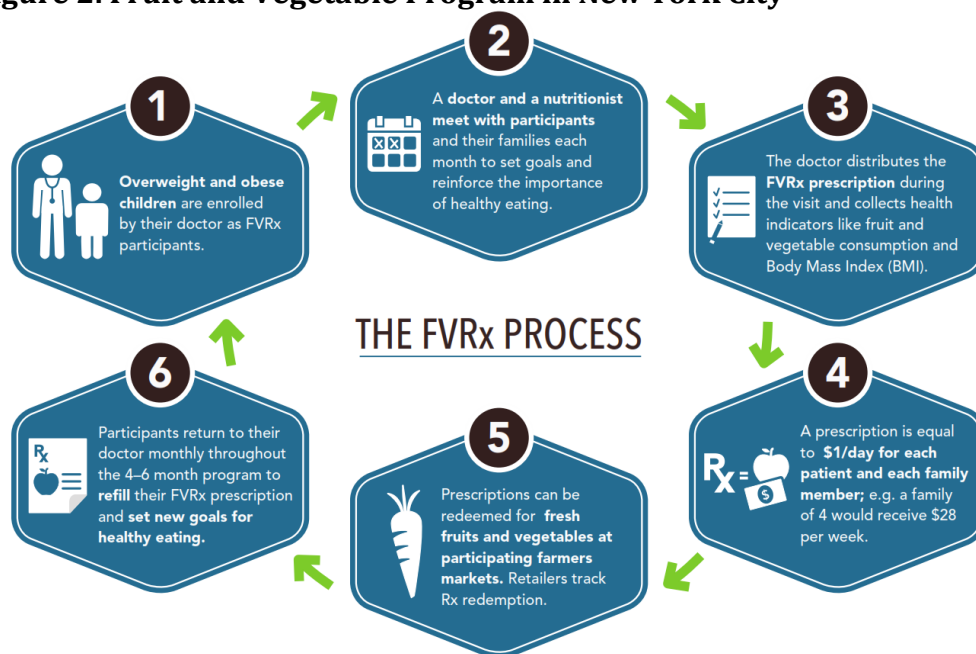
An evaluation of the Boston Bounty Bucks program, a DVCP in Boston, found that those who used the program consumed more vegetables than SNAP recipients who did not participate in the incentive program.<sup>xxvii</sup> Another study, which surveyed over 1,200 DVCP participants at 225 farmers markets, found that 87% of survey respondents felt the program increased or greatly increased their consumption of fresh fruits and vegetables.<sup>xxviii</sup> Additionally, an evaluation of the Healthy Incentives Pilot in Western Massachusetts found that participants consumed 26% more fruits and vegetables daily than non-participants.<sup>xxix</sup> This program provided 30 cents for each dollar used on the purchase of fresh, frozen or canned fruits and vegetables at any certified SNAP retailer in the study area.

Fruit and vegetable prescription programs, similar to SNAP incentive programs, provide low-income individuals with dollars to be spent on the purchase of fruits and vegetables. These prescription programs differ in that they do not require the recipient to spend any of their own money to earn the prescription dollars, and they are not restricted to SNAP recipients. Additionally, they are typically administered in a clinical setting by a physician, and coupled with education and counseling.

One such program was piloted by Wholesome Wave at two hospitals in New York City in 2013 (Figure 2). The evaluation of the New York FVRx program found that 97% of

participants reported that their consumption of fruits and vegetables increased “some” or “a lot”. And while reduction of BMI was not an initial goal of the program, the evaluation found that 40% of participants had a decrease in BMI over the program period.<sup>xxx</sup> Similar to DVCPs, these prescription programs are coupled with farmers markets in order to support growth in the local food system and support farmers’ livelihoods.

**Figure 2. Fruit and Vegetable Program in New York City**



Source: Wholesome Wave, 2013

### *Physical Access Barriers*

Another strategy for improving healthy food access is to reduce physical barriers by increasing the availability of healthy food options in corner stores and supporting development of full-service supermarkets. Corner stores have been targeted as intervention points because of their prevalence in low-income urban neighborhoods that lack other healthy retail options. Corner stores are not typically used for large grocery trips, but are frequented for “fill-in” shopping. One study of the use of corner stores in New Orleans found that customers visited corner stores an average of 12 times a month.<sup>xxxi</sup>

The limited availability of fresh produce and other healthful items<sup>xxxii</sup> at corner stores make it difficult to acquire such items in low-income communities without full-service groceries. The Food Trust, manages one of the most robust healthy corner store programs in the country with a network of 660 stores. Through an evaluation of point of sales data, they found that 35% of all sales, in participating stores, were healthy items that had been introduced and/ or approved by the program. Additionally, they found that produce sales in participating corner stores increased by 60%.<sup>xxxiii</sup> Evaluation of the program’s impact on diet is limited, but the sales data is promising.

Development of full-service supermarkets is considered the gold standard for improvement of the community food environment because of their indirect impact on diet through improved food access and job creation and poverty reduction. One study estimated that every 10,000 square feet of retail grocery space creates 24 new jobs.<sup>xxxiv</sup> Based on this estimate, an average sized full-service supermarket may generate 125 – 150 full-time jobs.<sup>xxxv</sup> The job creation effect of new retail outlets is of critical importance in addressing the underlying poverty that impacts food access and a host of other health issues. With regard to food access, multiple studies have found that the presence of supermarkets is associated with fruit and vegetable consumption. According to a literature review conducted by The Food Trust over 75 studies have examined this relationship in the last three years, the majority of which found a positive relationship between access to food retail outlets with healthy food options and fruit and vegetable consumption.<sup>xxxvi</sup>

Pennsylvania was the first state to support the development of supermarkets in low-income communities through the Fresh Food Financing Initiative. Established in 2006, the initiative provided grants and loans for the development of healthy food retailers. The state seeded the program with a \$30 million grant program that leveraged an additional \$145 million in investments for the development of 88 independent grocery stores and other food outlets.<sup>xxxvii</sup> This investment is estimated to have created approximately 5,000 jobs.<sup>xxxviii</sup>

In 2011, the federal government launched its Health Food Financing Initiative to provide grants and loans for the development of healthy retail options in food deserts.<sup>xxxix</sup> In three years the program has distributed over \$500 million to support healthy retail development. These funds are available for full-service supermarkets, co-operatives, food hubs and other retail options.<sup>xl</sup> In 2013, Massachusetts passed the Food Innovation Trust Fund, a similar initiative to support healthy retail development in underserved communities. At the time of this report funding had not been allocated to support the Fund.

## Federal and State Community Benefit Standards

The IRS first established a community benefit standard in 1969 as a requirement for tax-exemption of nonprofit hospitals.<sup>xli</sup> Throughout the decades between the development of the community benefit standard and passage of the ACA concerns arose about the lack of specificity and enforceability of this requirement. In an attempt to provide clarity the ACA established criteria for four requirements for tax-exempt hospitals, including: (1) the community health needs assessment and implementation plan, (2) financial assistance policy, (3) limitations on charges and (4) billing and collections practices.<sup>xlii</sup> This report focuses on the first of these components at both the federal and state levels.

On April 5, 2013 the IRS issued a notice of proposed rulemaking (NPRM)<sup>xliii</sup> on the obligations of nonprofit hospitals to comply with the community benefits standard. After significant public input, a final rule was issued on December 31, 2014.<sup>xliv</sup> This rule provides clarity on requirements for nonprofit hospitals regarding implementation of their CHNA. First, it established the requirement that hospitals must conduct CHNAs at least every three

years. It also requires the development and adoption of an implementation strategy that meets the needs identified in the assessment.

Next the rule outlines key criteria for the assessment. It must define the hospital community. In doing so a hospital should consider geographic area served, target populations and its principal functions. The CHNA must assess the needs of the community, consider input from the affected community, and must make the assessment available to the public.<sup>xlv</sup> Of note is the fact that the final rule incorporated language supporting the use of community benefit resources for activities beyond improved access to care. The final rule states that health needs identified through a CHNA may include “...the need to prevent illness, to ensure adequate nutrition, or to address social, behavioral, and environmental factors that influence health in the community.”<sup>xlvi</sup> This language signals an understanding of the importance of prevention to address the health of communities. The specific incorporation of “nutrition” can be read to imply support for the idea that improving the community food environment and addressing barriers to healthy food access are viable strategies to improve population health.

The rule does not offer guidance on how to integrate the community into the assessment process. However, Rosenbaum, a professor of health law at George Washington University, offers principles for community engagement to “increase the likelihood of well-targeted initiatives that address the needs of communities and improve the health of their residents.”<sup>xlvii</sup> These principles include development of multi-sector collaborations to enable a sense of shared ownership of the problem and solutions, engagement of diverse stakeholders, transparency, and ongoing communication throughout the implementation and monitoring and evaluation stages.

The IRS rule also describes requirements for the implementation strategy. Nonprofit hospitals must identify which community needs will be addressed and explain why other identified needs will not be addressed. For those needs that will be addressed hospitals must state which actions will be taken, the anticipated impact and an evaluation method. The implementation plan must also state the resources that will be allocated and any planned collaborations with community organizations, government entities or other partners.<sup>xlviii</sup> The final rule placed a deeper emphasis on evaluation than the proposed rule stating that hospitals must develop an evaluation strategy as opposed to citing a plan to evaluate.

Activities may be reported as a community benefit if they meet one or more of the following objectives: (1) improved access to care, (2) enhanced public health, (3) advanced generalizable knowledge, and (4) relieve a government burden.<sup>xlix</sup> Community benefit activities may NOT be implemented for marketing purposes, restricted to hospital employees, required for licensure or accreditation, or unrelated to the mission of the organization.<sup>1</sup>

The Massachusetts AGO first developed guidance for nonprofit hospitals and health systems around the implementation of community benefits in 1994. The guidance was last

revised in 2008.<sup>li</sup> The AGO guidelines mirror the federal criteria in that hospitals are required to conduct a CHNA every three years to review unmet health needs of a community by analyzing public health data and community input. Unlike the federal rule, the AGO guidance provides more detail on components of the implementation plan, with a focus on (1) the target population, (2) programs, and (3) budget.<sup>lii</sup> Community health needs assessment and annual implementation plans are to be reported to the AGO and made publicly available.

The AGO guidelines state that a hospital's primary service area is the starting point for determining their target population. From there the hospital must consider where there are disadvantaged populations such as the poor or uninsured with unmet health needs. Only programs that address the needs of target populations may be reported as community benefits.<sup>liii</sup>

The state guidelines also encourage hospitals to align their programs with the state-wide needs identified by the Executive Office of Health and Human Services in 2007. In particular a focus on the following state-wide needs are recommended: support of health care reform, chronic disease management in disadvantaged populations, reduction of health disparities, and promotion of wellness among vulnerable populations. Examples of the types of programs that may address these needs include health education, health screenings, mobile vans that provide direct services, low margin services offered in response to a community need, wellness programs and expanded prescription drug programs.<sup>liv</sup> An interview with staff from the AGO further emphasized the desire to connect community benefit programs with state-wide goals. It was recommended that hospitals consider relevant goals established in the SHIP when determining which health needs to prioritize and how to address those needs.<sup>lv</sup> These goals are discussed in detail in Section Three of this report.

Further, the AGO states that measurable goals should be set for community benefit programs. Programs are expected to have short-term operational goals such as the number of program participants or the amount of product supplied. In addition, programs are expected to have longer-term outcome goals that focus on the improvement of health indicators. Staff at the AGO indicated an understanding that many programs will take more than three years to demonstrate<sup>lvi</sup> an impact on the health of a target group and even longer to impact broader community health. Hospitals are still encouraged to report the expected time frame for outcomes and to monitor and evaluate programs on an ongoing basis.<sup>lvii</sup>

Finally, the AGO guidance document discusses budget allocations for community benefit programs. They ask hospitals to make a "good faith effort" to measure the expenditures and administrative costs of their programs. However, there is no requirement for a minimum expenditure.<sup>lviii</sup>

## Changes to Community Benefit Standards May Facilitate Improvement in Community Food Environments

The final rules for tax-exempt hospitals under the ACA combined requirements for the development and distribution of financial assistance policies (FAP), billing and debt collection practices, and community health needs assessments. Rosenbaum highlights that the inclusion of FAPs and CHNAs under the same rule underscores their important relationship. She states that because the “expanded obligations [under the ACA] address the scope and nature of hospitals’ community benefit obligations under 501(c)(3), it is likely that over time, these expanded obligations will begin to influence how hospitals invest in their communities, particularly in the areas of financial assistance for medically indigent population[s] and community health improvement.”<sup>lix</sup> In line with Rosenbaum’s comments, many public health experts anticipate that the relationship between financial assistance and community benefits will lead to increased resources begin allocated toward health prevention and community-based activities.

A shift in resource allocation from financial assistance toward community-based activities would be a significant shift from expenditure patterns prior to passage of the ACA. A report by the Trust for America’s Health stated that 72% of community benefit resources were used to help pay for care for the uninsured or underinsured in 2009.<sup>lx</sup> A joint report by John’s Hopkins University and the Union of Concerned Scientists estimated that up to 85% of community benefit dollars were used to subsidize patient care.<sup>lxi</sup> Both reports estimated that 5% of community benefit resources were allocated to health improvement and community building activities.

Massachusetts may be among the first states to see an increased investment in community-based initiatives to prevent illness and promote health. The first in the nation to implement health care reform, Massachusetts has seen a significant reduction in the uninsured. From 2006, when the state enacted universal health care, to 2009 more than 400,000 residents were able to access health insurance for the first time. When the ACA went into effect, an additional 200,000 residents enrolled in health insurance, bringing the total number of uninsured in Massachusetts under 1% of the population in 2014.<sup>lxii</sup> Near universal coverage in Massachusetts does not mean that hospitals will no longer need to provide charity care for individuals unable to cover the full cost of their health services. However, it does likely mean that the need for charity care will be reduced in the coming years.

Hospitals have an opportunity to use the reduced need for financial assistance to improve community health by focusing resources on prevention and management of community health needs. The use of resources for these types of activities is explicitly encouraged by the IRS. In particular the IRS rule highlights the need to ensure adequate nutrition for vulnerable populations. Because inadequate nutrition disproportionately impacts low-income communities and because the associated chronic disease outcomes are so costly it is logical for community benefit programs to place an emphasis on their prevention. Improvement of healthy food access is an evidence-based strategy for doing so.

## **SECTION TWO**

# **USE OF COMMUNITY BENEFITS TO IMPROVE HEALTHY FOOD ACCESS IN MASSACHUSETTS**



This section of the report provides an overview of the ways in which Massachusetts nonprofit hospitals are utilizing their community benefit resources to address healthy food access. It begins with an overview of the research approach. Second, it reviews the ways that hospitals integrate assessment of food security and the community food environment into their CHNA. Third, this section provides a summary of the types of programs that were implemented by hospitals during FY 2013. Finally, it reviews the ways in which hospitals evaluate the impact of food access programming and nutrition education on health outcomes.

## Methods

Secondary and primary data sources were used to determine the ways in which Massachusetts nonprofit hospitals address healthy food access through their community benefit programs. The project began with a review of the federal regulations and state guidance that dictate implementation of the community benefit standard. This review included an interview with staff from the Massachusetts AGO's. A review of the literature was also conducted to document the relationship between diet and chronic disease and the role of limited food access as a root cause contributing to poor diet.

Next, a review was conducted of all reported FY 2013 community benefits reports posted on the AGO website to catalogue the food access and nutrition programs supported by community benefits resources at Massachusetts hospitals (Appendix B). Programs were categorized as one of the following: direct food access, nutrition education, community food environment, integrated diet and exercise, or grants. Hospitals were then sorted by geographic location and program type. Based on these two criteria, 15 hospitals were selected for interviews and 11 interviews were completed (response rate of 73%).

Prior to each interview, the facility's CHNA was reviewed to provide an understanding of the data collection process, the ways in which community was engaged, and whether food access and/ or hunger was explicitly investigated. Interview questions focused on program logistics, challenges and opportunities, and evaluation strategies and metrics (Appendix A). Lastly, the researcher requested to view the hospital's program evaluation tools. When available, these documents were reviewed to determine which short- and long-term indicators were used to assess program impact.

## Incorporation of Healthy Food Access into Health Needs Assessments

Hospitals typically used secondary data sets, provided by federal or state agencies, for the bulk of their CHNA. Commonly used federal data sources came from the Bureau of Labor Statistics, US Census Bureau, and the CDC. At the state level the most common data source was MassCHIP (Community Health Information Profile). These data sources do not provide much information on the food environment, though they can offer insight into eating patterns.

All eleven hospitals interviewed for this report used these and other data sources to prioritize chronic diet-related diseases, such as obesity and diabetes, as primary health needs in their assessments. Two hospitals specifically mentioned “health eating, active living” as a primary health need and one explicitly acknowledged the relationship between diet and disease by identifying “high rate of diet and exercise related disease” as a focus area (Table 1).

<b>Table 1: Priority Health Issues Related to Diet</b>	
Facility	Priority Issue Area
Baystate Medical Center	High rate of diet and exercise related disease (obesity, diabetes and heart disease)
Beth Israel Deaconess Medical Center Boston	Healthy living (includes obesity, nutrition, physical activity and environmental factors)
Boston Children’s Hospital	Childhood obesity
Fairview Hospital	Obesity Chronic disease Health and wellness
Hallmark Health	Cardiovascular health, diabetes and obesity
Holy Family Hospital	Overweight and obesity Diabetes management and care
Beth Israel Deaconess Hospital Plymouth (previously Jordan Hospital)	Obesity and related disease
Lahey Hospital and Medical Center	Wellness prevention and disease management (diabetes, heart disease, cancer, healthy eating active living and obesity)
Massachusetts General Hospital	Healthy eating, active living
Saint Elizabeth’s Medical Center	Obesity and chronic disease
UMass Memorial Medical Center	Healthy eating, active living
Source: Priority health issues for each hospital are sourced from the most recent Community Health Needs Assessments. Only priority issues relevant to food access are cited. All hospitals have other priority issue areas.	

Based on the uniform prioritization of chronic diet-related disease throughout the interview facilities, it is clear that improving the diet of community members is an important objective for preventing and managing these diseases. However, hospitals must understand why diet is a challenge for their target population in order to develop a plan that can effectively improve diet. Unfortunately, hospitals are not yet consistently collecting information on eating patterns or food access (Table 2).

Despite the recognition that diet is correlated with the most prevalent chronic diseases, hospitals were not examining the ability of communities to provide their residents with a balanced diet. Only six of the 11 interview facilities collected data on fruit and vegetable consumption, which has a well-established relationship with chronic disease. Additionally, only six facilities assessed residents’ access to healthy food items. Lastly only four of the

hospitals examined in this report explored the rates of food insecurity, or hunger, in their community.

<b>Table 2: Incorporation of Diet, Access and Food Security in Community Health Needs Assessments</b>				
Facility	Food Insecurity	Access to/ Affordability of Retail Outlets	Fruit and Vegetable Consumption	Participation in nutrition assistance program (SNAP, WIC or NSLP)
Baystate Medical Center	X	X	X	
Beth Israel Deaconess Medical Center Boston	X	X	X	X
Boston Children's Hospital		X	X	
Fairview Hospital				
Hallmark Health		X	X	
Holy Family Hospital				
Beth Israel Deaconess Hospital Plymouth (previously Jordan Hospital)		X		
Lahey Hospital and Medical Center				
Massachusetts General Hospital	X		X	
Saint Elizabeth's Medical Center				X
UMass Memorial Medical Center	X	X	X	
Source: Information based on the most recent Community Health Needs Assessment for each of the listed facilities.				

## Program Implementation: Current Healthy Food Access Activities

Hospitals throughout the Commonwealth have implemented a variety of clinical and community-based healthy food access programs aimed at management and prevention of diet-related disease. A review of all the FY 2013 community benefit reports available on the AGO website revealed a total of 80 related programs (Appendix B). These programs were implemented by 36 out of the 62 (58%) hospitals and/ or health systems that reported

community benefit activities in FY2013.<sup>1</sup> For the purposes of this report these programs have been categorized as direct food access, education, community food environment, integrated diet and exercise, and grants (Appendix C).

Direct food access was the most common type of program. Some projects, like sponsorship of a farmers market or mobile market, enhanced food access for the community at-large. Other programs were targeted toward specific vulnerable populations or individuals; these included senior meals, meals for the homeless, and delivery of medically-tailored meals. Fruit and vegetable prescription programs were also categorized as a direct food access program.

Education was the next most common type of program offered by hospitals. This included cooking classes, tours of supermarkets and corner stores to teach individuals how to shop healthy on a budget, information on USDA's My Plate, and a variety of other individual educational activities and lecture series. The community food environment category includes programs in which the hospital funded or participated in a holistic program to address diet, nutrition and food access in a given neighborhood or town. These programs were typically associated with Mass in Motion, a project of the MDPH that addresses policies, systems and environmental factors contributing to community health.

<b>Table 3: Prevalence of Program Types</b>	
Program Type	Number of Hospitals Offering Program Type
Direct food access	30
Education	19
Community food environment	16
Integrated diet and exercise	10
Grant programs	5
Source: FY 2013 community benefit reports	

The integrated diet and exercise category includes both clinical and community-based programs that address the need for lifestyle changes. Examples of these programs include Optimal Weight for Life, Fitness in the City, and Operation Better Start all of which work closely with youth providing education and behavior support around diet and exercise. Lastly, there were a small number of formal grant programs in which hospitals issued a call for proposals from community organizations and community health centers. Facilities provided financial support for many of the other types of programs, but this category specifically represents those programs for which there was a formal grant making process.

Below are summaries of the signature food access programs sponsored by the 11 interview facilities. It is important to note that all of the facilities listed below are engaged in multiple activities aimed at improving diet through healthy food access. The programs highlighted below were selected to represent a broad spectrum of strategies being used throughout Massachusetts. The full list of related activities being conducted by these and other hospitals in Massachusetts is provided in Appendix B.

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<sup>1</sup> A total of 62 reports were submitted to the AGO in FY 2013. In some instances health systems submitted a single report on behalf of multiple facilities, while other reports represented the work of a single health care facility.

### 1. Baystate Medical Center (Springfield, MA):

Baystate Medical Center's signature program MIGHTY (Moving, Improving and Gaining Health Together at the Y) is a pediatric weight management program aimed at addressing diet and exercise. MIGHTY is designed for youth ages 2-21 with a BMI of 95% or higher. The youth meet 14 times over six months and participate in individual and group nutrition counseling and group exercise sessions. Families who participate in the program also receive a free six month membership to the Springfield YMCA, where all exercise and nutrition sessions are held. Prior to beginning the program youth receive complete medical evaluation, are interviewed by a registered dietician, and in some instances are seen by a social worker. Upon completion of the program, youth are able to participate in "grad groups," which meet monthly. The program is very popular and has a waiting list.

### 2. Beth Israel Deaconess Medical Center (Boston, MA):

Beth Israel Deaconess Medical Center (BIDMC) has strong relationships with six community health centers throughout Boston, Quincy, Waltham, and the Outer Cape. One strategy that they have used to leverage these relationships is to partner with the health centers to address diet-related disease in ways that best suit each community's needs. To this end, BIDMC developed the Healthy Eating/Active Living grant in 2013. This grant program provides funding to the Bowdoin Street Health Center, Joseph M. Smith Community Health Center, and the Dimock Center. Bowdoin Street Health Center has used the funds to provide group visits to augment existing individual visits for youth enrolled in a weight management program in their community. Joseph M. Smith provides Zumba classes for seniors and adults, cooking classes and shopping tours. Lastly, The Dimock Center has used the funds to enhance the programming offered at their Head Start program. The health center is partnering with the Head Start program to incorporate nutrition and physical activity curriculum. Likewise, this program is building staff's capacity to understand and teach about good nutrition and physical activity. The program provides cooking classes and nutrition education for staff, parents and students and provides healthy snacks to students.

### 3. Boston Children's Hospital (Boston, MA):

Boston Children's Hospital is unique in their focus on the health and well-being of youth across the Greater-Boston area. Their signature healthy eating, active living program is called Fitness in the City. This program works in partnership with 11 health centers throughout Boston to serve approximately 1,000 youth annually. Youth are identified by their primary care physicians and referred to a case manager who can enroll them in the program. The details of the program vary from health center to health center but they all include nutrition education and opportunities for physical activity. The program also enables youth and their families to become members at YMCAs throughout the city and to participate in other physical activity programming. In addition to supporting youth on the road to healthier lifestyles, Children's Hospital supports the case managers through meetings where they can share best practices.

#### 4. Fairview Hospital (Great Barrington, MA):

Fairview Hospital operates a unique program in which they donate food that has gone unused in the hospital cafeteria to a nearby homeless shelter. At the end of each day, hospital food service stores unused food, and three times per week this food is picked up by staff from the homeless shelter. On an almost daily basis, this food provides nutritionally balanced meals to the 10 individuals housed at the shelter and to the staff.

#### 5. Hallmark Health System (Medford, MA):

To address higher than state average food insecurity rates, Hallmark Health System through its North Suburban Women, Infants and Children (WIC) Nutrition program collaborates with the Zonta Club of Malden and the cities of Malden and Medford to provide a monthly mobile food market in Malden. The farmers-market style distribution offers free healthy grocery options, which are provided by the Greater Boston Food Bank, to approximately 600 diverse low-income families (nearly 3,000 individuals) each month. In addition to providing food to those in need, hospital staff and partner agencies offer additional health services, including blood pressure and blood sugar screenings, flu vaccinations, and information about enrollment in SNAP benefits, health insurance, and WIC services to name a few. More than 60 HHS and community volunteers support the program each month.

#### 6. Holy Family Hospital (Methuen, MA):

Like other hospitals in the Steward Health System, Holy Family Hospital has a strong commitment to providing direct access to fruits and vegetables in their community. Holy Family Hospital provides financial sponsorship to three farmers markets in the towns of Lawrence, Haverhill and Methuen. Additionally, they operate a fruit and vegetable prescription program. From July through October, physicians can refer patients into the program if they are overweight or obese, are suffering from cancer, have diabetes, or are in a cardiac rehabilitation program. Once enrolled, the individual and each family member receives a dollar per day in coupons. For example, a single person would receive \$7 a week, while a family of four would receive \$28 a week. In 2014, 46 patients and a total of 121 people participated in the program.

#### 7. Beth Israel Deaconess Hospital (previously Jordan Hospital) (Plymouth, MA):

Beth Israel Deaconess Plymouth takes a comprehensive approach to addressing access to healthy food by participating in and leading initiatives that focus on policy, systems and environmental change. The focus of this work is through Healthy Plymouth, a community collaboration (and former Mass in Motion community) that works with schools, government, local businesses and others. Examples of their work include bringing the “Harvest of the Month” local food program to all 13 Plymouth schools; implementing a nutrition curriculum in a high school wellness class; providing a community nutritionist; and creating a healthy corner store program.

#### 8. Lahey Hospital and Medical Center (Burlington, MA):

Lahey Hospital and Medical Center has developed strong partnerships with five Councils on Aging in their service area. As part of this partnership they offer educational workshops in

conjunction with meals at the Councils on Aging. They also support two senior farmers markets each of which are 21 weeks long. The markets were hosted at the Councils on Aging, a familiar environment for the population they were serving. All produce at the markets was free of charge and recipes were distributed so that people could learn how to best utilize some of the less familiar items.

#### 9. Massachusetts General Hospital (Boston, MA):

Massachusetts General Hospital operates the Food for Families program out of their site in Chelsea. Primary care physicians at this location use a two-question screening tool to determine the food security status of patients. Those who are food insecure are referred to a case manager who will follow up with them after their visit. In these follow-up calls, individuals are referred to federal nutrition assistance programs such as SNAP and to community resources like food pantries. For individuals who may not qualify for SNAP, the facility operates a small food pantry that can provide food to address the individual's immediate needs.

#### 10. Saint Elizabeth's Medical Center (Boston, MA):

Saint Elizabeth's piloted an innovative medically-tailored meal program for individuals who were released from the hospital after suffering a major cardiac event. Those who registered for this voluntary program received daily food deliveries that included three meals and a snack. The food was prepared and delivered by Boston-based City Fresh Foods and aimed to incorporate local products whenever possible. In addition to the food, participants received nutrition counseling by phone and through in-person home visits. The goal of this program was to reduce the readmission rate for cardiac patients by providing them with nutrition support for the first 30 days after discharge. Unfortunately, due to logistical challenges, the program is no longer in operation.

#### 11. UMass Memorial Hospital (Worcester, MA):

UMass Memorial Hospital is increasing access to healthy food through the development of community and backyard gardens in Worcester. In 2011, they established a 26-bed Community Garden at the Plumley Village public housing site which is planted and maintained by residents. Partnering with the Regional Environmental Council (REC), UMass Memorial also developed and supports the Grant Square community garden in the Bell Hill neighborhood, a food insecure area. The 20-bed garden is planted and maintained by 20 families and 12 youth. Produce from the garden is made available to Bell Hill residents and through REC's Veggie Mobile and Farmers' Markets held at food insecure sites throughout Worcester. UMass Memorial funding also enabled the doubling of SNAP purchases at the Veggie Mobile and Farmers markets. UMass Memorial also funds evidence-based healthy eating and cooking classes developed by Share Our Strength, Cooking Matters. Classes are offered in collaboration with community-based organizations serving low income neighborhoods.

#### *Best Practices in Program Implementation*

Throughout the interview process several themes rose to the top as best practices for successful program implementation. Chief among them were (1) the need to meet people



where they are, (2) an aim to make it easy for individuals to make healthy choices, and (3) the importance of strong partnerships.

### 1. Meet Them Where They Are

Nearly every interviewee highlighted the importance of bringing programs to the community instead of asking community members to come to the hospital. From a logistical perspective hosting activities and events in the community removes transportation and time barriers thereby increasing participation. A lack of comfort with the hospital environment was cited as another barrier that kept some people from participating in activities hosted on-site. Lastly, from a philosophical perspective some interviewees felt that hosting activities at community centers demonstrated a respect for the community.

### 2. Make the Healthy Choice the Easy Choice

“Make the healthy choice the easy choice” has grown to be the mantra of those working on healthy eating, active living initiatives. Every individual interviewed shared a version of this idea. However, each hospital took a different approach to implementation. Some hospitals focused at the individual level. For example, fruit and vegetable prescription programs remove a financial barrier to purchasing healthy foods for a discrete number of individuals. Other hospitals focused on the systems level. For example, Mass General Hospital implemented a screening process whereby all patients are screened for food insecurity when they visit their primary care physician. Regardless of the tactic, the overarching strategy is to identify needs and eliminate barriers to increase the ease with which people can make healthy choices.

### 3. Strong Partnerships are the Backbone of Community Programs

Interviewees repeated their reliance on strong community partners at all stages of program development and implementation. Hospitals relied on community health centers, schools, non-profit organizations and city governments not only to identify needs but also to determine the best strategies for addressing those needs. These community groups have strong and enduring relationships with the residents that hospitals are trying to reach. It is through these relationships that hospitals establish trust and gain entrance into the lives of the individuals they aim to serve. Several interviewees noted that they maintain ongoing relationships with multiple community entities in order to stay current on community needs and stay ahead of emerging trends.

## Program Evaluation

The primary purpose of community benefit programs is to improve community health. For this reason hospitals are required to develop programs that address the health needs identified in the CHNA process. A critical component of determining success of these community programs is a rigorous evaluation. However, this is an area in which many hospitals have struggled. In many instances hospitals solely evaluate their programs through operational measures, such as the number of people served. However, outcome measures, such as the influence of a program on health indicators, are needed to



demonstrate the relationship between programs and community health. Furthermore, in an interview with AGO staff a preference was stated for more rigorous evaluation that focuses on program outcomes.

Of the 11 interview hospitals, seven assessed their key food access program using only operational measures such as number of participants/ people reached and amount of food distributed (Table 4).

<b>Table 4: Evaluation Metrics</b>		
Hospital	Program	Evaluation Metrics
Baystate Medical Center	Integrated diet and exercise intervention	BMI, lipid abnormality and fitness test
Beth Israel Deaconess Medical Center	Funding for varied programs at community health centers	Varied, all included BMI
Boston Children's Hospital	Integrated diet and exercise intervention	BMI, TV time, fruit and vegetable intake, sugar sweetened beverage consumption, and amount of physical activity
Fairview Hospital	Meal delivery	Pounds of food
Hallmark Health	Mobile farmers market	Pounds of food, number of people served
Holy Family Hospital	Fruit and vegetable prescription program	Use of coupons, number of participants
Beth Israel Deaconess Hospital Plymouth (previously Jordan Hospital)	Community coalition to address food environment	Participation in school lunch program, sales at corner stores
Lahey Hospital and Medical Center	Meals and nutrition education	Pounds of food, number of people served
Massachusetts General Hospital	Food insecurity screening and pantry	Pounds of food, number of people served, and food insecurity prevalence
Saint Elizabeth's Medical Center	Medically-tailored meal delivery	Readmission rates
UMass Memorial Medical Center	Community and backyard gardens and SNAP incentive program	Number of beds developed, number of people served, amount of incentive dollars distributed
Source: Evaluation metrics were provided through interviews with hospital staff.		

Baystate Medical Center, Beth Israel Deaconess Medical Center and Boston's Children Hospital had the most robust program evaluations. Common across all three of these hospital's programs was an ongoing relationship with program participants, whether at a community health center or at a hospital. Additionally, all three programs had discrete

start and end periods which enabled collection of baseline and intervention metrics for program participants. All three programs used BMI as an outcome indicator. In each instance the individuals interviewed stated that they did not expect a significant change in BMI over the course of a short program, but they felt it was important to assess none-the-less.

Interviewees felt that there were complicating factors which made outcome-based evaluation difficult, especially given the short time-frames and settings in which they were working. Most programs were limited in duration, which made it difficult to demonstrate an impact. Additionally, hospitals expressed the desire to work in community settings, for reasons mentioned above, which made it difficult to collect information on health indicators.

## **SECTION THREE**

### **DISCUSSION AND CONCLUSION**

This section of the report provides a discussion of the findings presented in the previous section and recommendations for ways that hospitals can better utilize the community benefits process to improve healthy food access and reduce the prevalence of chronic diet related disease.

## Assessing Healthy Food Access

As previously discussed, it is important to understand the factors that influence healthy food access in order to develop the appropriate interventions to improve residents' diets. Hospitals typically use secondary data sets to determine priority health needs. Unfortunately, the data sources commonly used do not provide information on healthy food access or the community food environment. However, this information is available through other national data sources. Furthermore, these datasets can be augmented through surveys, key informant interviews and focus groups already routinely conducted as part of the CHNA process.

### *Secondary Data Sets*

Below are three national data sets that provide information about the food environment at the census tract or county level. The USDA has developed two useful interactive maps with downloadable data that can help to explain why some communities have poor eating habits. The Food Access Research Atlas provides a quick assessment of whether a community is a food desert. The Food Environment Atlas offers more nuanced data on the types of food offered in a community. Finally, Feeding America, a national non-profit organization, has developed Map the Meal Gap, which provides information about food insecurity.

#### 1. Food Access Research Atlas<sup>2</sup>

The Atlas was developed by the USDA in 2006. This tool provides data at the census tract level for the following variables, which can be overlaid: low-income; low access to supermarkets, and low vehicle access by residents.

#### 2. Food Environment Atlas<sup>3</sup>

The Food Environment Atlas (FEA) provides data on over 200 indicators related to food security at the county level. Similar to the Food Access Research Atlas mentioned above, this tool also enables mapping in which numerous indicators can be overlaid. The FEA provides data on indicators such as number of food stores, number of full service supermarkets, participation in federal nutrition assistance programs, expenditures on fast food, food prices, food taxes, and availability of local foods.

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<sup>2</sup> More information about the Food Access Atlas and data files can be found online at <http://www.ers.usda.gov/data-products/food-access-research-atlas/go-to-the-atlas.aspx>

<sup>3</sup> More information about the Food Environment Atlas and data sets can be found online at <http://www.ers.usda.gov/data-products/food-environment-atlas/go-to-the-atlas.aspx>

### 3. Map the Meal Gap<sup>4</sup>

Map the Meal Gap is an interactive map, with downloadable data, prepared by Feeding America. It provides county-level information about food insecurity in the general population and among children. The data provided in this tool is generated from a variety of sources including the Current Population Survey, the Bureau of Labor Statistics, and the American Community Survey.

#### *Primary Data Collection*

Primary data sources such as surveys, focus groups, and key informant interviews can be used to provide a deeper understanding of the information revealed through the above-mentioned secondary sources. To date, this has been the mechanism through which those hospitals who have obtained information about barriers to healthy food access have done so. Below is a list of items to consider incorporating into primary data collection tools. They approach food access and nutrition from a variety of perspectives which can help to illuminate the reasons why diet patterns look one way in a particular community and different in another.

<b>Table 5. Questions to Illuminate Barriers that Impact Eating Patterns</b>	
Barrier	Question
Physical Access	Are the types of fruits and vegetables you prefer to eat available in your community?
	Do you have reliable transportation to travel to a supermarket, or your preferred food retail outlet?
	How long does it take you to travel, one way, to the supermarket, or your preferred food retail outlet?
	Do you have a farmers market or farm stand in your neighborhood?
	Does the convenience store in your neighborhood sell fresh produce, whole grain products and low-fat milk?
Price Sensitivity	Are the types of fruits and vegetables you prefer to eat affordable for you to purchase on a weekly basis?
	Do you feel you are able to afford a healthy diet?
	Do you participate in SNAP or WIC?
Skills and Knowledge	Do you feel you know what it means to eat a well-balanced diet?
	Do you feel comfortable reading food labels?
	Do you feel comfortable preparing meals with fresh ingredients?
	Do you feel comfortable gardening or growing any of your own food?
Behavior	On average, how many times a week do you cook with fresh ingredients?
	Do you have reliable access to a cooking space?
	Do you grow any of your own food?

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<sup>4</sup> More information about Map the Meal Gap and data can be found online at <http://www.feedingamerica.org/hunger-in-america/our-research/map-the-meal-gap/>

There is a tension in program monitoring and evaluation between diving deep into an issue and making an assessment tool, or survey, user friendly. With this tension in mind, it is not expected that hospitals will incorporate all of these questions into their CHNA; rather it is suggested that the secondary data be used to help hospitals determine which of the above questions will be most useful in the context of their communities. Further, if food access is a particularly critical health challenge in a given community, it is recommended that an additional focus group or series of interviews be conducted to better understand the specific factors at play. Lastly, if food access arises as a major community need, it is recommended that hospitals consider working together to provide an in-depth community food assessment to better understand the causes and the potential strategies for improving the community food environment.

## Program Development and Implementation

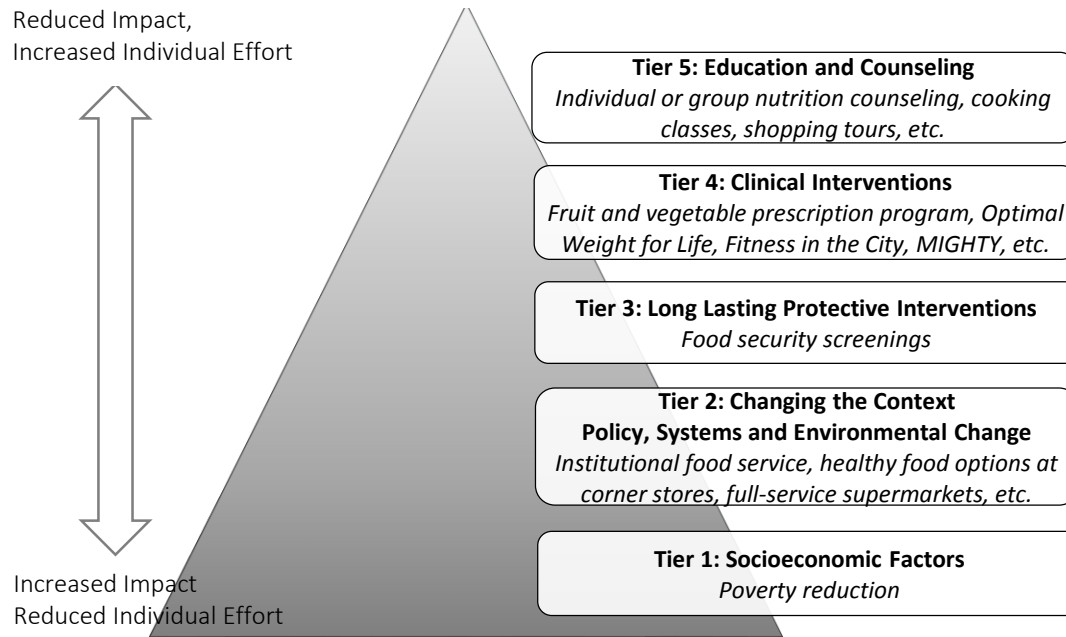
Hospitals must wade through large volumes of data and numerous food access strategies before determining which approaches are best for their communities. This portion of the report offers three suggestions for selecting and implementing high leverage food access programs:

1. Focus on policy, systems and environmental opportunities that change the context in which target populations live and work.
2. Align program goals with the State Health Improvement Plan.
3. Collaborate with hospitals that have overlapping geographic or demographic target populations to leverage resources and increase impact.

The CDC developed the Health Impact Pyramid<sup>i</sup> which provides five tiers of public health intervention to improve health. This pyramid can be applied to food access in the same manner it is applied to chronic disease.

Figure 3 is an adapted version of the health impact pyramid that uses the food access lens. This impact pyramid highlights the fact that the programs with the greatest impact on food access are those that create policy, systems and environmental change. These types of activities have the capacity to impact a large number of people without the need for one-on-one interactions. Examples of these high leverage programs already being implemented by hospitals include changes to school food offerings and healthy corner store initiatives. Other initiatives can range from development of a full-service supermarket or food hub in a food desert to policies that foster new markets for local food producers or enable point-of-purchase subsidies for fruit and vegetable purchases for low-income households. Given the potential impact of programs and policies that fall in the bottom tiers of this pyramid it is recommended that hospitals focus their efforts in these tiers.

**Figure 3. Food Access Improvement Pyramid**



Adapted from Frieden, 2010.

This broad focus on policy, systems and environment (PSE) change can be further narrowed to align with the Massachusetts State Health Improvement Plan (SHIP). The SHIP developed by the MDPH is a five year strategic plan to improve the health of all people in Massachusetts. The SHIP identifies seven priority health topics for which there are clear demonstrated needs, the first two of which are: Active Living, Healthy Eating and Tobacco Free Living; and Chronic Disease Prevention and Control.<sup>ii</sup> Within those two priority areas there are five goals relevant to improvement of healthy food access.<sup>iii</sup>

1. Increase relative percentage of adults, adolescents and children that report consuming 5 servings of fruits and vegetables daily by 2%.
2. Increase the relative percentage of adolescents and children who report consuming no more than one sugar sweetened beverage daily by 2%.
3. Increase the percentage of adults with hypertension who have their hypertension under control by 2.5%.
4. Decrease the relative percentage of adults with diabetes that have an A1c value greater than 9.0% by 2.5%.
5. Decrease the relative percentage of obesity among Massachusetts adults and youth by 5%.

The SHIP provides detailed information about the data sets that will be used to measure these metrics and specific strategies to improve these health outcomes. Examples of these strategies include development of a state-wide DVCP at farmers markets, increased

availability of healthy, affordable food in local retail outlets; and promotion of community resources within the health care delivery system.

## Recommendations for Specific Healthy Food Access Activities

Taking into consideration the highest leverage types of programming and the strategic foci of the state, three programs that are recommended for consideration by hospitals whose communities are impacted by limited food access and diet-related disease. They are screening for food security, development of healthy food retail, and targeted food subsidies for low-income individuals. Whenever possible, it is recommended that these efforts are connected to local farm and food businesses. A local food systems approach may enable these efforts to double as poverty reduction strategies by increasing farm income and creating jobs in the agricultural and food sectors.

### *Food Security Screening*

A few hospitals across the state are currently screening patients for food security, including Mass General Hospital and Boston Medical Center. This is recommended as a universal approach to identifying community members in acute need. Furthermore, it is recommended that hospitals develop a community level resource guide that identifies food resources including assistance for enrollment in federal nutrition assistance programs, food pantries, farmers markets, healthy corner stores, meal sites and other relevant resources. This systems level change would also require training of physicians and nurses to screen patients and connect them to appropriate resources. Lastly, it is recommended that hospitals develop a strategy to address immediate food needs. This may range from provision of a gift card to an onsite food pantry such as the one operated by Mass General Hospital.

### *Development of Healthy Retail Options*

As previously discussed, development of healthy retail may create jobs and improve diet outcomes. For these reasons, it is recommended as an effective strategy for curbing the impact of diet-related disease. This is an arena in which hospitals, acting in partnership with other community groups, can create large environmental changes. Hospitals may assist community groups in determining the types of retail that are most appropriate and can use their community benefit dollars to leverage additional investment. Where appropriate, it is recommended to focus investment on retail opportunities for local producers and processors as a complementary job creation and economic stimulus strategy. Such strategies may include development of food hubs with processing infrastructure, incentives for institutional purchases, and direct-to-consumer opportunities. In addition to helping fund and facilitate these development processes, hospitals can help to increase the success of local food endeavors by guaranteeing to purchase a portion of products for their food service operations. These guaranteed sales can be instrumental in helping businesses succeed in the early stages while they are developing other customers. Furthermore, a focus on increased procurement of local and



healthy food will improve the food environment in the hospital, benefiting employees and visitors.

### *Fruit and Vegetable Subsidies for Low-income Individuals*

Given the State's emphasis on provision of subsidies for fruits and vegetables for SNAP recipients, it is recommended that hospitals play an active role in enhancing the impact of this program on health outcomes. There are a variety of ways that hospitals can contribute to this state-wide effort.

1. Hospitals may provide funding for these programs, which may come in form of matching dollars for other grants.
2. Hospitals may educate high risk patients about SNAP and how they can enroll and utilize the matching program.
3. Hospitals may connect patients who participate in the SNAP incentive program with nutrition education and skill building opportunities.
4. Hospitals may advocate to expand healthy eating incentives to other high need populations such as WIC recipients and those below 200% of the poverty level that do not qualify for federal nutrition assistance.

## Program Evaluation

It is challenging to evaluate the impact of systems and environmental changes on diet and health outcomes. There are a host of identifiable and unidentifiable factors that make it difficult to separate the impact of a specific initiative. While there is no silver bullet for addressing these restrictions, below are highlighted a few strategies that may help improve evaluation of community benefit activities

Collaboration in the evaluation process is as important as it is in the assessment and implementation processes. Facilities and health systems that are working together to implement similar programs can collaborate around evaluation to allow for more robust assessment of program impacts. Collaboration around clinical programs may include use of the same evaluation tool in order to increase the sample size and strength of findings. For example, all facilities implementing FVRx programs may consider asking the same questions of participants and collecting the same health data such as A1c and/ or BMI.

Initiatives that target changes to the community food environment may be more challenging to evaluate because there is no specific "intervention" population; instead facilities are trying to measure the impact of an environmental change on overall population health. In this case, it may be most prudent to conduct a community-wide survey of diet and shopping patterns before any planned change goes into effect in order to provide baseline data. This will allow for a comparison of behaviors or health indicators before and after an environmental change is made. Although this pre-post comparison will not allow for the determination of a causal relationship, it may provide evidence of a correlation. Once again, collaboration is important to ensure a sufficient sample size, without which findings cannot be generalized to the population at large.

Lastly, hospitals may consider investing their time and resources in a community-based participatory research (CBPR) approach to better understand systems and environmental change from the community perspective. Community-based participatory research is defined as

*“...a collaborative approach to research that equitably involves all partners in the research process and recognizes the unique strengths that each brings. CBPR begins with a research topic of importance to the community and has the aim of combining knowledge with action and achieving social change to improve health outcomes and eliminate health disparities.”<sup>iv</sup>*

This approach involves study subjects, or intervention recipients, in all phases of research so that the process may benefit from their perspectives and deep understanding of the direct and indirect factors influencing behavior. If a facility feels unable to fully engage in CBPR, they may consider using focus groups to vet research methodologies and data collection tools to ensure that the study design can obtain reliable data.

## Conclusion

Diet-related chronic diseases impact a large portion of the population in Massachusetts and place a significant financial burden on the health care system. The strong relationship between diet and chronic diseases such as obesity, diabetes and heart disease is widely established in the scientific literature. This relationship has led to the development of a plethora of initiatives that target the individual in attempts to create behavior change. However, in the last ten years, there has been a shift toward interventions that address policy, systems and environmental changes in addition to individual behavior. This shift is based on the recognition that barriers to food access may be driving diet patterns and contributing to the development of diet-related disease.

For decades, Massachusetts hospitals have been providing nutrition and diet education through their community benefits activities. More recently they have begun to recognize their role in addressing the environmental contributors to poor diet and disease. These types of activities are supported through the 2008 community benefit guidelines provided by the Massachusetts AGO. And with the new final rule issued by the IRS in December of 2014, these activities are clearly aligned with the federal requirements for community benefit activities, which explicitly identify the need for adequate nutrition.

There are many opportunities for individual programs that target specific sub-community populations throughout the state. These types of programs will continue to be developed by hospitals across Massachusetts as the need arise. However, there are also opportunities for hospitals to have an increased impact by working together. Based on the health priorities established in the SHIP and an understanding of the types of activities that can have an impact for the largest number of people this report recommends that hospitals collaborate around the following three activities:

1. food security screenings to identify and ameliorate acute food needs;
2. development of healthy retail outlets to improve physical accessibility of healthy food and increase employment opportunities in low-income communities; and
3. subsidies for fruits and vegetables through coupon and prescription programs to reduce cost barriers to healthy eating.

In undertaking these initiatives, it is recommended that hospitals focus on local food whenever possible in order to increase economic activity in the community and surrounding communities. By doing so, hospitals can simultaneously address the immediate barriers to food access and the underlying challenge of poverty, which is negatively associated with health. By working with community partners to address these three components of food access hospitals will galvanize the healthy eating community in Massachusetts and can expect to see improvements in both diet and diet-related disease.

# APPENDICES

## Appendix A: Interview Questions

1. For purposes of your community benefits programming, how have you defined community?
2. What were the top health issues that arose as priorities in your health improvement plan and how did you decide which to address?
  - 2.1 Were community members engaged in this decision making process?
  - 2.2 Were staff outside of the community benefits office included in the decision making process? Specifically, were any members of the food service team included?
3. Please describe your food access programming.
  - 3.1. How long have you been working on this project/ issue?
  - 3.2. What health issue is this program designed specifically to address?
  - 3.3. Does the program connect with clinical care in any way?
  - 3.4. Is the intent to promote healthy food in particular? Or food access in general?
  - 3.5. Is support for local food considered in this program? Why or why not?
  - 3.6. Were examples from internal hospital work considered when developing this project?
4. Do you feel the program is well received by the community?
  - 4.1. Do you feel the community is aware of the project and the role that your facility has played in supporting the project?
  - 4.2. Are there other key community groups you would like to engage to increase efficacy or reach of the program, but have not been able to? Please describe the barriers to their engagement.
5. Is hospital staff engaged in this project? If so, how?
  - 5.1. Is the staff aware of this program?
  - 5.2. Have they been open to participation or support in any way?
  - 5.3. If you would like the staff more involved, what do you view as the primary barriers?
6. How do you define project success?
  - 6.1. Do you have specific metrics that are being used to evaluate this program?
    - 6.1.1. If so, what are they and how is data collected?
    - 6.1.2. How did you decide on those metrics?
  - 6.2. Is evaluation data informing project efforts? If so, how?
  - 6.3. Have you looked at return on investment, specifically hospital admittance rates?
7. What barriers have you encountered? Have you been able to overcome them? If so, how?
8. Is there anyone else you would recommend I speak with to better understand this project and its relationship to improving community health?

## Appendix B: Food Access and Nutrition Programs Reported by Massachusetts Hospitals

Facility/ Health System	Program Type	Program
Anna Jaques Hospital	Direct food access	Newburyport Farmers Market
Anna Jaques Hospital	Education	Cooking demonstrations of cancer preventing foods
Anna Jaques Hospital	Education	School Nutrition Month at Amesbury Elementary School
Anna Jaques Hospital	Education	School Nutrition Month at Haverhill Elementary School
Baystate Mary Lane Hospital	Direct food access	Mobile food pantry
Baystate Medical Center	Integrated diet and exercise	MIGHTY (Moving, Improving, Gaining Health Together at the Y)
Baystate Medical Center	Integrated diet and exercise	Operation Better Start
Beth Israel Deaconess Hospital – Needham	Education	Diabetes education
Beth Israel Deaconess Medical Center	Funding	Healthy Living, Health Food Equity Project
Boston Children's Hospital	Funding	Community Partnership Fund
Boston Children's Hospital	Integrated diet and exercise	Fitness in the City
Boston Children's Hospital	Integrated diet and exercise	Healthy Kids, Healthy Futures (HKHF)
Boston Children's Hospital	Integrated diet and exercise	Optimal Weight for Life on the Road (OOTR)
Boston Children's Hospital	Integrated diet and exercise	One Step Ahead
Brigham and Women's Hospital	Direct food access	Mission Hill community activities
Brigham and Women's Hospital	Education	Health Careers Ambassadors Program
Carney Hospital	Direct food access	Senior suppers
Carney Hospital	Direct food access	Fruit and vegetable prescription program
Carney Hospital	Education	Obesity and nutrition programs
Carney Hospital	Education	Healthy beverage program

Clinton Hospital	Direct food access	Community garden program
Cooley Dickinson Hospital	Community food environment	Healthy eating, active living
Fairview Hospital	Direct food access	Meal delivery to homeless shelter
Fairview Hospital	Integrated diet and exercise	Operation Better Start
Brigham and Women's Faulkner Hospital (previously Faulkner Hospital)	Education	Cooking classes and supermarket tours
Brigham and Women's Faulkner Hospital (previously Faulkner Hospital)	Education	Design and implement wellness curriculum at schools in Jamaica Plain
Good Samaritan Medical Center	Community food environment	Mass in Motion community partner
Hallmark Health System	Community food environment	North Suburban WIC Program
Hallmark Health System	Community food environment	participate in the Tri-Cap Hunger Network
Hallmark Health System	Community food environment	Participant in Mass in Motion activities in five communities
Hallmark Health System	Direct food access	Senior meals
Hallmark Health System	Direct food access	Meals to shelters
Hallmark Health System	Direct food access	Mobile farmers market
Heywood Hospital	Education	Nutrition education to adults with chronic disease
Holy Family Hospital	Direct food access	Senior meals
Holy Family Hospital	Direct food access	Annual food drive
Holy Family Hospital	Direct food access	Fruit and vegetable prescription program
Holy Family Hospital	Education	Cooking demonstrations
Holyoke Medical Center	Community food environment	Participation in Holyoke Food and Fitness Policy Council
Holyoke Medical Center	Direct food access	Community food drive
Holyoke Medical Center	Integrated diet and exercise	Let's Move Holyoke 5-2-1-0

Beth Israel Deaconess Hospital Plymouth (previously Jordan Hospital)	Community food environment	Healthy Community Initiative
Lahey Hospital and Medical Center	Education	Nutrition education for seniors
Lahey Hospital and Medical Center	Education	My plate workshop for seniors
Lowell General Hospital	Integrated diet and exercise	Nutrition education and fitness programming
Marlborough Hospital	Direct food access	Senior meals
Marlborough Hospital	Education	Healthy eating for a healthy you program
Massachusetts General Hospital	Community food environment	Leader of Healthy Chelsea coalition
Massachusetts General Hospital	Community food environment	Leader of Revere of the Move
Massachusetts General Hospital	Direct food access	Screening for food security and food provisions
MetroWest Medical Center	Community food environment	Healthy Food in Health Care pledge
MetroWest Medical Center	Direct food access	Community supported agriculture program
MetroWest Medical Center	Direct food access	On site farmers market
Morton Hospital and Medical Center	Education	Diabetes, nutrition and obesity education program
Mount Auburn Hospital	Community food environment	Healthy Waltham
Mount Auburn Hospital	Direct food access	Community food drive
Mount Auburn Hospital	Funding	Funding to promote policy change to address obesity and healthy food access
New England Baptist Hospital	Direct food access	Food for families during school vacations
New England Baptist Hospital	Direct food access	Mobile farmers market
New England Baptist Hospital	Education	Train youth educators to work with community around issues of nutrition and physical activity
Noble Hospital	Education	Nutrition segment in the local news
North Shore Medical Center	Community food environment	Active member of 2 Mass in Motion communities



Northeast Hospital Corporation (Beverly Hospital)	Community food environment	Be Healthy Beverly
Lahey Health, Beverly (previously Northeast Hospital Corporation)	Direct food access	Mobile farmers market
Lahey Health, Beverly (previously Northeast Hospital Corporation)	Direct food access	Senior meals
Lahey Health, Beverly (previously Northeast Hospital Corporation)	Direct food access	Weekly supper program
Norwood Hospital	Direct food access	Fruit and vegetable prescription program
Norwood Hospital	Education	Healthy cooking demonstrations at farmers markets
Quincy Medical Center	Direct food access	Discounted meals to seniors
Quincy Medical Center	Direct food access	Fruit and vegetable prescription program
South Shore Hospital	Community food environment	Active participant in Healthy Wey, a Mass in Motion community
Southcoast Hospitals Group	Community food environment	Active participant in Voices for a Healthy Southcoast
St Anne's Hospital	Funding	Reduce the number of families suffering from hunger
St Elizabeth's Medical Center	Community food environment	Reduce the availability of sugar sweetened beverages on the hospital campus
St Elizabeth's Medical Center	Direct food access	Fruit and vegetable prescription program
St Elizabeth's Medical Center	Direct food access	Home delivery of medically tailored meals to cardiac patients
St Elizabeth's Medical Center	Integrated diet and exercise	Teens Empowerment: exercise, education and nutrition program
Sturdy Memorial Hospital	Direct food access	Weekly senior meal program
UMass Memorial Medical Center	Education	Cooking classes and supermarket tours
UMass Memorial Medical Center	Funding	Support community garden and youth employment

## Appendix C: Food Access Program Category Definitions

The definitions/ criteria below were used to categorize the healthy food access activities reported by Massachusetts hospitals in FY 2013.

1. Direct food access: Programs or initiatives that increase access to healthy food by reducing physical and/ or cost barriers. This included aiding in the development of new retail outlets, direct provision of food to individuals in need, and coupons (prescriptions) to purchase healthy foods.
2. Education: Programs or initiatives that educate community members about nutrition and a balanced diet, how to prepare food and how to shop for healthy food.
3. Community food environment: Programs or initiatives that take a policy, systems and environment approach to improving the type of food available within a community.
4. Integrated diet and exercise: Programs or initiatives that simultaneously address the need to improve diet and increase physical activity.
5. Grant: Programs or initiatives in which funding is provided through a formal grant making process. Hospitals may offer additional support beyond financial assistance, but the grant is a core component of the relationship between the hospital and the recipient.

## REFERENCES

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- <sup>i</sup> Institute of Medicine Roundtable on Population Health Improvement. Population Health Implications of the Affordable Care Act. October 2013.
- <sup>ii</sup> Ernst & Young. *Results of the 2009 Schedule H Project*, January 2012. <http://www.aha.org/content/12/09-sche-h-benchmark.pdf> (accessed January 2015).
- <sup>iii</sup> Trust for America's Health. Partner With Nonprofit Hospitals to Maximize Community Benefit Program's Impact on Prevention. Issue Brief: January 2013.
- <sup>iv</sup> 79 Fed Reg 250, pg 78969
- <sup>v</sup> Ibid
- <sup>vi</sup> Congressional Budget Office. (2014). Comparison of CBO's Estimates of the Net Budgetary Effects of the Coverage Provisions of the Affordable Care Act. Pub. No. 4930. [http://www.cbo.gov/sites/default/files/45231-ACA\\_Estimates.pdf](http://www.cbo.gov/sites/default/files/45231-ACA_Estimates.pdf) Last accessed 12.16.2014
- <sup>i</sup> Massachusetts Department of Public Health. (2010). Health of Massachusetts. Boston, MA.
- <sup>ii</sup> Ibid
- <sup>iii</sup> Ibid
- <sup>iv</sup> Massachusetts Department of Public Health. (2014). Massachusetts State Health Improvement Plan (SHIP). <http://www.mass.gov/eohhs/gov/departments/dph/programs/admin/ohpp/accreditation/> Last accessed 12.16.2014
- <sup>v</sup> Massachusetts Department of Public Health. (2013). A Profile of Health among Massachusetts Adults, 2011. Boston, MA. <http://www.mass.gov/eohhs/docs/dph/behavioral-risk/report-2011.pdf> Last accessed 12.20.2014
- <sup>vi</sup> Massachusetts Department of Public Health, 2010.
- <sup>vii</sup> Ibid
- <sup>viii</sup> Ibid
- <sup>ix</sup> Ibid
- <sup>x</sup> American Heart Association. Cost to Treat Heart Disease in United States will Triple by 2030. <http://newsroom.heart.org/news/1241> Last accessed 12.21.2014
- <sup>xi</sup> Mayo Clinic. Diseases and Conditions: Metabolic Syndrome. <http://www.mayoclinic.org/diseases-conditions/metabolic-syndrome/basics/definition/con-20027243> Last accessed 12.21.2014.
- <sup>xii</sup> U.S. Health and Human Services and U.S. Department of Agriculture. (2010). The Dietary Guidelines for Americans, 2010. Washington, DC. <http://health.gov/dietaryguidelines/dga2010/DietaryGuidelines2010.pdf> Last accessed 12.20.2014.
- <sup>xiii</sup> Dauchet, L.; Amouyel, P.; Hercberg, S.; and Dallongeville, J. (2006). Fruit and Vegetable Consumption and Risk of Coronary Heart Disease: A Meta-Analysis of Cohort Studies. *Journal of Nutrition*. 136: 2588-2593.
- <sup>xiv</sup> Rimm, E.B.; Ascherio, A.; Giovannucci, E.; Spiegelman, D.; Stampfer, M. and Willet, W.C. (1996). Vegetable, Fruit, and Cereal Fiber Risk of Coronary Heart Disease among Men. *JAMA*. 275: 447-451.
- <sup>xv</sup> Cristiane Hermes Sales and Lucia de Fatima Campos Pedrosa (2006). Magnesium and Diabetes Mellitus: Their Relation. *Clinical Nutrition*. 25: 554-562.
- <sup>xvi</sup> Massachusetts Department of Public Health, 2013.
- <sup>xvii</sup> Michelle Ver Ploeg et al. (2009). Access to Affordable and Nutritious Food: Measuring and Understanding Food Deserts and Their Consequences. USDA. Washington, DC.
- <sup>xviii</sup> Ibid
- <sup>xix</sup> Ibid
- <sup>xx</sup> Ibid
- <sup>xxi</sup> Bell, J; Mora, G.; Hagam E.; Rubin, V.; and Karpyn, A. (2013). Access to Healthy Food and Why it Matters: A Review of the Research. The Food Trust. Philadelphia, PA.
- <sup>xxii</sup> Richardson, A.S. et al (2012). Are Neighborhood Food Resources Distributed Inequitably by Income and Race. *BMJ Open*. 2: 2.
- <sup>xxiii</sup> Sarah Treuhaft and Allison Karpyn. (2010). The Grocery Gap: Who Has Access to Healthy Food and Why it Matters. The Food Trust. Philadelphia, PA.

---

xxiv West, E.F.; Harper, A.B., Kelly, S.; Martinez, E.; McCarthy, A. and Rogowsky, N. (2014). Massachusetts Food Insecurity: Landscape and Innovation. Prepared by Tufts University for the Metropolitan Area Planning Council.

xxv Ibid

xxvi Wholesome Wave. Double Value Coupon Program. <https://www.wholesomewave.org/our-initiatives/double-value-coupon-program/> Last accessed 12.21.2014

xxvii Jennifer Obadia and Jennifer Porter. (2013). Farmers Markets: Impact on Fruit and Vegetable Consumption of Supplemental Nutrition Assistance Program Clients. Boston, MA.

xxviii Oberholtzer, L., Dimitri, C., & Zive, M. (2012). Double Value Coupon Program: Diet and shopping behavior study results. Wholesome Wave: Bridgeport, CT.

xxix Bartlett, S.; Klerman, J.; Olsho, L.; et al. (2014). Evaluation of the Healthy Incentives Pilot (HIP): Final Report. Prepared by Abt Associates for the U.S. Department of Agriculture, Food and Nutrition Services.

xxx Wholesome Wave (2013). Wholesome Wave's Fruit and Vegetable Prescription Program, New York City 2013 Outcomes. Wholesome Wave. Bridgeport, CT.

xxxi Sarah Treuhaft and Allison Karpyn, 2010.

xxxii Gittelsohn, J.; Suratkhar, S.; Song, H.; Sacher, S.; Rajan, R.; Rasooly, I.R.; Bednarek, E.; Sharma, S.; and Anliker, J.A. (2010). Process evaluation of Baltimore healthy stores: A pilot health intervention program with supermarkets and corner stores in Baltimore City. Health Promotion Practice. 11 (5): 723-732.

xxxiii The Food Trust. (2014). Healthier Corner Stores: Positive Impacts and Profitable Changes. [http://thefoodtrust.org/uploads/media\\_items/healthier-corner-stores-positive-impacts-and-profitable-changes.original.pdf](http://thefoodtrust.org/uploads/media_items/healthier-corner-stores-positive-impacts-and-profitable-changes.original.pdf) Last accessed 12.20.2014

xxxiv The Reinvestment Fund (2008), Access to Supermarkets in Inner City Communities. Reinvestment Brief, No. 5. <http://trfund.com/wp-content/uploads/2013/06/CDFIStudySummary.pdf>

xxxv Ibid

xxxvi Bell et al, 2013.

xxxvii The Food Trust. (2014). What we do: With Supermarkets. <http://thefoodtrust.org/what-we-do/supermarkets> Last accessed 12.20.2014.

xxxviii Ibid

xxxix Office of Community Services. (2011). CED Data Healthy Food Financing Initiative. <http://www.acf.hhs.gov/programs/ocs/resource/healthy-food-financing-initiative-0> Last accessed 12.20.2014

xl Bell et al, 2013

xli Somerville, M.H.; Nelson, G.D.; and Mueller, C.H. (2013). Hospital Community Benefits after the ACA: The State Law Landscape. The Hilltop Institute. <http://www.hilltopinstitute.org/publications/HospitalCommunityBenefitsAfterTheACA-StateLawLandscapeIssueBrief6-March2013.pdf> Last accessed 12.14.2014

xlii Lunder, E.K. and Liu E.C. (2012). 501(c)(3) Hospitals; Proposed IRS Rules under §9007 of the Affordable Care Act. Congressional Research Service.

xliiii 78 Fed Reg 20523

xliv 79 Fed Reg 250 (78954-79016)

xlvi Rosenbaum, S. (2013a). Update: Treasury/ IRS Proposed Rule on Community Benefit Obligations of Nonprofit Hospitals. George Washington University. <http://www.healthreformgps.org/resources/update-treasuryirs-proposed-rule-on-community-benefit-obligations-of-nonprofit-hospitals/> Last accessed 12.14.2014

xlvi 79 Fed Reg 250, pg 78969

xlvi Rosenbaum, S. (2013b). Principles to consider for the implementation of community health needs assessment process. George Washington University. Washington, DC.

xlvi Rosenbaum, 2013a.

xlvi Barnett, K. and Somerville, M.H. (2012). Hospital Community Benefits after the ACA: Schedule H and Hospital Community Benefit – Opportunities and Challenges for the States. The Hilltop Institute at the University of Maryland Baltimore County. <http://www.hilltopinstitute.org/publications/hospitalcommunitybenefitsaftertheaca-schedulehissuebrief4-october2012.pdf> Last accessed 12.14.2014

<sup>1</sup> Catholic Health Association. Defining Community Benefit. <http://www.chausa.org/communitybenefit/defining-community-benefit> Last accessed 12.15.2014

- 
- li Massachusetts Attorney General's Office. (2008). The Attorney General's Community Benefit Guidelines for Nonprofit Hospitals. <http://www.mass.gov/ago/docs/healthcare/hospital-guidelines.pdf> Last accessed 12.16.2014
- lii Ibid
- liii Ibid
- liv Ibid
- lv Personal communication. Robert Ciccia. Massachusetts Attorney General's Office. December 2, 2014.
- lvi Ibid
- lvii Ibid
- lviii Massachusetts Attorney General's Office, 2008
- lix Rosenbaum, S. (2015). Additional Requirements for Charitable Hospitals: Final Rules on Community Health Needs Assessments and Financial Assistance. Health Affairs. <http://healthaffairs.org/blog/2015/01/23/additional-requirements-for-charitable-hospitals-final-rules-on-community-health-needs-assessments-and-financial-assistance/> Last accessed 1.26.2015
- lxx Trust for America's Health. (2013). A Healthier America 2013: Strategies to move from sick care to health care in the next four years. Trust for America's Health. Washington, DC. <http://healthyamericans.org/report/104/> Last accessed 1.15.2015.
- lxi Union of Concerned Scientists and John Hopkins Center for a Livable Future. (2014). Policy Brief: Hospitals and Healthy Food. <http://www.ucsusa.org/sites/default/files/attach/2014/08/hospitals-and-healthy-food.pdf> Last accessed 12.22.2014
- lxii Center for Health Information and Analysis. [http://s3.amazonaws.com/media.wbur.org/wordpress/15/files/2014/06/0609\\_mass-health-care-enrollment-trends.pdf](http://s3.amazonaws.com/media.wbur.org/wordpress/15/files/2014/06/0609_mass-health-care-enrollment-trends.pdf) Last accessed 12.20.2014
- i Frieden TR. (2010). A Framework for Public Health Action: The Health Impact Pyramid. American Journal of Public Health. 100 (4):590-595.
- ii Massachusetts Department of Public Health. (2014). Massachusetts State Health Improvement Plan (SHIP). <http://www.mass.gov/eohhs/gov/departments/dph/programs/admin/ohpp/accreditation/> Last accessed 12.16.2014
- iii Ibid
- iv Faridi, Z; Grunbaum, J.A.; Gray, B.S.; Franks, A.; and Simones, E. (2007). Community-based Participatory Research: Necessary Next Steps. Preventing Chronic Disease: Public Health Research, Practice and Policy. 4: 3.