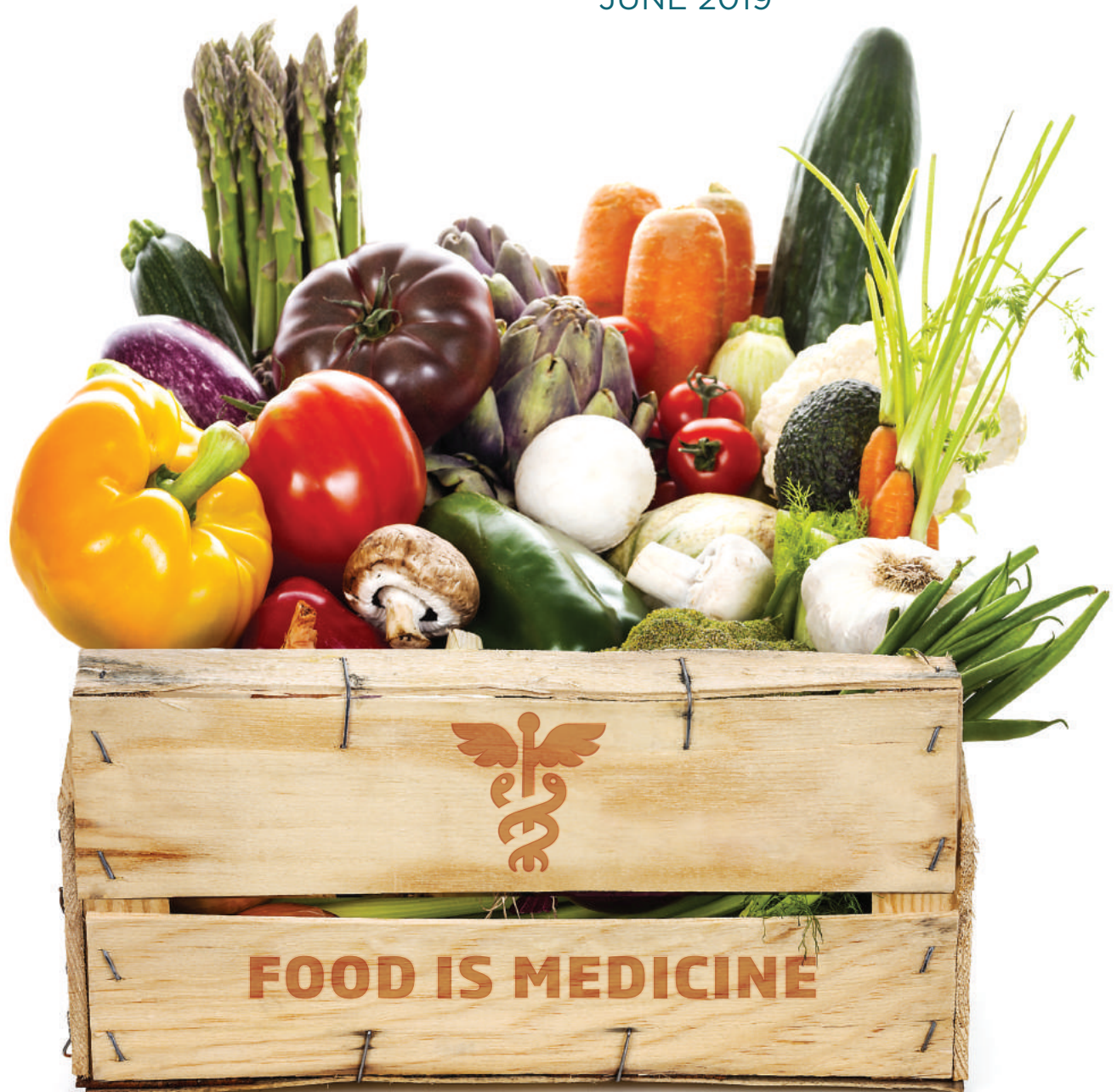


MASSACHUSETTS

Food is Medicine

STATE PLAN

JUNE 2019



The Massachusetts Food is Medicine State Plan is the result of a two-year statewide initiative that explored the need for and access to nutrition interventions in the Commonwealth.

The State Plan has brought together hundreds of individuals and organizations from across Massachusetts and beyond, all united by a belief that

Food is Medicine.

Authors

CHLPI

The Center for Health Law and Policy Innovation of Harvard Law School (CHLPI) advocates for legal, regulatory, and policy reforms to improve the health of underserved populations, with a focus on the needs of low-income people living with chronic diseases. CHLPI works to expand access to high-quality health care and nutritious, affordable food; to reduce health disparities; and to promote more equitable and effective health care and food systems. CHLPI's Food is Medicine initiative promotes access to healthy food as an essential component of health care and asserts that such food should be considered a reimbursable, core medical service. Since 2014, CHLPI has served as an advisor for the national Food is Medicine Coalition, working to integrate nutrition interventions into the health care system. CHLPI has released two national reports: *Food is Medicine: Opportunities in Public and Private Health Care for Supporting Medically Tailored Meals* and *Food is Prevention: The Case for Integrating Food and Nutrition Interventions into Health Care*. CHLPI is a clinical teaching program of Harvard Law School and mentors students to become skilled, innovative, and thoughtful practitioners as well as leaders in health, public health, and food law and policy.

AUTHORS FROM CHLPI:

Sarah Downer, Katie Garfield, Kristin Sukys, Kurt Hager, Hanh Nguyen, Emily Broad Leib, and Robert Greenwald.

COMMUNITY SERVINGS

Community Servings is a not-for-profit food and nutrition program providing services throughout Massachusetts to individuals and families living with critical and chronic diseases. We give our clients, their dependent families, and caregivers appealing, nutritious meals, and send the message to those in greatest need that someone cares. We are leading members of the Food is Medicine Coalition, a national association of nonprofit food and nutrition service providers that advocates for the integration of medically tailored foods into health care payment and delivery systems.

Community Servings has partnered with rigorous external clinical researchers to co-author three peer-reviewed journal articles demonstrating that our medically tailored home-delivered meals program improves health outcomes, reduces health care utilization and costs, and improves quality of life for individuals coping with complex illnesses: *Association Between Receipt of Medically Tailored Meal Program and Health Care Use*; *Meal Delivery Programs Reduce the Use of Costly Health Care in Dually Eligible Medicare and Medicaid Beneficiaries*; and *Medically Tailored Meal Delivery for Diabetes Patients with Food Insecurity: A Randomized Cross-Over Trial*.

AUTHORS FROM COMMUNITY SERVINGS:

David Waters, Jean Terranova, and Hannah Sobel.

With gratitude to our funders:



The Planning Council

In order to ensure that each step of the Food is Medicine State Plan process was grounded in the real needs, capacity, and experiences of stakeholders, our data-gathering, analysis, and strategic plan development were guided by a multi-sector Planning Council. The Planning Council consists of over forty representatives from health care systems, health insurers, community-based organizations, academic programs, and advocacy organizations from across the state:

Alliance of Massachusetts YMCAs

American Heart Association

Bassuk Center on Homeless and Vulnerable Children and Youth

Blue Cross Blue Shield of MA Foundation

Blue Cross Blue Shield of Massachusetts

Boston Medical Center HealthNet Plan

Boston Medical Center

Boston Public Health Commission

Brockton Neighborhood Health Center

Cape Cod Healthcare

Children's HealthWatch

Center for Health Law and Policy Innovation (CHLPI)

Commonwealth Care Alliance

Community Health Center of Franklin County

Community Servings

DentaQuest Partnership for Oral Health Advancement

Elder Services of Merrimack Valley

Feeding America

The Food Bank of Western MA

Greater Boston Food Bank

Harvard School of Public Health

Health Care Without Harm

Just Roots

Krupp Family Foundation

Massachusetts Healthy Aging Collaborative

Massachusetts Food System Collaborative

Massachusetts League of Community Health Centers

Massachusetts Medical Society

Mayor's Office of Food Access, Boston

Meals on Wheels America

Minuteman Senior Services

New England States Consortium Systems Organization (NESCSO)

The Open Door

Project Bread

Sustainable Cape

Tufts Friedman School of Nutrition Science and Policy

University of Massachusetts Medical School

University of Massachusetts Memorial Medical Center

Victory Programs

Wholesome Wave

In addition to conferring regularly with the Planning Council, the Food is Medicine State Plan initiative sought input and feedback on the recommendations in this report from **relevant state agencies** whenever possible.

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ACRONYM LIST

ACO	Accountable Care Organization
CBO	Community-Based Organization
CHNA	Community Health Needs Assessment
CMS	Centers for Medicare & Medicaid Services
DPH	Massachusetts Department of Public Health
DTA	Massachusetts Department of Transitional Assistance
EHR	Electronic Health Record
HIP	Healthy Incentives Program
HPC	Massachusetts Health Policy Commission
GusNIP	Gus Schumacher Nutrition Incentive Program
SNAP	Supplemental Nutrition Assistance Program
WIC	Special Supplemental Nutrition Assistance Program for Women, Infants, and Children

What is Food is Medicine?

Food is Medicine refers to a spectrum of services and health interventions that recognize and respond to the critical link between nutrition and chronic diseases. Food is Medicine interventions consist of healthy foods that are tailored to meet the specific needs of individuals living with or at risk for serious health conditions affected by diet.

Although Food is Medicine interventions often target food-insecure populations, they are distinct from broader hunger safety net programs, like the Supplemental Nutrition Assistance Program (SNAP), because of their focus on chronic disease prevention, management, and treatment.¹ A growing number of health care payers (i.e., public and private health insurers), providers (i.e., physicians, nurses, dietitians), and health systems (i.e., hospitals, community health centers) are now exploring how they can integrate Food is Medicine interventions into patient-centered models of care for individuals living with or at risk for complex chronic diseases.

The United States Department of Agriculture defines food insecurity as the lack of consistent access to enough food for an active, healthy life.ⁱ

Roughly one out of every ten households in Massachusetts struggles with food insecurity, resulting in a staggering \$1.9 billion in avoidable health care costs each year.ⁱⁱ

By addressing nutritional needs within the context of health care, Food is Medicine interventions play an important role in preventing and/or managing many of the chronic conditions that drive health care costs, including: diabetes, cardiovascular disease, kidney disease, certain cancers, HIV, and more.

THE AVOIDABLE COSTS OF FOOD INSECURITY AND HUNGER IN MASSACHUSETTS

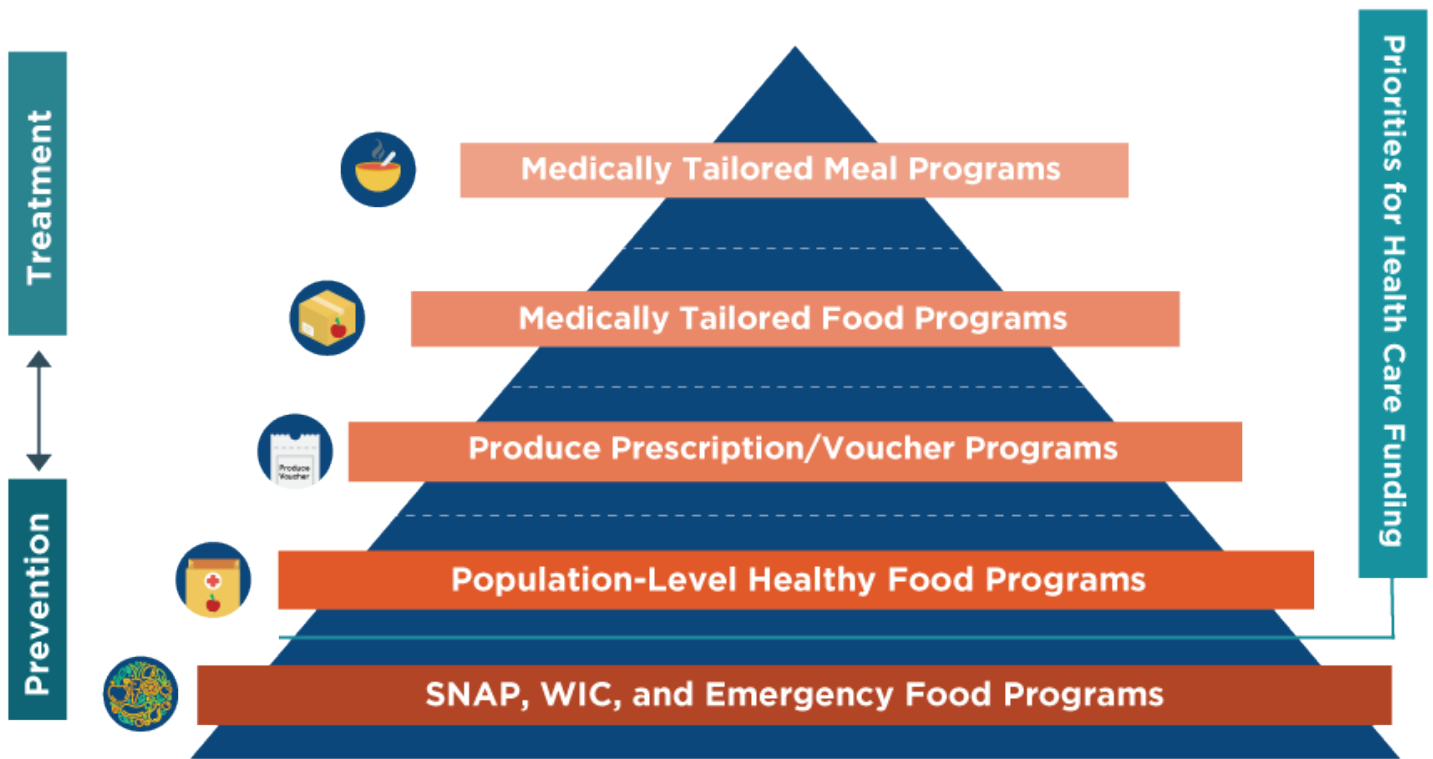
Children's HealthWatch and The Greater Boston Food Bank, 2017



ⁱ *Definitions of Food Security*, UNITED STATES DEPARTMENT OF AGRICULTURE ECONOMIC RESEARCH SERVICE, <https://www.ers.usda.gov/topics/food-nutrition-assistance/food-security-in-the-us/definitions-of-food-security.aspx> (last visited June 7, 2019).

ⁱⁱ John T. Cook et al., *An Avoidable \$2.4 Billion Cost: The Estimated Health-Related Costs of Food Insecurity and Hunger in Massachusetts*, CHILDREN'S HEALTHWATCH & GREATER BOSTON FOODBANK, (Feb. 2018). Note that we have excluded special education costs in our calculation of \$1.9 billion based on our focus on the health care system.

FOOD IS MEDICINE PYRAMID



There are a range of Food is Medicine interventions, which can be calibrated to an individual's level of need. Within the context of this State Plan, Food is Medicine interventions include:

1. MEDICALLY TAILORED MEALS:

Medically tailored meals are the most intensive Food is Medicine intervention, requiring a referral from a health care provider or health plan. They are designed by a Registered Dietitian Nutritionist based on a nutritional assessment. These meals address the recipient's medical diagnosis or diagnoses with the goal of ensuring the best possible health outcomes. Typically, meals are prepared and home-delivered.²

2. MEDICALLY TAILORED FOOD:

Medically tailored food is a package of non-prepared grocery items selected by a Registered Dietitian Nutritionist or other qualified nutrition professional as part of a treatment plan for an individual with a defined medical diagnosis. The recipient of medically tailored food is typically capable of picking up the food and preparing it at home.

3. PRODUCE PRESCRIPTION/VOUCHER PROGRAMS:

Vouchers for free or discounted produce, sometimes called "prescriptions," are distributed by health care providers to address a recipient's specific health condition and are redeemed at retail grocers, farmers' markets, or within Community Supported Agriculture programs.

4. POPULATION-LEVEL HEALTHY FOOD PROGRAMS:

These anti-hunger programs partner with health care providers to distribute generally healthy food to any patient, regardless of health status. The food is not explicitly tailored for any specific diagnosis, but increasingly provided in health care settings in recognition of the strong association between food insecurity and diet-related chronic disease.

How Can Food is Medicine Interventions Influence Health Outcomes and Costs?

Food insecurity and malnutrition are major drivers of poor health outcomes and rising health care costs, globally posing “a greater risk to morbidity and mortality than unsafe sex, alcohol, drug, and tobacco use combined.”³

Data on malnutrition, food insecurity, health outcomes, and costs demonstrate

that medically tailored, nutritious food is a necessary component of outcome-driven, cost-effective health care, particularly for Medicare and Medicaid populations. **See Table 1: Select Research Summary of the Health and Cost Impacts of Food is Medicine Programs.**

Emerging research demonstrates that connecting people with complex health conditions to Food is Medicine interventions is an effective and low-cost strategy to improve health outcomes, decrease utilization of expensive health services, and enhance patient quality of life.

Research shows:

- **Total health care costs, including inpatient care, emergency care, surgeries, and drug costs, increase as food insecurity severity increases.**^{4,5}
- **Average inpatient hospitalization costs are 24% higher and readmission within 15 days almost twice as likely for malnourished patients as compared to properly nourished patients.**⁶
- **Food insecurity is associated with increased use of health services in primary care networks among diabetic patients.**⁷
- **Hospitalizations for low-income, diabetic patients increase at the end of the month when nutrition benefits, finances, and food are in short supply, while they remain stable for middle-class and upper-class households.**^{8,9}
- **Food-insecure individuals often have lower quality diets, including lower intake of produce, than their food secure counterparts, contributing to poorer health outcomes.**¹⁰
- **To mitigate limited financial resources, food insecure individuals often adopt coping strategies that may be harmful to health such as delaying or forgoing medical care;^{11,12} engaging in cost-related medication underuse;^{13,14,15} choosing between food and other basic needs such as utilities;^{16,17} opting to consume low-cost, energy-dense foods;^{18,19,20} and/or forgoing food needed for special medical diets.**²¹

Table 1: Select Research Summary of the Health and Cost Impacts of Food is Medicine Programs

Peer-Reviewed Research	Results
MEDICALLY TAILORED MEALS	
<p><i>Association Between Receipt of a Medically Tailored Meal Program and Health Care Use, (2019).</i>²²</p>	<ul style="list-style-type: none"> In a retrospective, matched cohort study (sample size = 1,020 individuals) using the Massachusetts All-Payer Claims database, receipt of medically tailored meals was associated with 49% fewer inpatient admissions, 72% fewer admissions into skilled nursing facilities, and a 16% reduction in total health care costs.
<p><i>Medically Tailored Meal Delivery for Diabetes Patients with Food Insecurity: a Randomized Cross-over Trial, (2018).</i>²³</p>	<ul style="list-style-type: none"> In a 24-week randomized cross-over clinical trial (sample size = 44 individuals), participants with type 2 diabetes receiving medically tailored meals experienced substantially improved diet quality as measured by the 2010 USDA Healthy Eating Index (HEI). The average HEI score (out of 100 possible points, with 100 representing the healthiest diet) for participants on medically tailored meals was 73; the average HEI score without medically tailored meals was 39.9 ($p < .0001$). While receiving medically tailored meals, participants also reported lower food insecurity (42% “on-meal” vs. 62% “off-meal”), less hypoglycemia (47% “on-meal” vs. 64% “off-meal”) and fewer days where mental health interfered with quality of life (5.65 vs. 9.59 days out of 30) (all $p < .05$).
<p><i>Meal Delivery Programs Reduce the Use of Costly Health Care In Dually Eligible Medicare And Medicaid Beneficiaries, (2018).</i>²⁴</p>	<ul style="list-style-type: none"> In a retrospective, matched cohort study (sample size = 1,135 individuals) using Commonwealth Care Alliance health care claims, individuals dually eligible for Medicare and Medicaid who received medically tailored meals for six months had 50% fewer inpatient admissions and 70% fewer emergency department visits than similar patients not enrolled in the meal program ($p < .05$) Researchers found a 16% savings in total medical expenditures, resulting in an average net savings of \$220 per patient per month after accounting for the costs of the medically tailored meals.
<p><i>Comprehensive and Medically Appropriate Food Support Is Associated with Improved HIV and Diabetes Health, (2017).</i>²⁵</p>	<ul style="list-style-type: none"> In a pre-post intervention study (sample size = 52 individuals), adherence to antiretroviral therapy for HIV patients increased from 47% at baseline to 70% ($p = 0.046$) at the end of a 6-month medically tailored meal intervention. Diabetes distress ($p < 0.001$) and perceived diabetes self-management ($p = 0.007$) improved for patients with type 2 diabetes after 6 months of medically tailored meals. The study observed decreased depressive symptoms ($p = 0.028$) and decreased binge drinking ($p = 0.008$) at the end of the intervention for all diagnoses. Fewer participants sacrificed food for health care ($p = 0.007$) or prescriptions ($p = 0.046$), or sacrificed health care for food ($p = 0.029$) once they were connected to medically tailored meals.
<p><i>Examining Health Care Costs Among MANNA Clients and a Comparison Group, (2013).</i>²⁶</p>	<ul style="list-style-type: none"> In a pre-post study with a comparison group (sample size = 698), the total average monthly health care costs for recipients of medically tailored meals were 31% lower than the comparison group (\$28,000 vs. \$41,000) at the end of the three-month intervention ($p = .0006$). 93% of the treatment group with inpatient hospitalizations were discharged to their homes as compared to only 18% of the comparison group ($p = .0001$).
MEDICALLY TAILORED FOOD	
<p><i>A Pilot Food Bank Intervention Featuring Diabetes-Appropriate Food Improved Glycemic Control Among Clients In Three States, (2015).</i>²⁷</p>	<ul style="list-style-type: none"> In a pre-post intervention study (sample size = 1020 individuals), participants in a six-month medically tailored food intervention received diabetes-appropriate food, blood sugar monitoring, primary care referrals, and self-management support from food banks and their partner agencies. Among participants with elevated HbA1c (at least 7.5%) at baseline, HbA1c improved from 9.52% to 9.04% ($p < .0001$). Fruit and vegetable intake increased from 2.8 to 3.1 servings per day ($p < .001$), self-efficacy increased ($p < .0001$), and medication adherence increased ($p < .001$).

Peer-Reviewed Research	Results
PRODUCE PRESCRIPTION/VOUCHER PROGRAMS	
<p><i>Cost-effectiveness of Financial Incentives for Improving Diet and Health through Medicare and Medicaid: A Microsimulation Study, (2019).</i>^{28*}</p> <p><i>*This study evaluates the effect of subsidies on all Medicaid and Medicare enrollees, but researchers highlight the implications of the data for design and implementation of produce prescription programs.</i></p>	<ul style="list-style-type: none"> • In a microsimulation study, a 30% subsidy on fruit and vegetable purchases by enrollees in Medicare and Medicaid would prevent 1.93 million cardiovascular disease (CVD) events, gain 4.64 million quality-adjusted life years, and save \$39.7 billion in formal health care costs if enacted on a national level over a lifetime. • Compared to no intervention, a 30% fruit and vegetable subsidy would increase mean intake of fruits by 0.4 servings/day and vegetables by 0.4 servings/day. • A similar 30% subsidy on broader healthful foods enacted over a lifetime, including fruits and vegetables, whole grains, nuts/seeds, seafood, and plant oils, would prevent 3.28 million CVD events and 0.12 million diabetes cases, gain 8.4 million quality-adjusted life years, and save \$100.2 billion in formal health care costs.
<p><i>Participation in a Farmers' Market Fruit and Vegetable Prescription Program at a Federally Qualified Health Center Improves Hemoglobin A1C in Low Income Uncontrolled Diabetics, (2017).</i>²⁹</p>	<ul style="list-style-type: none"> • In a pre-post intervention study (sample size = 65 individuals), a fruit and vegetable prescription program at a Federally Qualified Health Center led to decreased HbA1c levels in patients with uncontrolled type 2 diabetes living in a low-income neighborhood in Detroit. • Patients receiving produce prescriptions of \$10 / week for 4 weeks at a clinic in Detroit had a decrease in HbA1c from 9.54% to 8.83% (p=0.001).
POPULATION-LEVEL HEALTHY FOOD PROGRAM AND ANTI-HUNGER PROGRAMS	
<p><i>Financial Incentives Increase Fruit and Vegetable Intake among Supplemental Nutrition Assistance Program Participants: A Randomized Controlled Trial of the USDA Healthy Incentives Pilot, (2016).</i>³⁰</p>	<ul style="list-style-type: none"> • In a randomized controlled trial (sample size = 7,500 SNAP households) in Hampden County, Massachusetts, recipients of a 30% rebate on fresh produce purchased with SNAP benefits at retail grocers consumed 26% more fruits and vegetables than households receiving normal SNAP benefits (p<001). • Researchers also found a decrease in refined grain intake and higher overall Healthy Eating Index scores for recipients of the 30% rebate.
<p><i>Addressing Unmet Basic Resource Needs as Part of Chronic Cardiometabolic Disease Management, (2017).</i>³¹</p>	<ul style="list-style-type: none"> • In a difference-in-difference evaluation (sample size = 5,125 individuals), primary care patients screened for unmet social and nutrition needs using the Health Leads program were referred to community-based nutrition assistance programs. • The evaluation found improvements in blood pressure (p<.05) and cholesterol levels (p<.05), but not blood glucose level when compared with the control group.

Despite strong evidence of the ability of Food is Medicine interventions to promote health outcomes and reduce health care costs, access remains limited across Massachusetts and throughout the United States. While Massachusetts is home to several pioneering programs, the majority of Food is Medicine programs are still small in scale and operate primarily on grants and charitable donations. Massachusetts can be at the forefront of health care innovation if Food is Medicine interventions are adequately scaled and sustainably funded in a new era of delivery and payment reform.

Why Now? A Moment of Opportunity for Food is Medicine

The Massachusetts health care system is currently in a period of transformation that has the potential to create important new opportunities to expand investment in Food is Medicine interventions.

1. NEW MASSHEALTH ACO STRUCTURE

In 2018, MassHealth, the Massachusetts Medicaid program, transitioned over 800,000 members into Accountable Care Organizations (ACOs).³²

MassHealth ACOs provide a unique opportunity to integrate Food is Medicine interventions into the state's Medicaid services as program requirements and financial incentives shift to better address the needs of MassHealth members and leverage community-based resources. For example, MassHealth will require ACOs to screen patients for health-related social needs, including food insecurity.³³ Starting in January 2020, ACOs will also receive

Flexible Services funding that can be used to provide access to services that respond to health-related social needs, including Food is Medicine interventions.

2. HEALTH-FOCUSED FOOD SYSTEM TRANSFORMATION

Simultaneously, the public has begun to recognize the health impacts of a broken food system, calling on local and national leaders to alter food and agriculture policies to improve access to nutritious foods, incentivize healthier choices, and create healthier food environments. Massachusetts is home to a thriving local food system with a robust network of health-oriented stakeholders. The Massachusetts Local Food Action Plan, enacted in 2015, promotes a health-focused food system transformation in Massachusetts and has charged a Food Access, Security, and Health working group with overseeing implementation of relevant recommendations.³⁴

FOOD INSECURITY SCREENING: A METHOD OF IDENTIFYING NUTRITIONAL RISK

Screening for food insecurity allows health care providers to quickly identify patients who lack consistent access to enough food for a healthy, active life. Health care providers in Massachusetts report using a number of validated food insecurity screening tools, such as the Hunger Vital Sign™. Providers who use the Hunger Vital Sign™ ask their patients two questions:

1. Within the past 12 months, we worried whether our food would run out before we got money to buy more.

- Often true Sometimes true Never true Don't know/refused

2. Within the past 12 months, the food we bought just didn't last and we didn't have money to get more.

- Often true Sometimes true Never true Don't know/refused

If the patient answers "often true" or "sometimes true" to either or both statements, the household is considered food insecure (the screening is positive).

For many people - in particular those living with or at risk for a chronic or acute illness - referral to a Food is Medicine intervention is an appropriate response to a positive screen.

The Massachusetts Food is Medicine State Plan

The Massachusetts Food is Medicine State Plan builds on the momentum of recent health and food systems change in the Commonwealth by providing the data and strategies necessary to systematically expand access to Food is Medicine interventions.

THREE GOALS OF THE STATE PLAN:

1. ASSESS THE CURRENT NEED FOR FOOD IS MEDICINE INTERVENTIONS:

Using data provided by the Massachusetts Department of Public Health, Feeding America, and public sources such as the Massachusetts Cancer Registry, the State Plan initiative identifies areas of the state that have a high need for Food is Medicine interventions due to the confluence of high levels of diet-related chronic disease burden, food insecurity, and lack of accessible and reliable transportation.

2. ASSESS CURRENT ACCESS TO FOOD IS MEDICINE INTERVENTIONS:

While Massachusetts is home to a number of innovative Food is Medicine programs, until now there has been no centralized, up-to-date information on the reach and availability of these services. Over the course of the last year, the State Plan initiative used surveys and regional listening sessions to gather data on current access to Food is Medicine interventions across the state, as well as information about beliefs and practices of health systems, providers, payers, and community based organizations (CBOs) related to Food is Medicine.

3. DEVELOP RECOMMENDATIONS TO SCALE UP ACCESS TO MEET CURRENT NEED:

Based on learnings from the surveys, regional listening sessions, focused interviews with program participants, and guidance from our Food is Medicine Planning Council, the State Plan includes fifteen recommendations to improve access to the full spectrum of Food is Medicine interventions across Massachusetts. **The *Food is Medicine 15* begin on page 17.**

This is only the beginning of a broader effort to make access to Food is Medicine interventions match the need in our state. The true success of the Massachusetts Food is Medicine State Plan initiative will depend on the ability to build support for Food is Medicine interventions and drive implementation of these recommendations. **See page 40 for immediate next steps and more information on how you can become involved in this effort.**

We acknowledge that the State Plan is part of a bigger movement working to connect our food and health care systems. The continued existence of a strong network of robustly funded anti-hunger and safety net programs in Massachusetts, including WIC, SNAP, and the Healthy Incentives Program (HIP) is vital to the success of the State Plan.

Moreover, we recognize that the disparities within our health and food systems are persistent and are often the result of both explicit and institutional discrimination on the basis of race, class, disability, sex, ethnicity, and other factors. The State Plan is therefore only the first step of a longer and more thorough exploration and process. We look forward to future iterations of this work that more fully respond to historic injustices with coordinated food and agricultural policies that support health and public health.

Methodology & Results

STAKEHOLDER SURVEYS, LISTENING SESSIONS, AND PROGRAM PARTICIPANT INTERVIEWS: METHODS

STAKEHOLDER SURVEYS

We created three surveys targeting the following professional groups: 1) health insurers, 2) health care providers, and 3) CBOs providing food and nutrition services. The surveys gathered information on three main components of Food is Medicine programs in Massachusetts:

- 1) The number of CBOs involved in administering Food is Medicine interventions in Massachusetts and their current capacities.
- 2) Health insurer and provider operations including food insecurity screening and referral practices, Food is Medicine services provided, and funding streams.
- 3) Health insurer and provider perceptions concerning the importance of Food is Medicine interventions to their work.

In total, we received responses from 10 health insurance organizations, including the vast majority of insurers involved in the MassHealth and ConnectorCare programs, 101 health care providers and provider organizations, and 104 CBOs.

LISTENING SESSIONS

The State Plan listening sessions were designed to gather feedback from community members and professionals experienced with or interested in Food is Medicine interventions, in addition to gathering details on the operation and funding of current Massachusetts-based Food is Medicine programs. The majority of attendees were health care providers (physicians, nurses, dietitians, social workers, etc.), professionals from CBOs, and representatives from health

insurers; others in attendance included researchers, representatives from philanthropic organizations, and government officials. Eleven listening sessions occurred from March 2018 through July 2018 across the seven regions of the state with 185 participants.

PROGRAM PARTICIPANT INTERVIEWS

To ensure the perspectives of people who receive Food is Medicine interventions were represented in our data, we interviewed program participants about their experiences and personal preferences regarding the services they received. Organizations from each region of the state were invited to assist in participant recruitment. In total, 12 program participant interviews were conducted.

LIMITATIONS

We did not employ a randomized, representative sampling method for the State Plan surveys and listening sessions. Although, our goal was to have a single response from each major institution, participation was voluntary. This could have introduced some bias based on which institutions participated and who attended the listening session or took the survey on behalf of their organization. Our results may be skewed in favor of institutions and professionals who were already interested in the intersection of food and health.

RESULTS

The data from our State Plan surveys, listening sessions, and program participant interviews show that change is required across five areas to systemically improve access to Food is Medicine interventions. Results organized by focus area include descriptive statistics from the State Plan surveys, the most frequently cited listening session themes (12 in total), and themes and quotes from the program participant interviews. **See Table 2: Stateholder Survey, Listening Session, and Program Participant Interview Results.**

Table 2: Stateholder Survey, Listening Session, and Program Participant Interview Results

PROVIDER KNOWLEDGE AND SCREENING: IDENTIFYING FOOD AND NUTRITION NEEDS IN THE HEALTH CARE SETTING			
STATE PLAN FOCUS AREA 1	State Plan Surveys	Listening Session	Program Participant Interviews
		<ul style="list-style-type: none"> 80% of health care respondents said food insecurity screening was beneficial to patient care. Only 24% of health care respondents said that their organization has a standardized food insecurity screening protocol. Health care providers cited lack of time (63%), institutional support (49%), and funding (46%) as the biggest barriers preventing food insecurity screening in clinical settings. 41% of health care respondents said that food insecurity screening results were tracked in the electronic health records; only 12% specified that the diagnostic code for food insecurity was used. 	<p>There is a lack of time with patients to discuss food insecurity within the demands of the health care system. Often, minimal provider knowledge of food insecurity and nutrition limits responsive action. If food insecurity screening is taking place in a health care setting, screening and referral procedures are rarely standardized. Within the clinical setting, there is little financial incentive for physicians to screen for food insecurity or malnutrition.</p>
PATIENT REFERRAL AND CONNECTION: SUPPORTING PATIENT CONNECTION TO APPROPRIATE RESOURCES			
STATE PLAN FOCUS AREA 2	State Plan Surveys	Listening Session	Program Participant Interviews
	<ul style="list-style-type: none"> For institutions that do screen for food insecurity, 35% have no follow-up treatment plan for patients. 68% of health care respondents reported that their organization faces barriers in referring patients to food and nutrition resources. Health care providers cited lack of knowledge of available resources (57%), lack of time (54%), and lack of funding (46%) as the principal barriers preventing referrals to Food is Medicine interventions. Less than half of health care respondents (43%) said their organization hopes to expand treatment and referral options for food-insecure patients. 	<p>Health care providers expressed confusion regarding implementation of health-related social needs screening and referral protocols within the new MassHealth ACOs. There is a clear need for improved communication and referral channels between clinics and CBOs. Additionally, community health workers, nurses, social workers, Registered Dietitian Nutritionists, and Certified Diabetes Educators should play a key role in connecting patients to Food is Medicine interventions.</p>	<p>Social workers, patient navigators, and nurses were typically the team members who informed interviewees about their Food is Medicine interventions.</p>
HIGH-QUALITY, APPROPRIATE SERVICES AVAILABLE IN THE COMMUNITY: SUPPORTING COMMUNITY-BASED ORGANIZATIONS, FOOD IS MEDICINE SERVICES, AND PROGRAMMING			
STATE PLAN FOCUS AREA 3	State Plan Surveys	Listening Sessions	Program Participant Interviews
	<ul style="list-style-type: none"> 60% of CBO respondents do not measure the impact of their program. 30% of CBO respondents said they have plans to expand Food is Medicine programming. CBOs cited lack of funding (43%), lack of capacity (45%), and lack of expertise (41%) as barriers preventing the expansion of Food is Medicine programs. Diabetes, cardiovascular disease, and renal disease are the most common diagnoses targeted by Food is Medicine interventions. 	<p>CBOs should maximize patient engagement by addressing the constraints of poverty within the Food is Medicine intervention design (i.e., addressing transportation and accessibility).</p>	<p>Interviewees most valued easy, non-invasive onboarding processes; choice and variety in foods; fresh foods and produce; and home-delivered meals or convenient pick-up locations accessible by public transit.</p> <p>Factors affecting enrollment included individual perception of health status and quality and taste of the food.</p> <p>Interviewees reported improvements in health status, food security, and financial status.</p>

SUSTAINABLE FUNDING FOR FOOD IS MEDICINE INTERVENTIONS

STATE PLAN FOCUS AREA 4

State Plan Surveys

- 45% of insurer respondents do not have any plan option that covers Food is Medicine interventions.
- Only 18% of CBOs providing Food is Medicine interventions said they receive any funding from insurance.
- No insurance respondents were covering medically tailored food programs or produce prescription/ voucher programs.
- 60% of insurer respondents said their organization believes it is beneficial to pay for Food is Medicine interventions.

Listening Sessions

Expansion of Food is Medicine services would be possible with insurance reimbursement. Current dependency on grants, donations, and volunteers limits the scalability and sustainability of Food is Medicine interventions.

Program Participant Interviews

Current anti-hunger programs alone are often not adequate for food-insecure or malnourished patients:

“My SNAP card would probably only last half a month and I would be struggling majorly, which is what I did before... You can’t afford a lot of fruits and vegetables. So you end up doing what you have to do to fill your belly, and it’s almost never good for you. Something has to give when you don’t have the money to buy good food.”

SYSTEMS TRANSFORMATION AND LEADERSHIP ENGAGEMENT

STATE PLAN FOCUS AREA 5

State Plan Surveys

- While 60% of insurer respondents said that covering Food is Medicine interventions is beneficial to their organization’s mission and patient outcomes, only 10% said their organization plans to expand or hopes to expand coverage in the future.
- 49% of health care respondents expressed a lack of institutional support for food insecurity screenings.
- 37% of health care respondents expressed a lack of institutional support for referring patients to CBOs.

Listening Sessions

It would be beneficial to better engage health care leaders to promote Food is Medicine programming, including MassHealth, insurance companies, and hospitals. Listening session participants highlighted the Healthy Incentive Program’s role in healthy food access for Massachusetts SNAP households and its role in supporting rural Massachusetts agricultural economies.

Program Participant Interviews

Expansion of Food is Medicine programs would benefit interviewees in numerous ways:

“I could pass out quite often if it weren’t for the ready meals. The meals were kind of like a reminder that I am a diabetic and I need to watch what I eat. So it forces me to eat meals at mealtime and not skip anything.”

“It changes what you eat...I look for things in the super market trying to balance the food plate. Couple ounces of protein, couple ounces of carbohydrate, and all the rest vegetables and fruits.”

GEOSPATIAL ANALYSIS: METHODS

PRIORITY LEVEL ANALYSIS

To understand the landscape of Food is Medicine interventions across the Commonwealth, we used geographic information systems (GIS) software to map the need for these services against current access to Food is Medicine interventions. Three factors were identified that indicated the need for Food is Medicine interventions: a high level of food insecurity, a lack of accessible and reliable transportation, and a high burden of diet-related chronic diseases. **See Table 3: Food is Medicine Indicators of Need, and Figures 1.A, 1.B, and 1.C.**

Chronic disease burden, food insecurity, and vehicle access scores for each town were then added through a final weighted sum analysis to generate Food is Medicine Priority Scores for each town. Within the model, food insecurity and chronic disease burden scores were weighted twice that of vehicle access scores, because they are most reflective of the need for Food is Medicine interventions. Sums for each town were once again categorized by Natural Breaks (Jenks), indicating four different Food is Medicine priority levels: low, moderately low, moderately high, and high priority. **See Figure 1.D.**

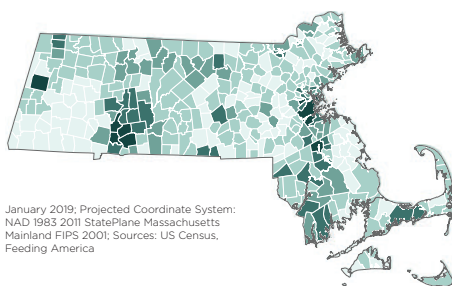
Table 3: Food is Medicine Indicators of Need

Food is Medicine Indicators of Need	Rationale															
<p>A high level of food insecurity</p>	<p>Food insecurity is strongly associated with poor health outcomes, greater health care utilization, and higher health care costs. Higher food insecurity rates for a town may signal a greater need for Food is Medicine interventions.</p> <p>Food insecurity information was obtained from the 2016 Map the Meal Gap data report from Feeding America.³⁵ See Figure 1.A.</p>															
<p>A lack of accessible and reliable transportation</p>	<p>Residents across the state, even in urban cores such as Boston, asserted that a lack of accessible and reliable transportation was a major barrier to accessing nutritious food. Low vehicle access may signal a greater need for Food is Medicine interventions.</p> <p>Household vehicle access data was derived from the American Community Survey 2012-2016 as an indicator of accessible and reliable transportation. See Figure 1.B.</p>															
<p>A high burden of diet-related chronic diseases</p>	<p>Diet-related chronic diseases are now the leading cause of death in the United States.³⁶ A higher prevalence of diet-related, chronic disease for a town may signal a greater need for Food is Medicine interventions.</p> <p>To identify chronic health conditions associated with food insecurity, we reviewed scientific, peer-reviewed literature published 2000-2018.³⁷ This review focused on conditions for which: (1) food insecurity played a role in causing the condition, and/or (2) nutrition interventions played a role in treating the condition. Initial literature review results were then evaluated based on the statistical strength of the association between specific health conditions and food insecurity. The list was then cross-checked with available data from the Massachusetts Department of Public Health. Overall, thirteen chronic health conditions were included in our mapping. See Figure 1.C.</p> <table border="0"> <tr> <td>1. HIV</td> <td>6. Asthma</td> <td>10. Prostate Cancer</td> </tr> <tr> <td>2. Cardiovascular Disease</td> <td>7. Depression</td> <td>11. Breast Cancer</td> </tr> <tr> <td>3. Stroke</td> <td>8. Lung and Bronchus Cancers</td> <td>12. Ovarian Cancer</td> </tr> <tr> <td>4. Diabetes</td> <td>9. Colon and Rectal Cancers</td> <td>13. Leukemia</td> </tr> <tr> <td>5. Obesity</td> <td></td> <td></td> </tr> </table>	1. HIV	6. Asthma	10. Prostate Cancer	2. Cardiovascular Disease	7. Depression	11. Breast Cancer	3. Stroke	8. Lung and Bronchus Cancers	12. Ovarian Cancer	4. Diabetes	9. Colon and Rectal Cancers	13. Leukemia	5. Obesity		
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4. Diabetes	9. Colon and Rectal Cancers	13. Leukemia														
5. Obesity																

FOOD IS MEDICINE INDICATORS OF NEED

Figure 1.A

FOOD INSECURITY



January 2019; Projected Coordinate System: NAD 1983 2011 StatePlane Massachusetts Mainland FIPS 2001; Sources: US Census, Feeding America

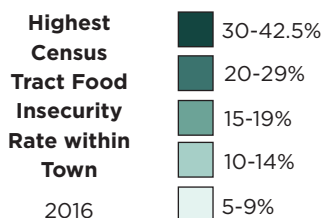
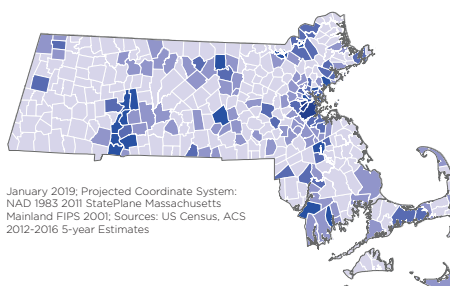


Figure 1.B

VEHICLE ACCESS



January 2019; Projected Coordinate System: NAD 1983 2011 StatePlane Massachusetts Mainland FIPS 2001; Sources: US Census, ACS 2012-2016 5-year Estimates

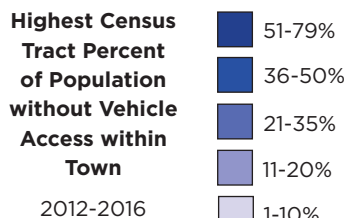
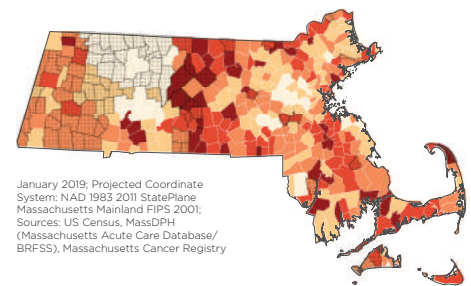
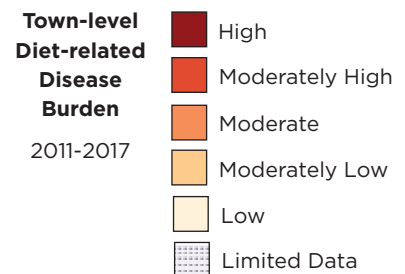


Figure 1.C

DIET-RELATED CHRONIC DISEASE BURDEN

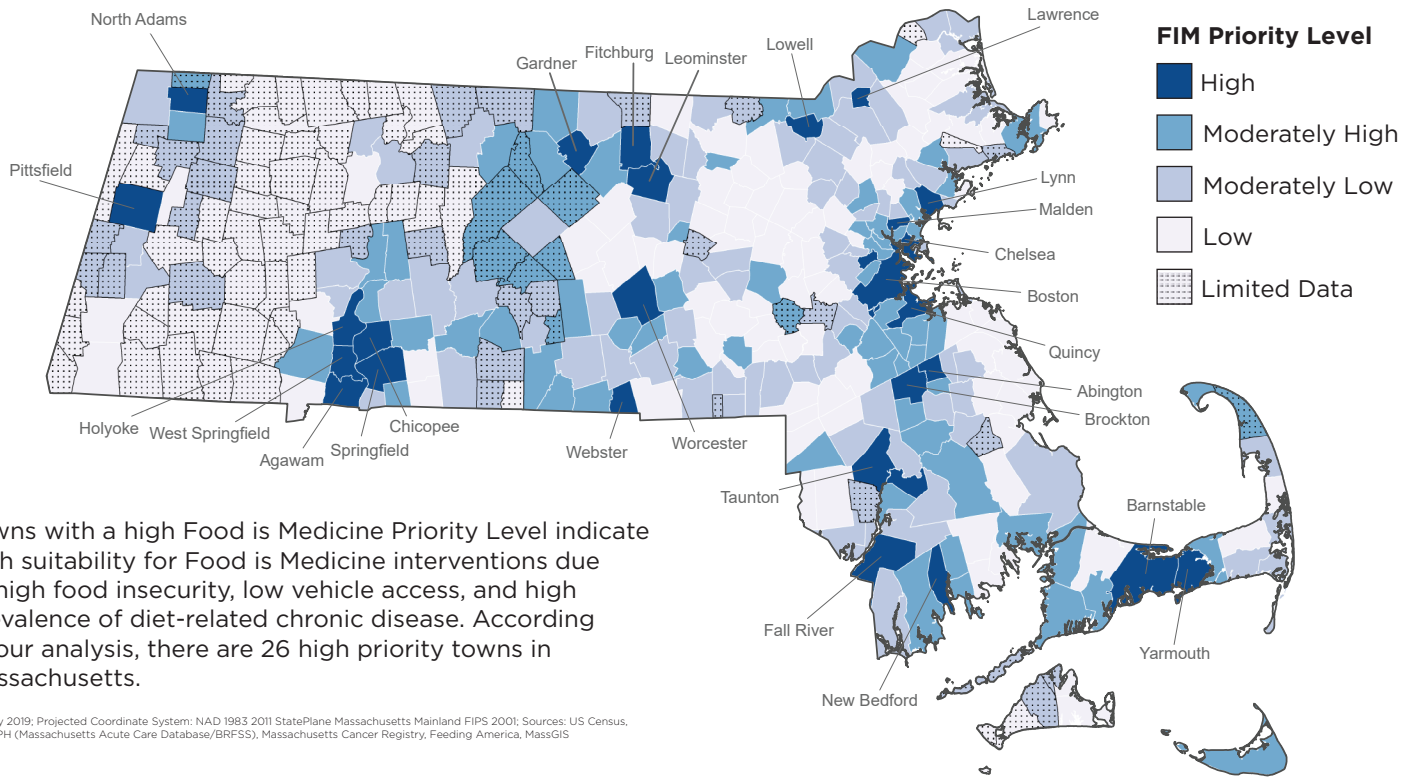


January 2019; Projected Coordinate System: NAD 1983 2011 StatePlane Massachusetts Mainland FIPS 2001; Sources: US Census, MassDPH (Massachusetts Acute Care Database/BRFSS), Massachusetts Cancer Registry



FOOD IS MEDICINE PRIORITY LEVEL ANALYSIS MASSACHUSETTS 2018

Figure 1.D



Towns with a high Food is Medicine Priority Level indicate high suitability for Food is Medicine interventions due to high food insecurity, low vehicle access, and high prevalence of diet-related chronic disease. According to our analysis, there are 26 high priority towns in Massachusetts.

January 2019; Projected Coordinate System: NAD 1983 2011 StatePlane Massachusetts Mainland FIPS 2001; Sources: US Census, MassDPH (Massachusetts Acute Care Database/BRFSS), Massachusetts Cancer Registry, Feeding America, MassGIS

FOOD IS MEDICINE PROGRAM MAPPING

We used information reported from self-identified Food is Medicine programs obtained from our surveys and listening sessions to map the current access to Food is Medicine programs and food insecurity screening across the Commonwealth. Prior to mapping, we reached out to CBOs to verify program details and some adjustments were made in program categorization. **See Figure 2: Food is Medicine Programs.**

RESULTS

PRIORITY LEVEL ANALYSIS

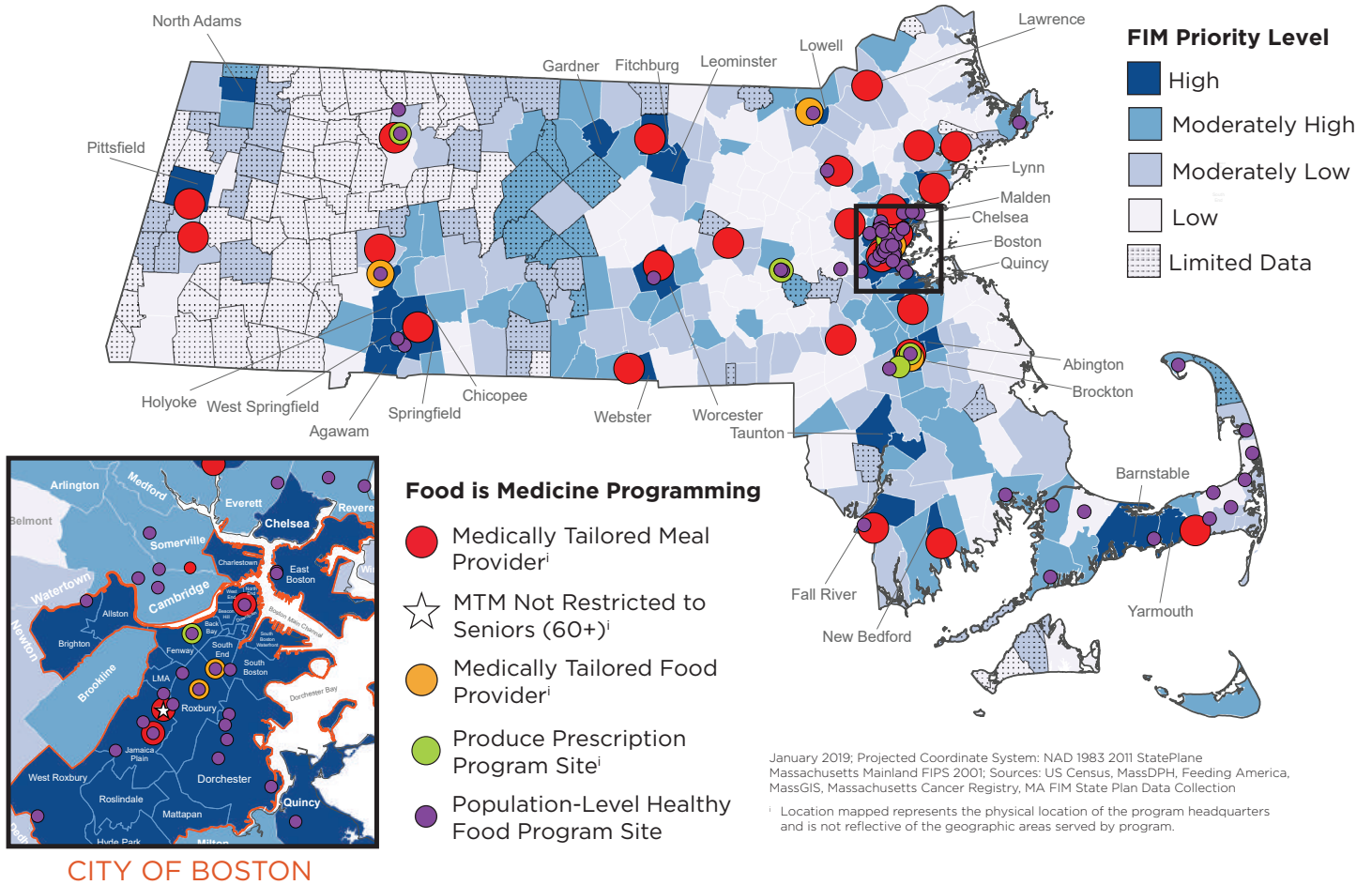
We identified 26 high priority municipalities in Massachusetts and 72 municipalities with a moderately high priority level. These locations should be priorities for future investment in expanding Food is Medicine services.

HIGH PRIORITY TOWNS FOR FOOD IS MEDICINE INTERVENTIONS

- | | | | |
|------------|------------|-------------|------------------|
| Abington | Fall River | Lynn | Taunton |
| Agawam | Fitchburg | Malden | Webster |
| Barnstable | Gardner | New Bedford | West Springfield |
| Boston | Holyoke | North Adams | Worcester |
| Brockton | Lawrence | Pittsfield | Yarmouth |
| Chelsea | Leominster | Quincy | |
| Chicopee | Lowell | Springfield | |

Figure 2: Food is Medicine Programs

FOOD IS MEDICINE PROGRAMS MASSACHUSETTS 2018



FOOD IS MEDICINE PROGRAM MAPPING

In 2017, there were 736 food pantries, meal programs, food rescue organizations, and produce voucher programs in Massachusetts.³⁸ Based on our State Plan surveys and data verification process, we captured 63 programs that self-identified as working with health care partners and/or tailoring food to medical conditions:³⁹

- 26 Medically Tailored Meal Delivery Providers (Only 1 is not restricted to seniors)
- 5 Medically Tailored Food Providers
- 5 Produce Prescription/Voucher Programs
- 27 Population-Level Healthy Food Programs

The Food is Medicine Program map shows where these Food is Medicine programs are located in Massachusetts. Based on self-reported program details, several organizations offer multiple Food is Medicine services, which are depicted by the overlapping circles on the map.⁴⁰ Some programs, such as Greater Boston Food Bank’s mobile market, Fresh Truck’s mobile market, Fair Foods’ mobile market, Lower Cape Outreach Council, Cape Cod Health Care, and Project Bread, also have multiple program sites which have all been individually identified.

DISCUSSION

The results of our geospatial analysis reveal a number of key gaps and trends in Food is Medicine programming across the state.

GAPS AND TRENDS

- Non-age restricted medically tailored meal delivery programs are limited across the state.
 - While 26 organizations offer medically tailored meals, all but one of these programs limit their services to individuals 60 years or older. This leaves Community Servings as the only provider of medically tailored meals serving individuals under the age of 60 in the state. As of 2018, 66% of Community Servings medically tailored meal recipients were under the age of 60. This highlights the need for more age-inclusive medically tailored meal delivery services across the state.
- Medically tailored food services and produce prescription/voucher programs are limited throughout the state.
- The number of population-level healthy food program sites across the state illustrate the growing interest in connecting food and health within the emergency food system.
- Food is Medicine programs need to expand the variety of conditions they are addressing. State Plan survey results revealed extreme differences in the

number of diet options available and cross-prescribing ability of Food is Medicine programs.

- There is a lack of consensus on Food is Medicine intervention definitions, nutrition standards, and client/patient eligibility for various services.

LIMITATIONS

The State Plan maps used publicly available data. In some cases, numerous town-level statistics have been suppressed due to low sample sizes and high confidence intervals. For these areas, there is more uncertainty regarding the burden of chronic disease in particular. The priority level of towns with limited data should be interpreted with caution.

The Food is Medicine programs identified on our State Plan maps are based on survey responses and our data verification process. There may be additional Food is Medicine programs operating within the state.

All information regarding Food is Medicine programming is self-reported. Program details, definitions, eligibility requirements, and nutrition standards vary greatly. Food is Medicine intervention categorization was determined through definitions provided within State Plan surveys and post-survey data verification conversations. Additionally, maps do not depict geographic service areas for Food is Medicine interventions nor the number of clients served.

For more information regarding our geospatial analysis, visit our website: www.FoodisMedicineMA.org.

FOOD IS MEDICINE CBO:

“It costs money to make food with better and more nutritious ingredients, and to have a variety. But again, we are not funded enough to do that.”

Where We Go From Here: A Vision for the Integration of Food into the Health Care System

The State Plan provides a blueprint to building a health care system that recognizes the critical relationship between food and health, and ensures access to the nutrition services our residents need to prevent, manage, and treat diet-related illness. For too long, our food and health systems have existed in silos, with isolated pockets of innovation bridging the divide but failing to reach every community in Massachusetts.

The Food is Medicine State Plan recognizes our state's depth of expertise and experience

in connecting people with food - and in going above and beyond to ensure that food is healthy whenever possible. But more can and should be done to support the integration of food and health systems.

The data we gathered from our listening sessions, surveys, interviews, and geospatial analysis shines a light on access gaps and helps us visualize the Massachusetts health care system of the future, the system we need to achieve our collective goal of outcome-driven, cost-effective, person-centered care.

We envision a health care system where...

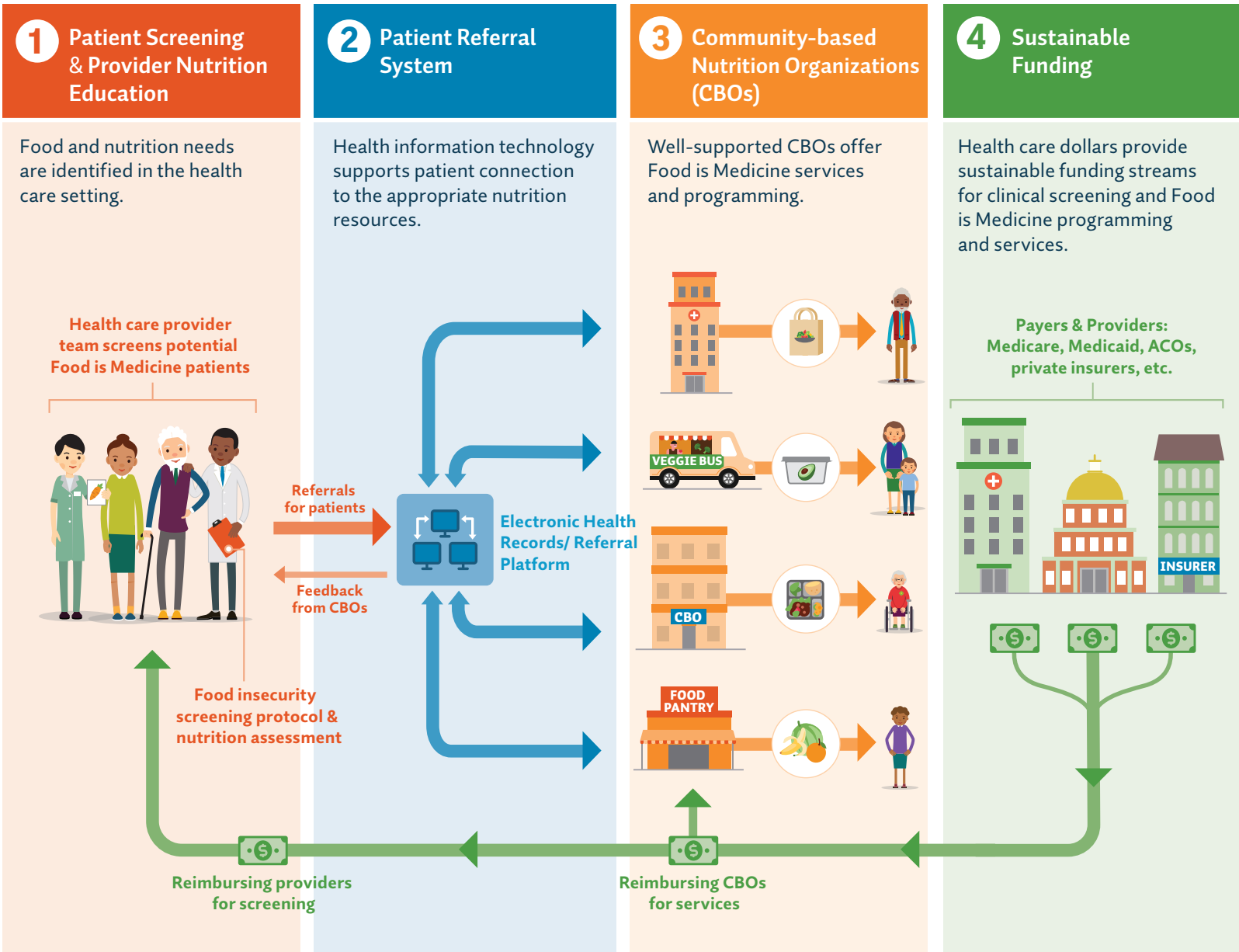
- All health care providers on a patient's care team are knowledgeable about the role that food and nutrition play in prevention, management, and treatment of diet-related acute and chronic diseases;
- Providers screen patients for food insecurity or, as appropriate, malnutrition;
- Providers feel empowered to respond quickly and effectively to a patient's nutrition needs with a referral to an appropriate nutrition resource;
- Community-based service providers can communicate back to the health care provider about the patient's connection to nutrition resources;
- There are a number of high-quality, medically tailored food and nutrition services, ranging from a medically tailored meal to a produce voucher, available to patients who reside in any community across the Commonwealth;
- Community-based nutrition service providers are well-resourced and sustainably funded through payments for their Food is Medicine services, and offer evidence-based Food is Medicine interventions that meet standards developed by experts in the field;
- The term "health care reform" encompasses and explicitly supports nutrition-sensitive health care systems for the benefit of patients, providers, payers, and the broader community;
- The leaders of our health care and food systems come together to pursue a coordinated, transformative change at these systems' nexus that will resonate more broadly in each arena;
- Leadership in the public and private sectors are fully engaged in ensuring that the value of Food is Medicine interventions is known and championed;
- Patients trust their treatment plans will address the root causes of their diet-related disease and offer a pathway to health and well-being.

Roadmap for Change in Five Focus Areas

Improving access to Food is Medicine interventions

Research has shown that **Food is Medicine** interventions can play a powerful role in improving health outcomes and controlling health care costs. However, access to these interventions remains limited.

Our vision: a health care system where food & nutrition interventions are fully integrated into care.



5 Systemic change throughout private and public sectors to support Food is Medicine

Explicit support and concrete commitments from:

- Providers
- Payers
- Community-based organizations
- State & federal policy makers
- Philanthropy
- Advocacy groups

FOOD IS MEDICINE 15

The Food is Medicine 15 is a set of recommendations developed in partnership with the Massachusetts Food is Medicine Planning Council and countless others who have given their time, support, and input to this initiative. Many Planning Council members have been on the front lines of this work for years. Others are newly energized by the research that shows Food is Medicine's positive impact on health outcomes, health care costs, and the lives of the people served by existing programs.

In the Massachusetts Food is Medicine State Plan, we speak with one voice – as health care providers, health care payers, CBOs, researchers, and advocates – in asserting the belief that access to Food is Medicine interventions should equal the level of need. The recommendations in this plan, the **Food is Medicine 15**, identify specific steps that we must take to realize the integrated system that Massachusetts residents deserve.

The Food is Medicine 15 , organized by State Plan Focus Areas:

- 1. Provider Knowledge and Screening**
Recommendations 1-3
- 2. Patient Referral and Connection**
Recommendations 4-6
- 3. High-Quality, Appropriate Services Available in the Community**
Recommendations 7-8
- 4. Sustainable Funding for Food is Medicine Interventions**
Recommendation 9
- 5. Leadership Engagement and System Transformation**
Recommendations 10-15

State Plan Focus Area 1

PROVIDER KNOWLEDGE AND SCREENING: IDENTIFYING FOOD AND NUTRITION NEEDS IN THE HEALTH CARE SETTING

The Vision

- Physicians, other clinicians (e.g. nurses and physician assistants), community health workers, and oral health providers, receive education on integrating nutrition interventions into patient care, specifically with regard to prevention of illness and chronic disease management.
- Standardized food insecurity and malnutrition screenings are regularly used in clinical settings and recorded in electronic health records.

RECOMMENDATION #1

Physicians, other members of the health care team, and their professional societies, should work together to improve provider nutrition education and referral capacity by:

- Creating continuing education courses that allow health professionals to learn about: the role of nutrition in optimal disease management; best practices for food insecurity screening and referral to resources; and current payment mechanisms for Food is Medicine interventions.**
- Improving provider nutrition knowledge by promoting additions to curricula and licensing exams.**

Few health professionals currently receive adequate nutrition education. Seventy-one percent of 121 surveyed medical schools in the United States said they fail to provide the recommended 25 hours of nutrition education to students, and less than half reported teaching any nutrition in clinical practice.⁴¹ As a result, few practicing physicians feel qualified to offer nutritional advice to their patients.⁴² Though several Massachusetts medical schools have recently made efforts to increase nutrition education, participants in the State Plan regional listening sessions voiced the need for improvement. Because referrals

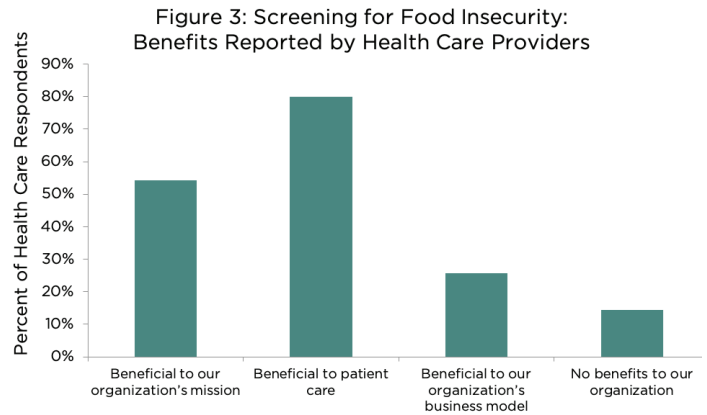
to food insecurity services are often made by various members of the care team, every care team member should be equally well-equipped to understand the relationship between food and health and make appropriate referrals to community-based Food is Medicine resources.

To realize a future where all health professionals on a patient's care team are better prepared to address nutritional needs, Massachusetts providers and nutrition experts must work together with their professional associations to address gaps in provider nutrition education. In particular, we recommend that Massachusetts

HEALTH CARE PROVIDER:

“In order to build champions for food/nutrition issues in health care systems, there needs to be greater availability of continuing education on these topics, particularly among physicians. Physicians have a lot more sway with hospital leaders than other staff. It would also be helpful to create more continuing education opportunities for groups such as nurses and registered dietitians regarding Food is Medicine.”

health and nutrition-focused professional societies develop and promote continuing education modules that will equip a broad spectrum of health professionals—including physicians, nurse practitioners, nurses, physician assistants, social workers, oral health professionals, and others—to identify and refer patients with nutritional needs to Food is Medicine services. Additionally, we recommend that these groups support ongoing efforts to incorporate more nutrition content into medical education and the licensing exams that often drive curricula.



Source: Massachusetts Food is Medicine State Plan Health Care Provider Survey

TASK FORCE

To begin to implement Recommendation #1, we will convene a Provider Nutrition Education and Referral Task Force. See Next Steps on page 40 for more information about this Task Force.

DECISION-MAKER

REQUESTED ACTIONS

Professional Societies



Massachusetts professional societies should develop and promote continuing education modules on Food is Medicine topics.

Leadership of Massachusetts Medical and Dental Degree Programs (Graduate and Undergraduate)



Massachusetts medical and dental degree programs should:

- Evaluate current nutrition education programming;
- Include nutrition education in dental education; and
- Include a minimum of 25 hours of nutrition education in medical school curricula, per the National Research Council's recommendations.

Licensing Exam Bodies (e.g. National Board of Medical Examiners)



National licensing exam bodies should incorporate additional nutrition-related questions in licensing exams.

HEALTH CARE PROVIDER:

“There is an ongoing question of who on the care team “owns” the screening process. Should it be physician assistants, physicians, etc.? How can this role best be staffed? To improve the patient experience and encourage more engagement on these issues, it could be helpful to designate a member of the staff other than the physician whose role is to meet with patients specifically about social determinants of health.”

RECOMMENDATION #2

MassHealth should issue guidance on food insecurity and malnutrition screening protocols and identify best practices for referrals for all MassHealth members. This guidance should:

- a. Encourage the use of a validated food insecurity screening tool, such as The Hunger Vital Sign™ (see page 6).**
- b. Require screening and referral results to be tracked individually and in the aggregate for each health care organization serving MassHealth patients.**
- c. Put forward best practices for social needs screening and referrals in the MassHealth Accountable Care Organization (ACO) model.**

The Centers for Medicare and Medicaid Services (CMS), the American Academy of Pediatrics, the American Diabetes Association, the Academy of Nutrition and Dietetics, and AARP strongly support screening patients for food insecurity and connecting patients to food resources.^{43,44,45}

Only 24% of Massachusetts health care providers stated in our State Plan surveys that their organizations had a standardized protocol for food insecurity screening, and 63% acknowledged that their organizations face barriers to implementing screening. Of those health care providers who are screening, only 41% reported tracking screening results in the patient's electronic health record.

With the rollout of its innovative new ACO system, which will require screening for health-related social needs, MassHealth has an important opportunity to improve the quality and consistency of social needs screening and referral across the Commonwealth. We recommend that MassHealth seize this

opportunity by issuing guidance regarding screening and referral protocols both within and outside of the ACO model. This document should highlight the importance of using a validated tool, such as The Hunger Vital Sign™, when screening for food insecurity or malnutrition. The guidance should also describe best practices for referring patients to reliable community-based services. Finally, recognizing the connection between different health-related social needs, MassHealth should require tracking of screening and referral data (both for food insecurity and other social needs) for all MassHealth beneficiaries, including those outside of the ACO environment.

By providing detailed guidance and training, MassHealth will increase the likelihood that providers will use uniform processes to address health-related social needs in their patient populations, which is essential to improving health outcomes, reducing health care costs, and promoting health equity across the Commonwealth.

DECISION-MAKER

MassHealth



REQUESTED ACTIONS

- Encourage the use of a validated food insecurity screening tool, such as The Hunger Vital Sign™.
- Require food insecurity screening and referral results to be tracked in patient electronic health records for all MassHealth enrollees.
- Put forward best practices for health-related social needs screening and referrals in the MassHealth ACO model and organize trainings for physicians and other clinical team members.

RECOMMENDATION #3

Commercial insurers operating in Massachusetts, including those that offer Medicare Advantage plans, should:

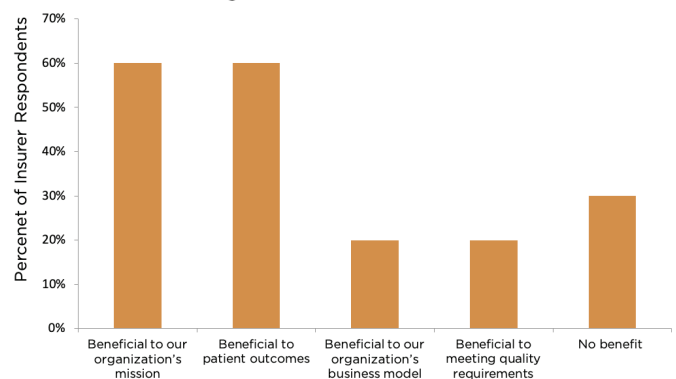
- Ensure that food insecurity screening and referrals are part of their care coordination and case management programs.**
- Encourage and incentivize their provider networks to perform food insecurity screening and make resource referrals part of patient care.**

As food insecurity is associated with higher overall health care expenditures, both public and commercial health care payers have an incentive to identify and address food insecurity within their beneficiary populations. Commercial insurers, including those that offer Medicare Advantage plans in Massachusetts, should ensure that insurer-based case management or care coordination programs institute health-related social needs screening and resource referrals for members as a standard practice.

Massachusetts seniors, in particular, are at a heightened risk for food insecurity: Massachusetts has the second highest rate of economic insecurity among seniors in the country⁴⁶ and only 61% of eligible Massachusetts seniors participate in SNAP.⁴⁷ Food is Medicine services are therefore particularly relevant for Medicare Advantage providers in the state.

Insurers should also incentivize screening for food insecurity in the clinical setting by the member's health care provider team. For example, insurer contracts with physicians and hospitals could include financial rewards for conducting food insecurity screening, either by paying providers for conducting the screening itself or by embedding screening into contract provisions that reward providers for meeting certain quality metrics.

Figure 4: Reported Benefits by Health Insurers of Covering Food is Medicine Interventions



Source: Massachusetts Food is Medicine State Plan Health Insurer Survey

DECISION-MAKER REQUESTED ACTIONS

Commercial Health Care Payers



- Perform food insecurity screening and resource referrals as part of insurer-based care coordination and case management programs.
- Create financial incentives for health care providers to incorporate food insecurity screening and resource referrals into patient care.

NUTRITION AND SENIORS:

“There are estimates that up to 50% of older adults may be malnourished...Malnourished older adults are likely to have higher levels of health care utilization, such as more frequent hospital admissions and longer hospital stays.”ⁱⁱⁱ

ⁱⁱⁱ *Hunger in Older Adults, Challenges and Opportunities for the Aging Services Network, Executive Summary, MEALS ON WHEELS AMERICA 2 (Feb. 2017).*

State Plan Focus Area 2

PATIENT REFERRAL AND CONNECTION: SUPPORTING PATIENT CONNECTION TO APPROPRIATE RESOURCES

The Vision

- All health care providers in the state have access to and use bidirectional communication platforms that allow providers to know whether patients have connected to referrals in the community, what services they received, and whether the receipt of services had an impact on patient health and/or well-being.
- Patients are able to be assessed and referred to the appropriate level of intervention by their provider or another member of the care team.
- Whenever possible, there is a “warm handoff” that directly connects the patient to the appropriate Food is Medicine resources upon receiving patient consent.

RECOMMENDATION #4

Massachusetts health care providers should implement bidirectional referral systems that are embedded into, or are seamlessly integrated with, electronic health records (EHR).

- a. State agencies should provide technical assistance to identify and help implement and/or support the design of systems necessary to ensure the most vulnerable patients have access to reliable referral systems.**

Of all health care provider respondents to the Food is Medicine State Plan survey:

- 66% said their organization faces barriers in referring patients to food and nutrition resources.
- 57% said lack of knowledge of available resources was a significant barrier in connecting food-insecure patients to assistance.
- 29% said once a food-insecure patient is identified, there is no procedure to connect them to assistance.

Additionally, during the listening sessions we heard from both medical and dental professionals and CBOs that they need access to improved communication and referral channels. Health care providers emphasized that screening and referral systems must be integrated into the electronic health records

(EHRs) used in other parts of patient care. Integrating referrals directly into the EHR is a critical step in ensuring that patients who are identified as food insecure or at nutritional risk receive responsive Food is Medicine resources. EHRs can be an effective tool for community referrals, offering opportunities for referrals to automatically flow to the appropriate community partner and allowing for follow-up and personalized assistance for referred patients.^{48, 49} The ideal referral platform is bidirectional, meaning it allows information to flow from the CBO back to the health care provider on whether the patient connected and received resources. This allows the health care provider to make necessary adjustments in the care plan. Here in Massachusetts, UMass Memorial recently launched a bidirectional referral platform, called CommunityHELP to refer patients directly to CBOs. This can serve as a model for the state.

The state should lead efforts to help providers adopt and utilize robust bidirectional systems by providing financial support (via grants or other funding mechanisms) and technical assistance to help with their design, creation, and implementation. A number of Massachusetts state agencies, including the Department of Public Health and MassHealth, already play important roles in supporting health systems' use of technology to improve health outcomes, reduce costs, and improve the patient experience. The Health Policy Commission is also well-positioned to support this work. These agencies can further nurture the adoption and uptake of bidirectional social needs referral systems embedded into the EHR by:

- convening stakeholders to discuss gaps in access to and capacity of current referral systems;
- promoting case studies that can be used as models for success;
- and issuing best practices for technology-based community resource referral systems.

Streamlining referral processes through technology platforms depends on:

1. widespread, consistent use of these platforms by health care providers,

2. accurate, well-organized databases of service providers available in the community, and
3. the capacity among CBOs to respond to the number of referrals they receive.

Building a platform does not guarantee uptake by providers. Leadership among provider institutions and payers must explicitly encourage the use of these platforms by their clinicians and case managers through internal trainings and incentive programs. CBOs should ensure that information within the databases attached to these systems accurately reflects the services they provide. CBOs should also track the number of referrals they receive through these systems and note when they are unable to respond to a referral due to lack of capacity, so that the provider, payer, and CBO can fully understand the depth of patient and community need and the quantity of resources necessary to adequately respond. This information exchange can lay the groundwork for future community-clinic collaboration to scale services and programs.

For more information about how agencies within the Executive Office of Health and Human Services can work together to integrate Food is Medicine interventions into health care, see **Recommendation #12**.

DECISION-MAKER

REQUESTED ACTIONS

Executive Office of Health & Human Services



Provide technical assistance to identify and help implement and/or support the design of new EHR-based referral systems, in particular within the MassHealth ACOs.

Provider and Payer Leadership



Create internal training and incentive programs to ensure widespread use of resource referral platforms by all care team members.

CBOs



Ensure that information within resource databases is accurate and track the number of referrals received from health care providers, including those that cannot be fulfilled due to lack of capacity.

RECOMMENDATION #5

Physician practices and hospitals should integrate non-physician providers into the screening and patient referral processes for Food is Medicine interventions.

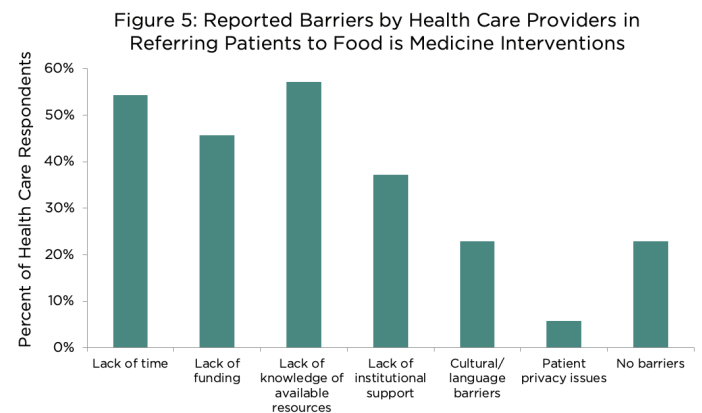
Although 80% of surveyed health care providers believed food insecurity screening was beneficial to patient care, few screened their patients consistently. Lack of time was cited by providers as the primary barrier to screening for food insecurity in our State Plan survey.

Due in part to the limited time that physicians have with patients, there was widespread agreement across the Commonwealth that non-physician providers should (and in many cases already do) perform the majority of food insecurity screenings and make subsequent referrals to Food is Medicine interventions.

In our data, nurses, physician assistants, Registered Dietitian Nutritionists, community health workers, and social workers were all named as key members of a patient's care team who tend to spend more time with patients and have more knowledge about community-based resources. In fact, all of the Food is Medicine program participants that we interviewed reported being connected to the program not by their doctor but by someone else – a nurse practitioner, case manager, etc.

Therefore, to maximize a patient's opportunities to be screened and referred to

an appropriate Food is Medicine intervention, physician practices and hospitals should ensure that patient care is team-based, and that *all* provider team members are properly trained and equipped to screen and refer.



Source: Massachusetts Food is Medicine State Plan Health Care Provider Survey

This requires physicians, clinics, and hospital systems to establish new workflows that accommodate these activities and incentivize uptake of new screening and referral practices among all non-physician providers.

DECISION-MAKER

Clinics, Hospitals,
and Physician
Practices



REQUESTED ACTIONS

- Create opportunities for all care team members to be trained on food insecurity screening and Food is Medicine interventions.
- Delegate and/or assign critical screening and resource referral activities to trained care team members.
- Reserve time with care team members for planning and implementing new workflows around screening and referrals.

RECOMMENDATION #6

Health care providers, oral health providers, and CBOs, should work together to increase access to oral health care as a component of Food is Medicine interventions by:

- a. Incorporating oral health data into EHRs to improve care coordination between health care providers and oral health providers.**
- b. Expanding access to oral health screening in CBO settings that offer Food is Medicine programs and services.**

With poor oral health, it can be particularly challenging to eat nutritious foods that are difficult to chew, like fruits, vegetables, and whole grains, or consume foods that are painful to the mouth, like citrus fruits high in vitamin C. Listening session participants confirmed that, particularly among seniors, the effectiveness of non-tailored food safety net programs is sometimes limited because the individuals simply cannot eat the food provided to them.

A recent study found that older adults in the emergency department with dental problems were more than twice as likely to suffer from malnutrition as those without.⁵⁰ Poor nutrition has also been shown to exacerbate existing oral health issues, leading to chronic disease or serious illnesses.⁵¹ Oral health providers generally do not screen patients for food insecurity or malnutrition, and records are also rarely shared with physician practices.

In order to maximize the benefits of Food is Medicine programs, Massachusetts needs to bridge the divide between oral and physical health. Health care providers and CBOs should leverage information on patient oral health in order to connect patients to Food is Medicine interventions that they are able to consume. Oral health information should also be incorporated into EHRs to facilitate communication between health care providers, oral health providers, and CBOs.

Finally, CBOs, such as food pantries and other access points for Food is Medicine interventions, could assist with identifying nutrition needs related to oral health by offering oral health screenings on-site for program participants, or even by piloting the co-location of full dental services within, or in close proximity to, a Food is Medicine pick-up location.

DECISION-MAKER

REQUESTED ACTIONS

Health Care Payers



Incentivize partnerships between oral health and primary care providers, including data-gathering and data-sharing.

Oral Health Providers



- Screen patients for food insecurity and malnutrition and refer patients to responsive resources.
- Transmit records to patients' primary care physician, especially when oral health issues may interfere with a patients' ability to eat certain foods.

CBOs



Partner with oral health providers to offer dental screenings or dental care within or in close proximity to Food is Medicine pick-up locations.

State Plan Focus Area 3

HIGH-QUALITY, APPROPRIATE SERVICES AVAILABLE IN THE COMMUNITY: SUPPORTING FOOD IS MEDICINE INTERVENTIONS AND PROGRAMMING WITHIN COMMUNITY-BASED ORGANIZATIONS

The Vision

- Food is Medicine interventions are consistently defined and easily identifiable in each region of the state.
- Food is Medicine interventions are designed and administered in a manner that reflects the values and preferences of the recipient

RECOMMENDATION #7

Health care payers and providers should adopt statewide definitions and standards for Food is Medicine interventions, informed by the expertise and experience of Food is Medicine programs and program recipients.

To integrate Food is Medicine interventions into health care payment and delivery models, CBOs, public and private health care payers, and providers must have a common understanding of:

- Standard definitions of Food is Medicine interventions across the continuum.
- Recommended client eligibility criteria for each level of intervention.
- Regional and cultural factors that may influence food preferences.

While CBOs across the state offer a wide array of nutrition services, the lack of consensus on nutrition standards, quality, and client/patient eligibility for various services is a barrier to scaling access to Food is Medicine interventions. The term “diabetic medically tailored meal,” for example, was used in our

CBO survey by different organizations to describe very different products. Additionally, over one third of CBOs surveyed reported that they have no specific enrollment criteria for their program participants, while others recertified their clients’ eligibility in partnership with a health care provider on a regular basis. As a result of this variation, recipients of these services may not be receiving the most appropriate level of service for their needs.

Without consistent definitions and standards, it is difficult for providers to understand which services are most appropriate for patients with different health profiles.

We are calling for stakeholders to work together to develop statewide Food is Medicine intervention standards. These standards will give CBOs, health care payers, and health care providers, the certainty needed to:

HEALTH CARE PROVIDER:

“Food insecurity screening tools only ask about access to food. They do not ask about the quality of the food available to patients.”

- Invest in and scale Food is Medicine programs;
- Extend health insurance coverage to Food is Medicine interventions; and
- Refer patients in the health care setting to the appropriate nutrition resource in the community.
- Guidance on involvement of Registered Dietitian Nutritionists and other nutrition professionals in menu planning and nutrition assessment of individuals receiving Food is Medicine interventions;
- Recommendations on eligibility and recertification policies for Food is Medicine interventions.

Statewide standards could include:

- Nutrition requirement for meals tailored to specific medical conditions;

TASK FORCE

To inform the development of these standards, we will convene a Community-Based Organization Task Force, which will ensure that standards reflect the capacity of programs on the ground as well as the preferences and values of current and future Food is Medicine program participants. See Next Steps on page 40 for more information about the Community-Based Organization Task Force.

DECISION-MAKER

REQUESTED ACTIONS

Health Care Payers, Health Care Organizations, and Health Care Providers



Integrate Food is Medicine interventions that meet statewide definitions and standards into delivery of care and insurance coverage.

CBOs



- Come to a consensus on Food is Medicine intervention definitions and standards.
- Promote the adoption of these standards by providers, payers, and policy-makers.
- Ensure that Food is Medicine services promote health equity and reflect recipient preferences and values.

FOOD IS MEDICINE PROVIDER:

“I am a dietitian at a Federally Qualified Health Center and a volunteer at the local food pantry. On Friday, I would sit with my patient and go over what to eat and on Saturday, I would see the same patient at the pantry and have to hand out food I knew wasn’t right for them because that’s all we had. I want to be part of fixing this!”

RECOMMENDATION #8

Health care payers and providers should explicitly seek to include Food is Medicine intervention recipients and community-based organizations in their community engagement activities.

In many of the State Plan listening sessions, attendees highlighted the need for stronger engagement by health care leaders, namely payers, hospital administrators, and other health system leaders, in efforts to expand access to Food is Medicine interventions. Attendees also noted the importance of ensuring that these leaders actively engage Food is Medicine program participants in designing and implementing new programs.

Federal and state requirements related to community engagement create valuable opportunities to facilitate communication between Food is Medicine providers, patients, and health care leaders. For example, all non-profit hospitals must conduct a Community Health Needs Assessment (CHNA) every three years.⁵² In conducting the CHNA, hospitals must consult with local underserved populations and/or the organizations serving their interests.⁵³ These CHNAs then form the basis of efforts to address social determinants and

health-related social needs in the community through community benefit programs and Determination of Need Community-Based Health Initiatives.⁵⁴ State and federal agencies have explicitly encouraged health care providers to consider the impact of nutrition and food access as part of these assessments.⁵⁵ As a result, CHNAs can be an important venue for CBOs and community members to engage local hospitals and payers on Food is Medicine-related issues. Similarly, as part of the roll-out of MassHealth ACOs, MassHealth has created a number of opportunities for community engagement around health-related social needs, such as the creation of MassHealth’s Social Services Integration Work Group.⁵⁶

We recommend that Massachusetts health care providers and payers seek to include Food is Medicine organizations, and the populations they serve, in all relevant community engagement activities.

DECISION-MAKER

REQUESTED ACTIONS

Health Care Providers



Include local Food is Medicine providers and the populations they serve in CHNA processes and other relevant community engagement activities (e.g., advisory boards, etc.).

Health Care Payers



Include local Food is Medicine providers and the populations they serve in community engagement activities (e.g., advisory boards, work groups, etc.).

CBOs



Contact local health care providers and payers to inquire about opportunities to participate in community engagement activities (e.g., CHNAs).

FOOD IS MEDICINE CBO:

“A huge part of a client’s personal time is spent coordinating all the disconnected services available to them. Food is Medicine programming should work to address this reality.”

State Plan Focus Area 4

SUSTAINABLE FUNDING STREAMS FOR FOOD IS MEDICINE PROGRAMMING

The Vision

- CBOs are paid for their Food is Medicine services through health care or insurance contracts.

RECOMMENDATION #9

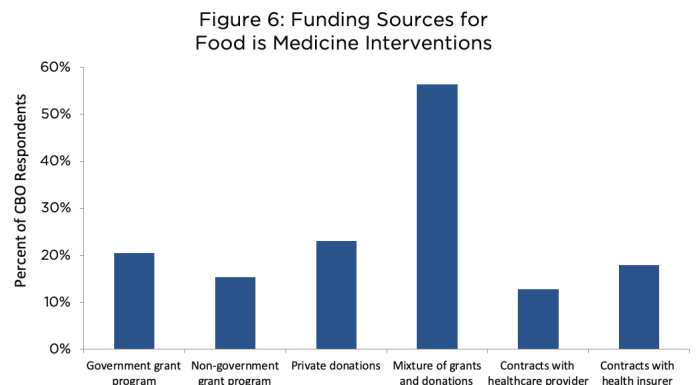
Public and private health care payers should support the delivery of Food is Medicine interventions by embedding intervention costs into standard payment systems (e.g. capitation and fee-for-service) and emerging funding streams.

- MassHealth Accountable Care Organizations (ACOs) should use Flexible Services funds to provide Food is Medicine interventions to their members.**
- MassHealth should establish additional funding streams for Food is Medicine interventions (e.g. via in-lieu of services).**
- Massachusetts Medicare Advantage plans should leverage the recent expansion of supplemental benefits to fund Food is Medicine interventions.**
- Private health care payers should pay for Food is Medicine interventions as covered benefits.**

Funding remains a significant barrier to scaling up Food is Medicine interventions to meet the need in the Commonwealth. In the State Plan surveys, almost half of CBO respondents identified lack of funding as a barrier to providing Food is Medicine interventions. Furthermore, only 18% of CBO respondents said they received any funding through contracts with health insurers or health care partners, leaving the vast majority of CBOs reliant on donations and grants to support their Food is Medicine programs.

Emerging research demonstrates that health care payers stand to benefit significantly from improving access to Food is Medicine interventions. For example, a 2018 study of a Massachusetts dual-eligible (i.e., eligible for both Medicaid and Medicare) population found that individuals receiving medically tailored meals experienced fewer emergency room visits, inpatient admissions, and emergency transport events than a matched control group, resulting in a 16% overall reduction in monthly medical costs.⁵⁷ We therefore recommend that Medicaid, Medicare, and private insurers work to improve sustainability and access to Food is Medicine programs by embedding intervention

costs into current and emerging payment systems.



Source: Massachusetts Food is Medicine State Plan Community-Based Organization Survey.

MASHEALTH

In particular, we recommend that payers take advantage of recent state and federal policy changes that create new opportunities to fund Food is Medicine interventions. Under its recent Section 1115 Demonstration Waiver, MassHealth took the innovative step of creating the Flexible Services program, which provides MassHealth ACOs with funding to pay for nutrition and housing supports. ACOs can use this funding

to pay for Food is Medicine interventions.⁵⁸ We recommend that ACOs seize this valuable opportunity by including Food is Medicine interventions in their Flexible Services budgets and plans (due in Summer 2019).⁵⁹ Given that Flexible Services is a pilot program that is financially and, potentially, time-limited, we also recommend that MassHealth establish broader funding streams to guarantee sustainable support for Food is Medicine interventions in the long-term. For example, MassHealth should take advantage of the recent change to federal Medicaid Managed Care regulations that allows non-traditional services to be built into managed care contracts and capitation rates as “in lieu of” services.⁶⁰

MEDICARE ADVANTAGE

We recommend that Massachusetts Medicare Advantage plans take advantage of a recent federal policy change to provide greater coverage of Food is Medicine interventions. Historically, Medicare Advantage plans have been able to provide coverage of meals as a supplemental benefit.⁶¹ However, this coverage has been limited in duration and has not typically extended to other Food is Medicine interventions.⁶² Beginning in Calendar Year (CY) 2020, Medicare Advantage plans will have new flexibility to cover Food is Medicine interventions to better serve their chronically ill members. Under the Bipartisan Budget Act

of 2018, Medicare Advantage plans will now be able to cover an expanded range of services as supplemental benefits, including benefits that are not “primarily health related,” provided that they “have a reasonable expectation of improving or maintaining the health or overall function of the chronically ill enrollee.”⁶³ According to recent guidance provided in the Final Medicare Advantage Call Letter, these services may include “meals furnished to the enrollee beyond a limited basis” and “food/produce.”⁶⁴ We recommend that Massachusetts Medicare Advantage plans capitalize on this change by including coverage of Food is Medicine interventions for chronically ill individuals in their annual benefit package for CYs 2020 and beyond.

PRIVATE INSURERS

Finally, we recommend that private insurers use their inherent flexibility to pay for Food is Medicine interventions as covered benefits. Supporting access to Food is Medicine interventions is valuable to all insurers, including those providing employer or individual plans. By ensuring that the costs associated with Food is Medicine interventions are covered, private insurers can both take advantage of the downstream benefits of these interventions and help to support the long-term sustainability of Food is Medicine programs in the Commonwealth.

DECISION-MAKER

REQUESTED ACTIONS

MassHealth ACOs	→	MassHealth ACOs should include Food is Medicine interventions in their Flexible Services plans and budget (due Summer 2019).
MassHealth	→	MassHealth should establish additional funding streams for Food is Medicine interventions, including allowing Managed Care Organizations to include Food is Medicine interventions in their contracts and capitated rates as “in lieu of” services.
Medicare Advantage Plans	→	Medicare Advantage Plans should include Food is Medicine interventions for chronically ill patients as supplemental benefits in their annual benefit packages.
Private Health Care Payers	→	Private health care payers should include Food is Medicine interventions as covered benefits in their plans.

State Plan Focus Area 5

SYSTEMS TRANSFORMATION AND LEADERSHIP ENGAGEMENT

The Vision

- Leadership, across providers, payers, and community-based organizations, is explicitly supportive of the Food is Medicine State Plan goals and willing to make concrete commitments toward realizing the State Plan objectives.
- Massachusetts state leaders understand the value of Food is Medicine.
- There is strong public, private, and philanthropic support for all levels of Food is Medicine intervention in the Commonwealth.
- Massachusetts law and policy supports a strong food system that is able to meet the needs of people with health-related nutrition needs throughout the state.

RECOMMENDATION #10

The Massachusetts Legislature should explicitly recognize Food is Medicine as a priority through legislative action and within the state budget by:

- a. Funding a MassHealth Food is Medicine State Plan Demonstration Pilot to evaluate the impact of Food is Medicine within the MassHealth population.**
- b. Providing sufficient funding to meet demand for the Healthy Incentives Program (HIP).**
- c. Funding the Prevention and Wellness Trust Fund and identifying activities that promote the ability of the health care system to address health-related social needs as one of the priorities for fund expenditures.**

The Massachusetts Legislature should join health care providers, insurers, CBOs, and state agencies in working to advance the integration of food-based nutrition programs into our health care system.

All members of the Massachusetts Legislature have a vested interest in increasing access to Food is Medicine interventions for their constituents. Legislators who have made a specific commitment to improving health and/or food policies—such as the members of related Committees and various issue-based caucuses, like the Prevention for Health Caucus, the Oral Health Caucus, and the newly formed Food Systems Caucus—have a particular opportunity, and responsibility, to lead these efforts.

As a first step, we recommend that state legislators allocate resources in the budget to:

1. CREATE A MASSHEALTH FOOD IS MEDICINE DEMONSTRATION PILOT

Funding a pilot to evaluate the impact of providing Food is Medicine interventions to MassHealth members would provide both immediate, short-term funding for Food is Medicine programs and new evidence to support expanding coverage of these services in public and private health insurance systems. An effective pilot could, for example, evaluate the impact on utilization and cost of deploying tiered Food is Medicine interventions within a MassHealth ACO. California's Medicaid program has recently initiated a multi-county medically tailored meal pilot for individuals with congestive heart failure, funded by state dollars.⁶⁵ Building on California's innovation, Massachusetts could become the first state in the country to evaluate the impact of a multi-tiered nutrition intervention in the Medicaid program.

2. PROVIDE SUFFICIENT FUNDING FOR HIP

HIP is a healthy food incentive program that provides a dollar-for-dollar match to SNAP participants when they purchase fruits and vegetables from participating farmers' markets, farm stands, mobile markets, and Community-Supported Agriculture (CSA) programs.⁶⁶ While HIP does not directly coordinate with health care systems, stakeholders across our regional listening sessions repeatedly highlighted HIP's potential to address food insecurity and chronic disease and expressed concern regarding HIP's past funding shortfalls. To ensure consistent access to program benefits moving forward, we recommend that the Massachusetts Legislature provide sufficient funding for year-round operation of the HIP program and to expand the network of HIP vendors.

3. RE-ESTABLISH THE PREVENTION AND WELLNESS TRUST FUND

First established in 2012 with the goal of directing health care dollars to community-level disease prevention strategies, the Prevention and Wellness Trust Fund achieved positive impacts on health outcome, cost, and system innovation measures for the Commonwealth.^{67, 68} However, funding for the Trust Fund has lapsed. Re-establishing the Prevention and Wellness Trust Fund could open an important resource for scaling and expanding access to Food is Medicine interventions, especially within the

Food is Medicine Priority Municipalities. For example, funds could be deployed to enable CBOs to enhance the nutritional quality, complexity, and reach of their services, or to assist in the design and maintenance of bidirectional health care/CBO referral systems. These activities fit squarely within the purpose of the Prevention and Wellness Trust Fund as currently conceived by the Legislature, because they will:

“increase access to community-based preventive services and strategies which complement and expand the ability of MassHealth to promote coordinated care, integrate community-based services with clinical care, and develop innovative ways of addressing social determinants of health;” and

“reduce the largest drivers of poor health, health disparities, reduced quality of life, and high health care costs through community-based strategies.”⁶⁹

The Legislature should therefore re-establish the Trust Fund and identify increasing the ability of the health care system to address health-related social needs, including through expanded access to Food is Medicine interventions, as an explicit priority for Fund expenditures.

DECISION-MAKER

Massachusetts
Legislature



REQUESTED ACTIONS

- Fund a MassHealth Food is Medicine State Plan Demonstration Pilot.
- Ensure that HIP receives sufficient funding to meet demand in FY 2020 and in all subsequent fiscal years.
- Re-establish the Prevention and Wellness Trust Fund, with increasing the ability of our health care system (especially MassHealth) to address health-related social needs as an explicit priority for Fund expenditures.
- Propose and enact additional policies that improve access to Food is Medicine interventions across the Commonwealth and promote the integration of such interventions into the Massachusetts health care system.

RECOMMENDATION #11

Massachusetts state agencies, CBOs, and health care providers should take advantage of opportunities to leverage federal funding to expand access to Food is Medicine interventions.

- a. CBOs and health care providers should partner to apply for funding from the Gus Schumacher Nutrition Incentive Program to expand access to produce prescription/voucher programs in Massachusetts.**
- b. Where parameters of federal funding and Food is Medicine State Plan priorities align, state agencies should utilize funding to advance Food is Medicine State Plan objectives.**

As noted throughout this report, funding continues to be a key obstacle to expanding access to Food is Medicine interventions across the Commonwealth. Lack of funding to expand and scale programs is particularly acute for less intensive services such as medically tailored food boxes and produce prescription/voucher programs; our survey responses indicate that no insurers in the state currently cover these services. Massachusetts often relies on federal programs to create and execute innovative state programs, reduce inequity, and improve quality of life across the Commonwealth. In addition to maximizing state-established and private funding streams, stakeholders should therefore leverage federal funding to expand access to Food is Medicine interventions wherever possible.

GUS SCHUMACHER NUTRITION INCENTIVE PROGRAM

We recommend that relevant state agencies, CBOs, and health care providers begin by taking advantage of the immediate opportunity to secure funds for produce prescription programs under the Gus Schumacher Nutrition Incentive Program (GusNIP). GusNIP, formerly known as the Food Insecurity Nutrition Incentive (FINI) Program, provides grant

funding for incentive programs that aim to increase SNAP recipients' purchases of fruits and vegetables.⁷⁰ The 2018 Farm Bill (the Agriculture Improvement Act of 2018), created a Produce Prescription Program within GusNIP that will receive \$4.5 million of GusNIP funds beginning in 2019.⁷¹ To take advantage of this opportunity, interested nonprofit organizations and/or governmental organizations must:

- Prescribe fresh fruits and vegetables to members; and either provide financial or non-financial incentives for members to purchase or procure fresh fruits and vegetables; provide educational resources on nutrition to members; or establish additional accessible locations for members to procure fresh fruits and vegetables;
- Partner with a health care provider (e.g., hospital or Federally Qualified Health Center);
- Enter an agreement to partner with the State Medicaid Agency (i.e. MassHealth) or other appropriate entity to evaluate the program's impact on health care utilization and costs; and
- Submit an application to the United States Department of Agriculture (USDA) describing the planned implementation

FOOD IS MEDICINE CBO:

“If we promoted our food services at Community Health Centers we would see a large increase in demand, but we are in a catch twenty-two situation: we can't promote the service if we do not have enough resources to fill the need.”

and evaluation of the produce prescription program.⁷²

In addition to MassHealth, the Department of Transitional Assistance should inform the proposal’s design and evaluation plan by sharing best practices and lessons learned from administering HIP. The Health Policy Commission and/or the Center for Health Information and Analysis could also contribute to the evaluation as they track health care utilization and cost data in the Commonwealth.

OTHER FEDERAL FUNDING OPPORTUNITIES

Beyond GusNIP, state agencies should also actively seek to use other sources of federal funding to achieve State Plan goals where the parameters of that funding align with Food is Medicine State Plan objectives. We have already highlighted several ways MassHealth can use federal funds to promote access to Food is Medicine interventions. **See Recommendations #2 and #9.** Further

opportunities to leverage federal funds to promote State Plan objectives exist within the Department of Public Health (DPH). For example, DPH receives federal funding from the Centers for Disease Control and Prevention (CDC) for its “Type 2 Diabetes Prevention Activities under State and Local Public Health Actions - 1422” initiative.⁷³ Two of the primary goals of the CDC’s initiative are to:

1. Enhance community-clinical linkages that increase the engagement of community health workers in connecting individuals with high blood pressure, prediabetes, or diabetes to community-based resources (such as Food is Medicine interventions); and
2. Implement systems that facilitate bidirectional referrals between community resources and health systems.⁷⁴

Given the focus of the funding, DPH should be empowered to include activities that increase awareness of and access to Food is Medicine interventions within the 1422 work.

DECISION-MAKER

REQUESTED ACTIONS

CBOs	→	Partner with health care providers and state agencies to apply for funding from GusNIP to support produce prescription/voucher programs.
Health Care Providers	→	Partner with CBOs and/or state agencies to apply for funding from GusNIP to support produce prescription/voucher programs.
MassHealth and/or HPC, CHIA and DTA	→	<ul style="list-style-type: none">• Agree to share utilization and health care cost data with CBOs and health provider partners to facilitate a successful GusNIP proposal.• Share best practices and lessons learned from HIP to inform the design and evaluation of a GusNIP produce prescription program.
State Agencies (e.g. DPH)	→	<ul style="list-style-type: none">• Where federal funding parameters and Food is Medicine objectives align, incorporate activities that expand access to Food is Medicine interventions.• DPH should promote awareness of and access to Food is Medicine interventions throughout relevant programs and should offer training and resources to community health workers on the availability of Food is Medicine Interventions and their impact on chronic disease prevention and management.

RECOMMENDATION #12

The Executive Office of Health and Human Services (EOHHS) should convene an Interagency Working Group to inform and accelerate the integration of Food is Medicine and other health-related social needs interventions into the health care system.

The State Plan recognizes that many agencies within EOHHS, as well as other departments across our state government, have an important role to play in ensuring that state efforts to improve our health care system are coordinated and effective. EOHHS should convene an Interagency Working Group to examine agency roles in encouraging and enabling the state's health care system to respond to health-related social needs and, more broadly, to align with existing agency work to address social determinants of health at the community or population-health level. The group's dialogue and efforts should be directly informed by relevant non-governmental initiatives emphasizing robust stakeholder engagement, including the State Plan.

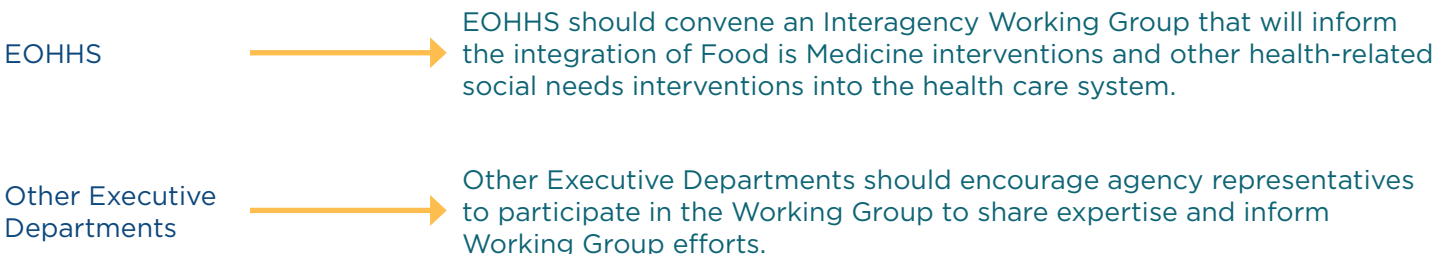
The Interagency Working Group should meet regularly and include permanent representatives from MassHealth, the Health Policy Commission, the Department of Public Health, and the Department of Mental Health. Relevant agencies, both within EOHHS (e.g. the Department of Transitional Assistance) and outside of EOHHS (e.g. the Department of Transportation, the Department of Agricultural Resources, and the Department of Housing and Community Development), should be invited to participate as appropriate, along with non-governmental issue-area experts. The Working Group should be charged with coordinating efforts to address complex issues, such as:

- Supporting the design, adoption, and use of bidirectional health-related social need resource referral systems. **See Recommendation #4.**
- Ensuring that CBOs, which play an essential role in responding to health-related social needs, are supported and prepared as they partner with health care providers and payers across the state to serve communities and patients in new ways.
- Coordinating regulatory efforts and initiatives to ensure that relevant responsibilities of health care payers, providers, and CBOs are streamlined, easy to understand, and clearly communicated.
- Ensuring that efforts to increase community-clinical integration through various policy levers (e.g. HPC's role in administering the ACO certification program, MassHealth's execution of the state's 1115 Waiver, and DPH's chronic disease prevention and management initiatives) are fully informed by cross-agency expertise.

Bringing these experts together regularly will ensure agencies are leveraging their respective areas of strength while using the most current information to design and administer complex programs.

DECISION-MAKER

REQUESTED ACTIONS



RECOMMENDATION #13

Physicians, clinicians, and researchers should expand research on Food is Medicine and its impact on patient health outcomes, health care usage, and health care costs by:

- a. Identifying gaps in current research.**
- b. Developing an assessment of nutritional need that can direct patients in health care settings to the appropriate Food is Medicine intervention.**

Notable opportunities exist to fill current gaps in Food is Medicine research. Researchers have an opportunity to build the evidence base by designing randomized control trials of individual Food is Medicine interventions and by conducting studies that evaluate multiple interventions at once. Questions to be addressed include:

- Can deploying tiered-intensity Food is Medicine interventions affect utilization of high-cost services and total cost of health care within MassHealth?
- What is the comparative effectiveness of Food is Medicine interventions for different health conditions?
- How do medically tailored meals, medically tailored food, produce prescription, and population level healthy food programs

compare in terms of health outcomes and cost effectiveness?

- How long should patients remain on services given their diagnoses?
- What is appropriate “dosing” (e.g., How many meals per week? How many dollars’ worth of subsidized produce)?

Future research should help develop methods for triaging patients in a clinical setting to the appropriate Food is Medicine intervention. Based on health care provider feedback, we know that this assessment must be:

- Short. Providers should be able to direct a patient to an appropriate resource after asking just a few targeted questions; and
- Able to be conducted by any member of the care team.

TASK FORCE

To implement Recommendation #13, we will convene a Food is Medicine Research Task Force. See Next Steps on page 40 for more information.

DECISION-MAKER

Physicians, Clinicians,
and Researchers



REQUESTED ACTIONS

- Pursue research opportunities that analyze the comparative effectiveness of Food is Medicine interventions on various disease states.
- Assess impact of Food is Medicine interventions on outcome metrics that include both health outcomes and cost effectiveness when possible to increase opportunities for policy relevance.
- Work to create an assessment used by health care providers that identifies the appropriate Food is Medicine intervention based on a patient’s diagnosis.

RECOMMENDATION #14

The philanthropic community should work in concert to:

- a. **Continue to build the evidence for Food is Medicine by supporting cutting-edge research.**
- b. **Use grant funding to incentivize robust, widespread, and professionally diverse (i.e., all care team members) use of new electronic referral systems.**
- c. **Build the capacity for Food is Medicine CBOs to partner with health care entities and serve every community in the state, starting with the Food is Medicine Priority Municipalities.**
- d. **Support the implementation and monitoring of the Food is Medicine State Plan.**

While obtaining sustainable public and private funding streams is the ultimate goal wherever Food is Medicine interventions improve health outcomes or reduce health care costs, the philanthropic community still has an outsized role to play in fostering innovation and culture change in both the health care and CBO sectors. By working in concert to attack the mismatch of demonstrated need and availability of responsive Food is Medicine interventions, the philanthropic community can bolster Massachusetts' place as a leader in the health care field. Realizing the goals articulated in the Food is Medicine State Plan will also yield important reforms beyond the realms of nutrition and health. For example, ensuring that health care systems can communicate effectively with community-based service providers will create critical infrastructure that can also be used to address patient needs related to housing, employment, transportation, and more.

Philanthropic funding is most needed to:

1. SUPPORT RESEARCH

More data is needed to:

- Evaluate the efficacy of various Food is Medicine interventions for different

diet-related and diet-sensitive health conditions (e.g. diabetes v. cancer).

- Establish proper “dosing” for different interventions – for example, how long should someone with food insecurity receive a particular intervention?
- Work to create an assessment used by health care providers that identifies the appropriate Food is Medicine intervention based on a patient’s diagnosis.

See Next Steps on page 40 for more information on how the the Food is Medicine Research Task Force will help set a rigorous research agenda.

2. INCREASE THE USE OF ELECTRONIC REFERRAL SYSTEMS BY CARE TEAMS

In speaking with health care providers, we learned that although some health care entities have rolled out bidirectional referral platforms, providers and their care team members were not yet comfortable using these systems. They also worried about the accuracy of the resource databases linked to these platforms. Philanthropy can be used to incentivize engagement with these systems across the organization, building both facility and trust with the referral platforms and referral process.

PHILANTHROPIC COMMUNITY MEMBER:

“Sometimes funders have the best intentions, but the number of small programs is confusing for clients and their impact is hard to evaluate. I wish we could coordinate.”

In addition, grant funding can incentivize focused engagement from leadership on screening and referrals so that staff feel able to invest time and resources in learning how to use new systems.

3. BUILD THE CAPACITY OF CBOs

To meet the need for Food is Medicine interventions across the Commonwealth, philanthropy can provide support to CBOs to

build capacity to not only serve more clients in more geographies, but also to increase the complexity and health profile of their offered services. The Food is Medicine Priority Level Analysis and programming maps (**see pages 12-13**) reveal locations where chronic disease burden is high while access to responsive interventions is particularly low. By prioritizing projects that target these locations, philanthropy can maximize the impact of grant funding.

DECISION-MAKER

REQUESTED ACTIONS

Philanthropy



- Support research that fills current knowledge gaps on the efficacy and potential of Food is Medicine interventions to improve health outcomes and reduce health care costs.
- Incentivize the adoption and use of bidirectional referral platforms by every member of the patient care team.
- Build capacity among CBOs to offer more services (and higher-quality, higher-complexity services) in new locations, starting with Food is Medicine Priority Municipalities.
- Support the implementation and monitoring of the Food is Medicine State Plan.

FOOD IS MEDICINE CBO:

“Research has played such a crucial role in helping health care leaders understand the value of our services. Four years ago, when the research was much more limited, it was a struggle to engage with the health care system. Now, with research that clearly shows the impact of Food is Medicine, they see how we can help them achieve their goals of improving patient outcomes and controlling costs. They’re hearing us, and they’re excited about looking for ways to partner to get our services to their patients. With additional research we can expand these connections and find new ways to improve the lives of people in Massachusetts struggling with chronic illness.”

RECOMMENDATION #15

The conveners of the Food is Medicine State Plan will establish a Massachusetts Food is Medicine Coalition. This Coalition should:

- a. Convene quarterly to evaluate progress on State Plan policy recommendations.**
- b. Cultivate cross-sector communication surrounding Food is Medicine in Massachusetts.**
- c. Advocate for future policies that will improve access to Food is Medicine interventions in Massachusetts.**
- d. Coordinate the efforts of the Food is Medicine Task Forces on:**
 - Provider Nutrition Education and Referral**
 - Food is Medicine Community-Based Organizations**
 - Food is Medicine Research**

Federal and state policies must support robust and integrated food and health systems. To realize these policies, we announce the creation of the Massachusetts Food is Medicine Coalition, which will work to implement the recommendations of the Food is Medicine State Plan, improve cross-sector communication among Food is Medicine partners, and advocate for federal and state policies that support Food is Medicine interventions.

The Coalition will measure progress on increasing capacity of Food is Medicine interventions in the Commonwealth to meet the demonstrated need. It will ensure that state government is well-supported in its efforts to

realize a transformed health care system. The Coalition will advocate for policy change that creates sustainable funding streams for Food is Medicine interventions, especially within our public and private insurance programs where the opportunity for impact on health care outcomes and costs is so significant.

Finally, the Coalition will track and promote the critical work of three Food is Medicine Task Forces: The Provider Nutrition Education and Referral Task Force, the Food is Medicine Community-Based Organization Task Force, and the Food is Medicine Research Task Force. **For more information on the role of these Task Forces see Next Steps on page 40.**

DECISION-MAKER

Conveners
of FIM
State Plan



REQUESTED ACTIONS

Establish a Massachusetts Food is Medicine Coalition to:

- Oversee efforts for policy reform, including policy change at the federal level, that will facilitate implementation of the Food is Medicine 15 in Massachusetts.
- Cultivate cross-sector communication and support for Food is Medicine services.
- Coordinate efforts with organizations, coalitions, and stakeholders that have similar health and food policy agendas.
- Serve as a conduit of information about national and state-level Food is Medicine policy reform opportunities for stakeholders across the Commonwealth.
- Coordinate the efforts of the Food is Medicine Task Forces.

Next Steps

The development of this State Plan has brought together an unprecedented array of Massachusetts experts and advocates united by a firm belief in the role that nutrition can and must play in an effective health care system. To ensure the success of the Plan, we must leverage this energy and expertise to take immediate, concrete steps toward implementation.

Over the coming months, we will convene three Task Forces that will sit within the Massachusetts Food is Medicine Coalition. These Task Forces will be convened by leading experts experienced in advocating for and/or delivering Food is Medicine interventions. Each Task Force will be focused on addressing a crucial gap identified in the State Plan.

PROVIDER NUTRITION EDUCATION AND REFERRAL TASK FORCE

The Provider Nutrition Education and Referral Task Force will work to improve the capacity of Massachusetts health professionals to identify and address the need for Food is Medicine interventions in their patient populations (**Recommendation #1**). This Task Force will:

- Bring together experts to develop and promote continuing education modules on nutrition, best practices for food insecurity screening and referrals, and payment mechanisms for Food is Medicine interventions;
- Promote the inclusion of nutrition education in Massachusetts medical and dental degree program curricula; and

- Support the incorporation of nutrition-related questions into licensing exams.

FOOD IS MEDICINE COMMUNITY-BASED ORGANIZATION TASK FORCE

The Community-Based Organization Task Force will lead a statewide effort to establish standards for Food is Medicine interventions in the Commonwealth (**Recommendation #7**). This Task Force will:

- Create a forum for Food is Medicine program leaders to come to consensus on intervention standards and definitions; and
- Engage with health care payers, providers, and policymakers to encourage widespread adoption of these standards in the Massachusetts health care system.

FOOD IS MEDICINE RESEARCH TASK FORCE

The Research Task Force will accelerate additional investigation into the field of Food is Medicine by leading public health and medical researchers (**Recommendation #13**). This Task Force will:

- Develop research plans that address ongoing questions such as how to best triage patients to the most appropriate Food is Medicine interventions; and
- Identify investigators, partners, and funding sources to further develop and implement these research plans.

To learn more about how you can drive progress and help reform our health care system, visit:

www.FoodisMedicineMA.org

CONCLUSION

Massachusetts has long been a national leader on health care policy, setting the tone for broader reforms across the country. We have led the way in providing widespread access to affordable health insurance regardless of income or medical history.

But we now know that access to health insurance (and therefore to medical care) is not, by itself, enough to achieve our long-term health care goals. Increasingly, Massachusetts health care leaders are recognizing the critical role that health-related social needs, including nutrition, play in driving health outcomes and costs. As a result, these leaders have taken some initial steps to bridge the gap between our food and health care systems. But much work remains to be done.

Massachusetts should seize on this momentum and be bold.

We can build a system that reliably identifies individuals who are food insecure, connects them to appropriate Food is Medicine interventions, and supports those interventions via sustainable funding.

In doing so, Massachusetts will establish itself as the first state in the nation to ensure that patients have access not only to affordable, effective medical care but also to the foods they need to live healthy, happy and productive lives.

Regional Snapshot

BERKSHIRES

BERKSHIRE COUNTY

Massachusetts' Berkshire County encompasses 32 cities and towns at the western border of the state. According to our Food is Medicine Priority Level analysis, high rates of food insecurity, vehicle access, and chronic disease burden make North Adams and Pittsfield priority cities for Food is Medicine interventions. The Berkshires, known for its rich arts scene and pastoral landscape, attracts visitors from all over the world. While tourism may drive the local economy, residents throughout the county continue to struggle with social challenges that are exacerbated by high housing costs, insufficient public transportation, and lack of year-round employment opportunities. The population has declined significantly since 1970.⁷⁵ With a majority of this loss among young adults, the aging population is growing rapidly. Though there are some Food is Medicine organizations and emergency food providers in the region, the shortage of services and programs within the area should be noted.

SPECIAL CONSIDERATIONS

Aging Population and Population Decline

Census data show a steady decline in the county's population since 1970, with 75% of the loss occurring in Pittsfield, North Adams, and Adams.⁷⁶ Well-educated young adults are leaving to pursue economic opportunities elsewhere, leaving behind a rapidly growing aging population. In 2010, adults over 50 years of age made up over 40% of Berkshire County's population.⁷⁷ There is a shortage of health care resources, such as health professionals, and an increasing burden of chronic disease, making Food is Medicine programming especially critical for residents of this region.

Generational Poverty

The Berkshires has been slow to recover from the loss of manufacturing jobs that once fueled the county's economy. Long-standing economic challenges are passed on from one generation to the next due to a lack of funds and resources for the community. Pittsfield and North Adams have the highest poverty rates (up to 41% and 21.4%, respectively) and lowest median incomes (\$21,182 and \$28,258, respectively) in Berkshire County, compared to the 11.1% poverty rate and \$74,167 median income in Massachusetts. Poverty is consistently reported as the main cause of poor health in Berkshire County.⁷⁸

Lack of Reliable Public Transportation

Given the rural landscape of the Berkshires, the most reliable form of transportation is a personal automobile. Individuals who do not own a personal vehicle or cannot operate one must rely on public transportation or walk to their destinations. This makes daily activities, such as going to work, grocery shopping, and visiting the doctor's office, particularly challenging for rural residents and especially for the senior population. Berkshire Regional Transit Authority (BRTA) is the principal provider of public transportation in the region. However, even within BRTA's service areas, public transportation is insufficient due to limited service hours and frequency of buses.⁷⁹ Persons with low income living in 17 southern Berkshire communities have no access to public transportation. This population is severely limited in mobility because they lack a personal vehicle, have no access to BRTA's routes, and cannot afford to pay for transportation services by taxi.⁸⁰

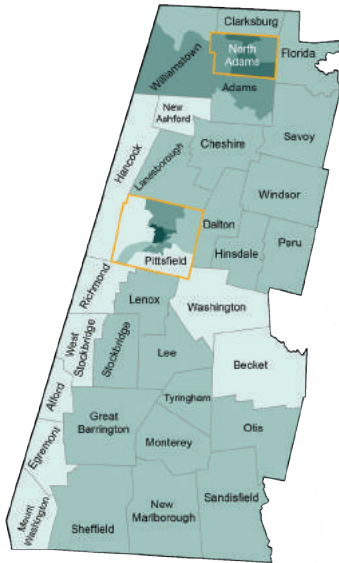
Regional Listening Session Themes: *May 4, 2018: Berkshires*

- The temporary suspension of HIP (Healthy Incentives Program) was a great loss to the Berkshires
- Most food access initiatives in the Berkshires are grant-funded and, therefore, difficult to sustain in the long-run.

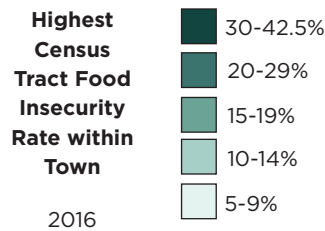
FOOD IS MEDICINE INDICATORS OF NEED

BERKSHIRES SNAPSHOT MASSACHUSETTS 2018

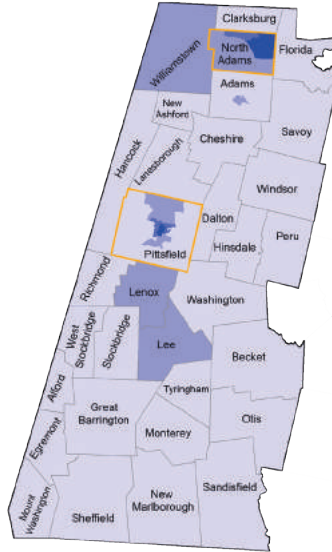
FOOD INSECURITY



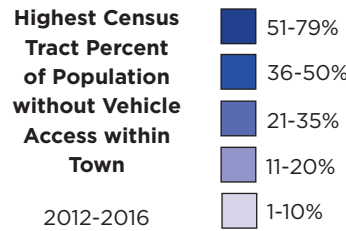
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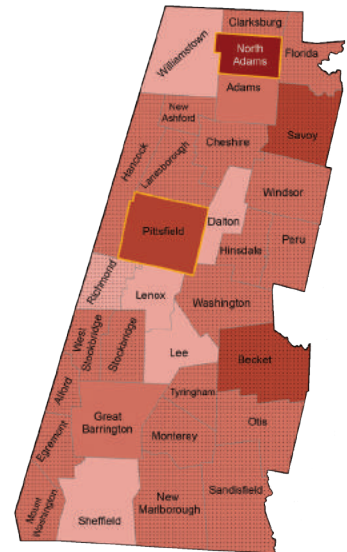
VEHICLE ACCESS



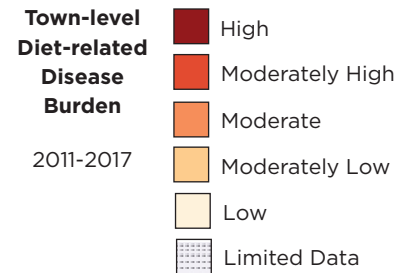
January 2019; Projected Coordinate System: NAD 1983 2011 StatePlane Massachusetts Mainland FIPS 2001; Sources: US Census, ACS 2012-2016 5-year Estimates



DIET-RELATED CHRONIC DISEASE BURDEN



January 2019; Projected Coordinate System: NAD 1983 2011 StatePlane Massachusetts Mainland FIPS 2001; Sources: US Census, MassDPH (Massachusetts Acute Care Database/BRFSS), Massachusetts Cancer Registry



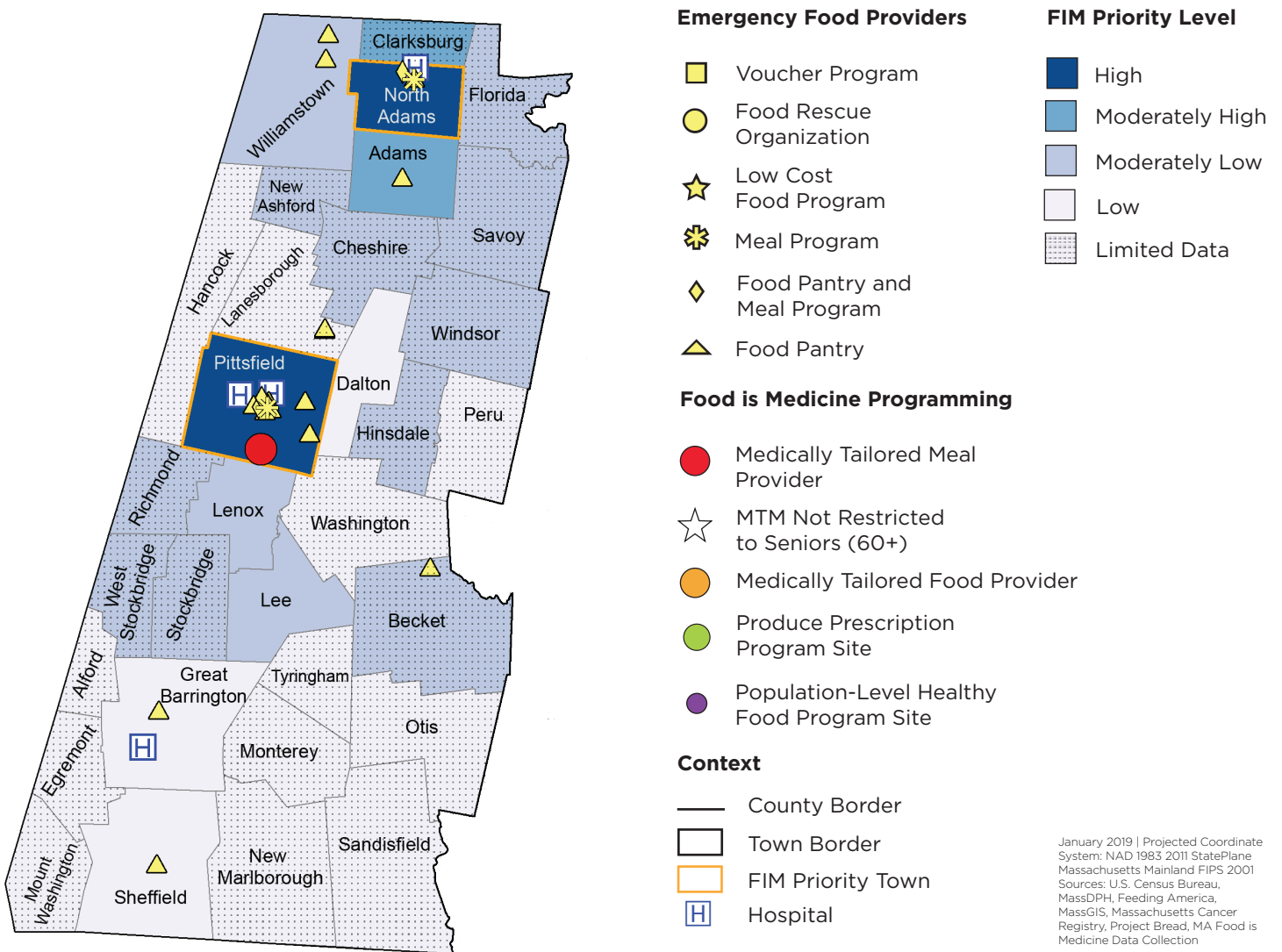
Appendix Table 1: Food is Medicine Indicators of Need, Berkshires

Food is Medicine Indicators of Need	Regional Data
Food Insecurity	A third of the region's census tracts have food insecurity rates higher than the state average (10.9%). The most concerning rates of food insecurity in the region are found in Pittsfield (30.5%) and North Adams (21%). ⁸¹
Vehicle Access	In North Adams and Pittsfield, up to 30% of households lack access to a vehicle, contributing to social isolation and poor access to health and social services. ⁸² Low-income families living in 17 Southern Berkshire County communities that lack public transit routes are especially vulnerable to health and social service access concerns. ⁸³
Chronic Disease	The region's rates of asthma, obesity, colorectal cancer, and ovarian cancer are higher compared to the state. ⁸⁴ However, the Berkshires has a notable dearth of health survey respondents and reliable health data. High suppression rates of chronic disease data in rural Berkshire County make it difficult to capture a complete picture of chronic disease burden within this region. ⁸⁵

FOOD IS MEDICINE PRIORITY ANALYSIS

BERKSHIRES SNAPSHOT

MASSACHUSETTS 2018



INNOVATION IN THE BERKSHIRES

Food pantries, meal sites, and shelters are the front lines of emergency food assistance in Berkshire County and thus play an important role in addressing food insecurity. All of these agencies are supplied by the Food Bank of Western Massachusetts (FBWM), a Planning Council member to the Food is Medicine State Plan. FBWM acts as an important resource for hunger relief organizations in the region by providing support to increase capacity of programs, strengthen the emergency food network, and develop long-term projects to fight hunger. The Berkshires are home to a rich agricultural landscape, which can play an important role in increasing healthy food access for the community and supporting local economies. For this reason, it is especially important to maintain sustainable funding streams for programs, such as the Healthy Incentives Program (HIP), that support the agricultural economy and community health. We have identified an incredible number of organizations committed to reducing food insecurity and improving the health status of the region by collaborating with local farmers and utilizing the region’s agricultural resources.

Regional Snapshot

PIONEER VALLEY

FRANKLIN, HAMPSHIRE, AND HAMPDEN COUNTIES

Massachusetts' Pioneer Valley encompasses the 69 cities and towns within Franklin, Hampshire, and Hampden Counties. High rates of food insecurity, low vehicle access, and chronic disease burden make Springfield, Chicopee, Holyoke, Agawam, and West Springfield priority towns for Food is Medicine interventions. Hampden County is rich in racial and ethnic diversity; however, residential racial segregation and high concentrations of poverty raise concerns about resource access and availability of culturally appropriate services. Lack of health care providers and environmental concerns also contribute to high rates of chronic disease. Food is Medicine interventions are enriched by the region's robust agricultural economy; hunger-relief efforts that improve regional health also contribute to the local economy.

SPECIAL CONSIDERATIONS

Air Pollution

Exposure to air pollution can result in health conditions such as asthma and cardiovascular disease.⁸⁶ In fact, 27% of the towns in Pioneer Valley have asthma rates higher than the state average and three out of the ten towns with the highest asthma rates in the state are in Pioneer Valley. Cardiovascular disease is 40% more prevalent in Springfield and Holyoke than the rest of the county.⁸⁷ Both cities have major roadways running through their neighborhoods.

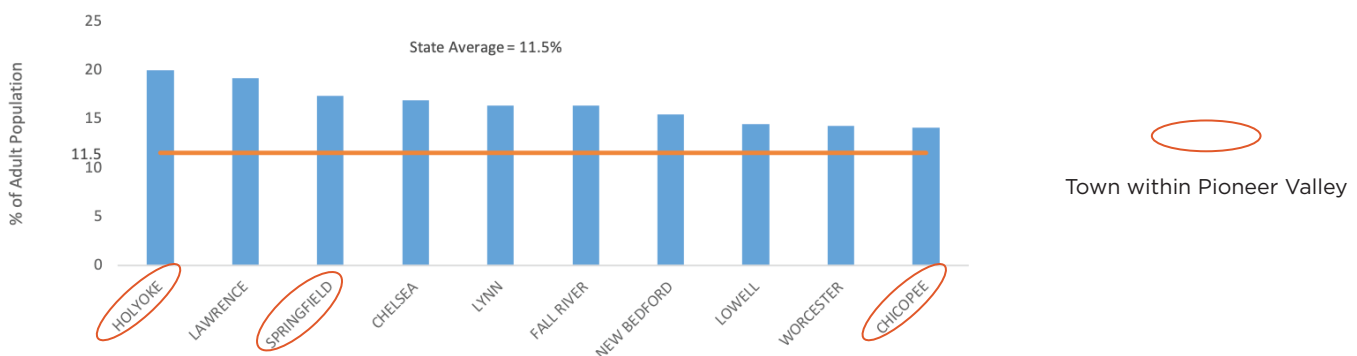
Racial Segregation and Concentrations of Poverty

Residential racial segregation, corresponding with low levels of opportunities and resources in communities of color, is a form of institutional racism that impacts health.⁸⁸ Springfield has an estimated 66% minority population and is ranked the most segregated area in the country for Latino/Hispanics and the 22nd most segregated for African Americans.⁸⁹ Longmeadow, East Longmeadow, and Wilbraham, adjacent to Springfield, are predominantly White (90% or more) and have the highest median family incomes in the region compared to Springfield, where the median family income is \$35,742.⁹⁰ Beyond Springfield, Hampden County has the second highest poverty rate (17.2%) and lowest median income (\$52,205) in the state.⁹¹ Food is Medicine programming in the region should consider and address resource access issues and availability of culturally appropriate services.

Health Care Provider Shortage

Limited availability of health care providers may exacerbate chronic disease in Pioneer Valley. Over half (54%) of Hampden County residents live in an area with a shortage of health care professionals.⁹² As a result, residents may miss or delay health care visits, resulting in poorer health outcomes.

Appendix Figure 3: Top Ten Towns with Highest Adult Asthma Rates in Massachusetts



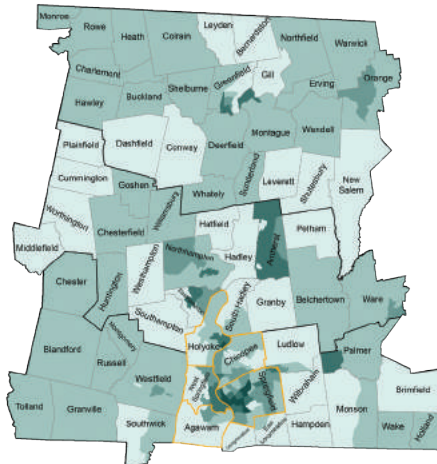
Source: Massachusetts Town-level Behavioral Risk Factor Surveillance Survey, CENTERS FOR DISEASE CONTROL AND PREVENTIONS-MDPH, (2018)

FOOD IS MEDICINE INDICATORS OF NEED

PIONEER VALLEY SNAPSHOT

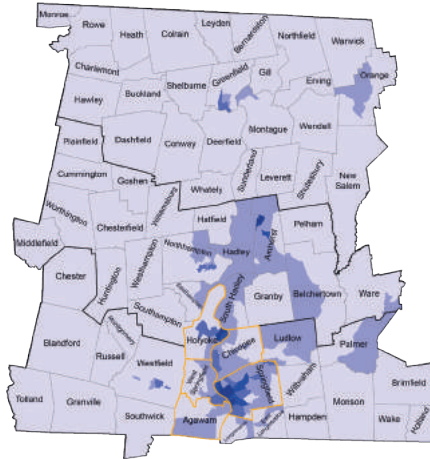
MASSACHUSETTS 2018

FOOD INSECURITY



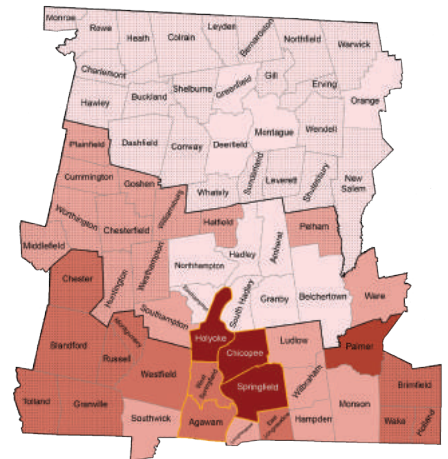
January 2019; Projected Coordinate System: NAD 1983 2011 StatePlane Massachusetts Mainland FIPS 2001; Sources: US Census, Feeding America

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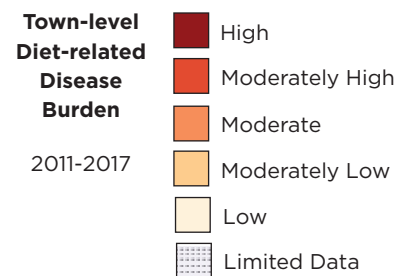
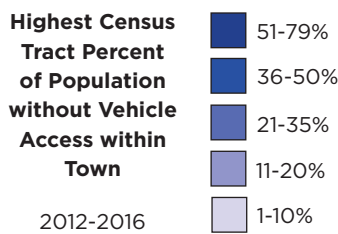
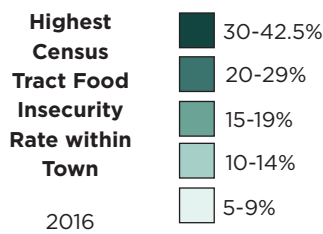


January 2019; Projected Coordinate System: NAD 1983 2011 StatePlane Massachusetts Mainland FIPS 2001; Sources: US Census, ACS 2012-2016 5-year Estimates

DIET-RELATED CHRONIC DISEASE BURDEN



January 2019; Projected Coordinate System: NAD 1983 2011 StatePlane Massachusetts Mainland FIPS 2001; Sources: US Census, MassDPH (Massachusetts Acute Care Database/BRFSS), Massachusetts Cancer Registry



Appendix Table 2: Food is Medicine Indicators of Need, Pioneer Valley

Food is Medicine Indicators of Need	Regional Data
Food Insecurity	Forty percent of the region's census tracts have food insecurity rates higher than the state average (10.9%). Holyoke contains a census tract with the highest food insecurity rate in the region (30.7%), yet Springfield has the biggest concentration of food insecurity in the region with a town average of 18%. ⁹³
Vehicle Access	Pockets of low vehicle access rates are found in Springfield and Holyoke. In one area of Springfield, over half of households lack access to a vehicle. Public transportation in this region is not adequately comprehensive or a reliable substitute for a personal vehicle. ⁹⁴
Chronic Disease	All three counties in Pioneer Valley lead the state in asthma rates among adults, exceeding the state rate by 42%. ⁹⁵ Nearly 60% of the towns with publicly available diabetes data in the region have prevalence rates above the state average. Hampden County has the second highest rate of hospitalizations from cardiovascular disease in the state, while Hampshire County has higher rates of breast cancer and colon and rectal cancers than the state average. Over half of Hampden County residents live in an area with a shortage of health care professionals. ⁹⁶

FOOD IS MEDICINE PRIORITY ANALYSIS

PIONEER VALLEY SNAPSHOT

MASSACHUSETTS 2018

FIM Priority Level

- High
- Moderately High
- Moderately Low
- Low
- Limited Data

Food is Medicine Programming

- Medically Tailored Meal Provider
- MTM Not Restricted to Seniors (60+)
- Medically Tailored Food Provider
- Produce Prescription Program Site
- Population-Level Healthy Food Program Site

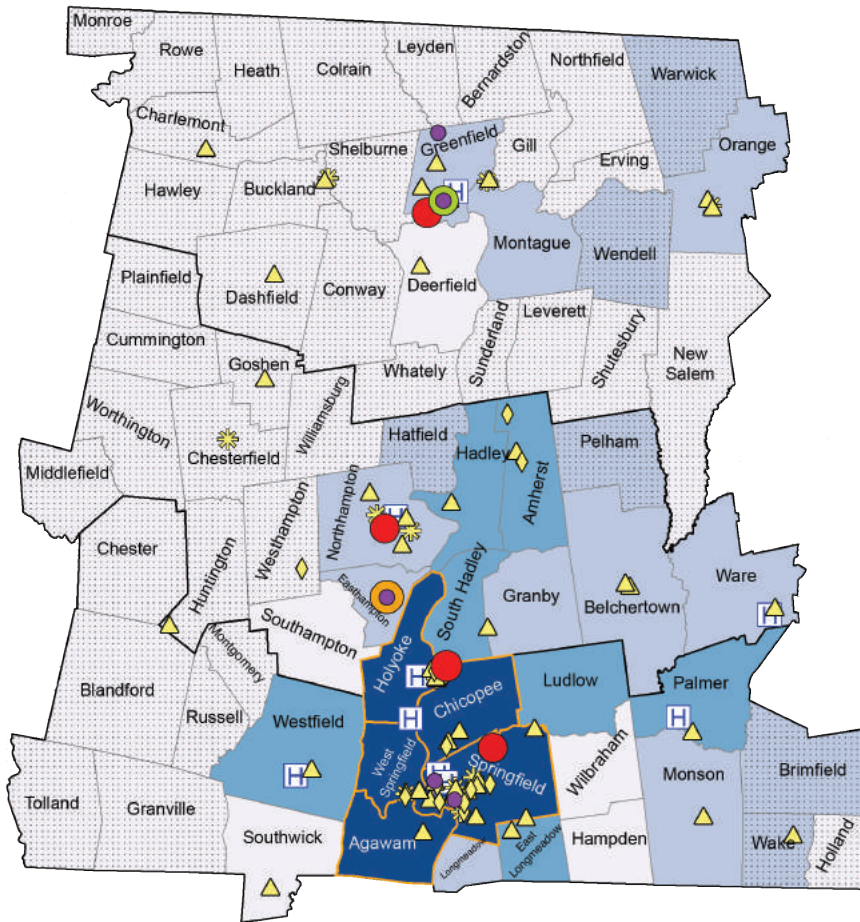
Emergency Food Providers

- Voucher Program
- Food Rescue Organization
- Low Cost Food Program
- Meal Program
- Food Pantry and Meal Program
- Food Pantry

Context

- County Border
- Town Border
- FIM Priority Town
- Hospital

January 2019 | Projected
 Coordinate System: NAD
 1983 2011 StatePlane
 Massachusetts Mainland
 FIPS 2001
 Sources: U.S. Census
 Bureau, MassDPH,
 Feeding America,
 MassGIS, Massachusetts
 Cancer Registry, Project
 Bread, MA Food is
 Medicine Data Collection



INNOVATION IN PIONEER VALLEY

Pioneer Valley is home to a quarter of all farms in Massachusetts. Local farms form the backbone of hunger-relief efforts by providing fresh produce to emergency food programs and CBOs that focus on food and health. Just Roots, a Planning Council member to the Food is Medicine State Plan, is an organization in Greenfield, MA committed to increasing access to whole, healthy, local food. Aside from operating the Greenfield Community Farm that hosts workshops, field trips, a local food clinic, and a community garden, Just Roots' Community Supported Agriculture (CSA) program is designed to address barriers that traditionally limit low-income participation in CSAs. As a result, Just Roots is the largest SNAP-enrolled CSA program in the state. The organization is also dedicated to addressing the research gap surrounding CSAs. In 2017, they launched a two-year, USDA/Blue Cross Blue Shield Foundation-funded research study in partnership with the Community Health Center of Franklin County and Dr. Seth Berkowitz of the University of North Carolina School of Medicine to evaluate the impact CSA participation has on health outcomes and health care costs.

Regional Snapshot

CENTRAL MASSACHUSETTS

WORCESTER COUNTY

Massachusetts' Worcester County encompasses 60 cities and towns at the heart of the Commonwealth. Within the region, Worcester, Gardner, Webster, Leominster, and Fitchburg are high priority communities for Food is Medicine interventions given their high rates of food insecurity, low vehicle access, and high burden of chronic disease. Across several community health assessments conducted in the region, residents of Worcester County report economic hardship, lack of reliable public transportation, and substance use/abuse as consistent health-related concerns for their communities.⁹⁷ There is an abundant range of emergency food providers in this area, yet Food is Medicine programming remains too limited to adequately address the social challenges and health concerns faced by the community. The programs that do exist are generally not available year-round or are targeted only to specific populations, such as the elderly population, leaving the rest of the food insecure and chronically ill population with limited resources.

SPECIAL CONSIDERATIONS

Economic Hardship

Many individuals and families in Central Massachusetts struggle financially. Poverty is consistently identified as the leading health-related issue by residents of Greater Worcester and of North Central Massachusetts.⁹⁸ Worcester has the highest poverty rate across the county at 21.8%, followed by Fitchburg (17.9%), Gardner (16.7%), Webster (16.0%), and Leominster (13.4%). Over 40% of residents in several neighborhoods of Worcester live below the poverty line.⁹⁹ Families with financial barriers are less likely to have healthy food access and face additional barriers to obtaining care.

Concerns over High Substance Use

Access to healthy food and proper nutrition is especially crucial for individuals struggling with substance abuse and those in recovery. Worcester has the second highest rate of opioid-related overdose deaths in the state. Between 2013 and 2017, the city experienced a 79% increase in opioid-related deaths.¹⁰⁰ The number of drug overdoses, fatal and nonfatal, continues to rise in Worcester amid a statewide decline, with a 202% increase in the five years since 2013.¹⁰¹ Substance use has been a consistent and leading health concern for Worcester communities, especially when there is a regional lack of access to resources, treatments, and support for individuals struggling with this issue. Often, families must reallocate vital resources to help loved ones in recovery, putting further strain on the emergency food system. Food is Medicine interventions are especially important for this particular population because access to healthy food and proper nutrition is not only important for improving health outcomes but is also crucial for successful recovery.

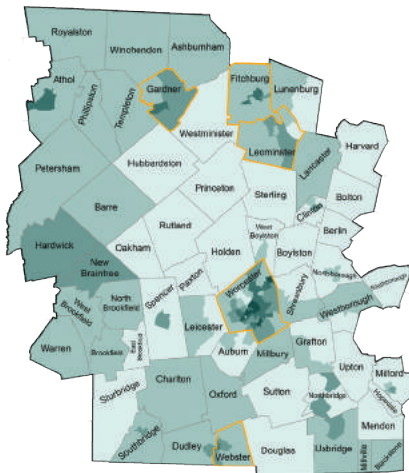
Lack of Reliable Transportation

Community health assessments identify transportation as a major barrier to staying healthy and accessing care for residents of Greater Worcester and North Central Massachusetts.¹⁰² Lack of reliable and accessible public transportation, especially in rural communities of the region, puts residents at risk for worse health outcomes. Patient surveys conducted at the Family Health Center in Worcester reveal that the health center experiences a 15% rate of missed appointments and that 51% of respondents have some type of transportation issue.¹⁰³ Access to transportation was noted most often and as a more significant barrier for residents of rural communities, older adults, Latinos, and persons with serious mental illness.¹⁰⁴

FOOD IS MEDICINE INDICATORS OF NEED

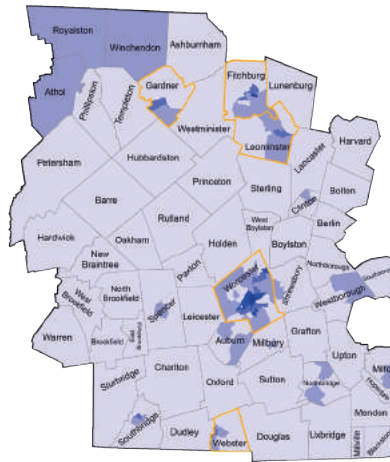
CENTRAL SNAPSHOT MASSACHUSETTS 2018

FOOD INSECURITY



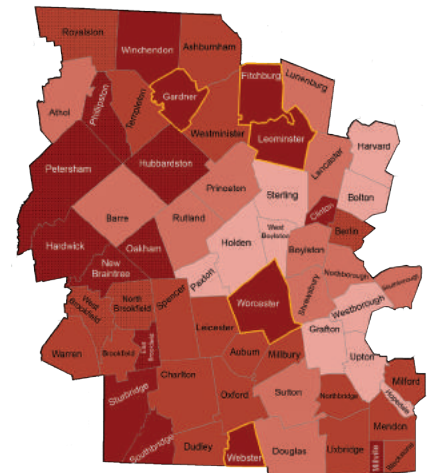
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Massachusetts Mainland FIPS 2001; Sources: US Census, Feeding America

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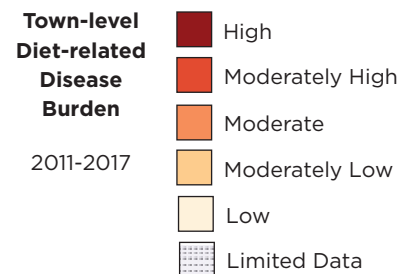
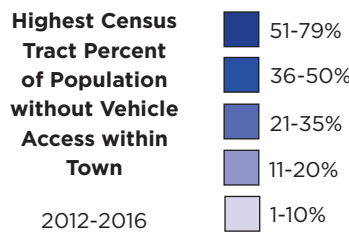
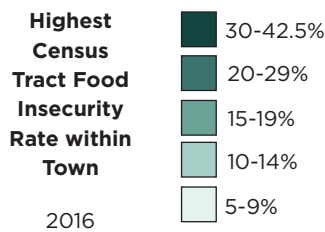


January 2019; Projected Coordinate System: NAD 1983 2011 StatePlane
Massachusetts Mainland FIPS 2001; Sources: US Census, ACS 2012-2016 5-year
Estimates

DIET-RELATED CHRONIC DISEASE BURDEN



January 2019; Projected Coordinate System: NAD 1983 2011 StatePlane
Massachusetts Mainland FIPS 2001; Sources: US Census, MassDPH
(Massachusetts Acute Care Database/BRFSS), Massachusetts Cancer Registry



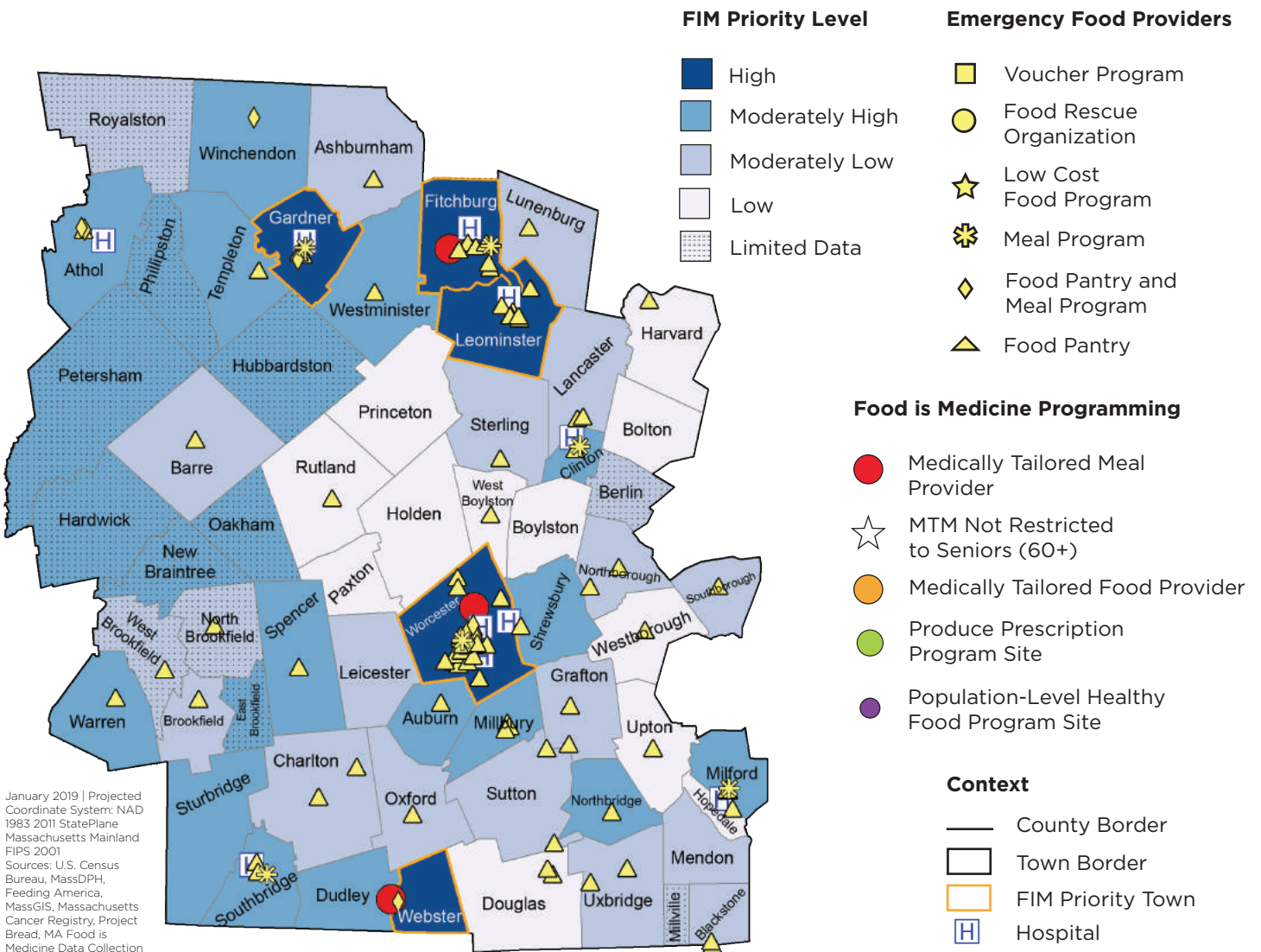
Appendix Table 3: Food is Medicine Indicators of Need, Central Massachusetts

Food is Medicine Indicators of Need	Regional Data
Food Insecurity	Thirty-five percent of the region's census tracts have food insecurity rates higher than the state average (10.9%). The most concerning rates of food insecurity in the region are found in Fitchburg (23%) and Worcester (29.8%). ¹⁰⁵
Vehicle Access	In Worcester and Fitchburg, up to 49% of households lack access to a vehicle. ¹⁰⁶ Patient surveys conducted at the Family Health Center in Worcester reveal that the health center experiences a 15% rate of missed appointments and that 51% of respondents have some type of transportation issue. ¹⁰⁷
Chronic Disease	Worcester County leads the state in lung and bronchus cancer rates. ¹⁰⁸ Priority cities have consistently higher asthma and diabetes rates compared to the regional averages. ¹⁰⁹

FOOD IS MEDICINE PRIORITY ANALYSIS

CENTRAL SNAPSHOT

MASSACHUSETTS 2018



INNOVATION IN CENTRAL MA

Many individuals and organizations in Central Massachusetts are working diligently to advance nutrition-focused health care in the region. Congressman Jim McGovern of the Massachusetts 2nd Congressional District is a key champion of the national Food is Medicine movement and founding member of the Food is Medicine Working Group within the U.S. House Hunger Caucus. Congressman McGovern advocates for policies to integrate Food is Medicine interventions into health care payment and delivery systems serving low-income individuals. Additionally, Central Massachusetts has several state legislators who are active in improving healthy food access in Massachusetts, including some who are part of the new Food Systems Caucus in the State House.

Regional Snapshot

METRO BOSTON

MIDDLESEX, SUFFOLK, AND NORFOLK COUNTIES¹⁴⁸

Massachusetts' Metro Boston region encompasses the 85 cities and towns of Middlesex, Suffolk, and Norfolk Counties. While most of the region's rates of chronic disease are no higher than the remainder of the state, the concentration of food insecurity is exceptionally high. When paired with high rates of no vehicle access, Malden, Chelsea, Boston, and Quincy are priority towns for Food is Medicine interventions according to our Food is Medicine Priority Level analysis. Economic hardship, especially as evidenced by lack of affordable housing, affects community health and is a barrier to obtaining care. Ethnic diversity, while a strength in this region, poses concerns about the availability of linguistically and culturally appropriate services.

SPECIAL CONSIDERATIONS

Housing Cost Burdens

In Metro Boston, there are many areas where housing costs are very high compared to household income. About half of households in Roxbury and Malden, and about a third of households in Chelsea and Quincy, spend 50% or more of their household income on rent.¹¹⁰ Despite a relatively strong national and local economy, the number of households severely burdened by housing costs (50% of more of household income spent on housing costs) increased between 2007 and 2017 in Boston.¹¹¹ Lack of affordable housing means that low-income residents may cut back on other basic

needs due to the high cost of housing relative to their incomes.¹¹²

Ethnic Diversity

Priority areas of Boston, Chelsea, Malden, and Quincy are rich in ethnic diversity, compared to the rest of the state. Chelsea is the most diverse, with 45.6% of the population born outside the U.S., and 70.4% who speak a non-English language at home.¹¹³ Potential language barriers and issues related to immigration status should be considered by community-based organizations when designing and promoting services. Nonprofit and other advocacy organizations that work with these communities can be strong partners in ensuring that Food is Medicine services reflect and continue to be shaped by their preferences and values.

Racial Disparities

Historic racial discrimination in Boston has also led to massive wealth gaps, which place non-white households at greater risk of food insecurity. In 2017, the Boston Globe reported that the median household wealth (which takes into consideration total assets and debts) was \$247,500 for whites, \$8 for US-born blacks, \$12,000 for Caribbean blacks, \$3,020 for Puerto Ricans and \$0 for Dominicans.¹¹⁴ Unfortunately, these stunning racial wealth disparities drive adverse health outcomes for many people of color in the Boston area.

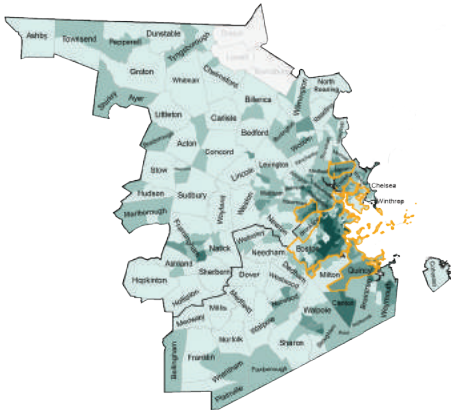
Regional Listening Session Themes: *March 1, 2018, Metro Boston*

- While the number of FIM programs in Metro Boston is a great asset, it can also make coordination between programs difficult, leading to confusion in the community about program eligibility and operation.

FOOD IS MEDICINE INDICATORS OF NEED

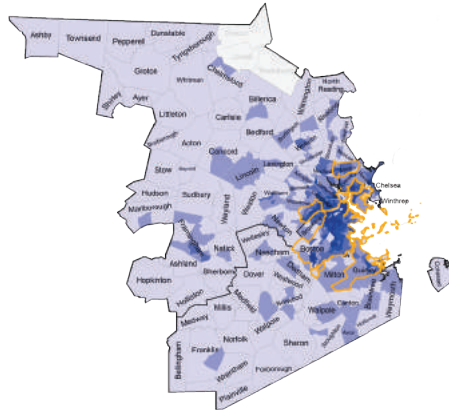
METRO BOSTON SNAPSHOT MASSACHUSETTS 2018

FOOD INSECURITY



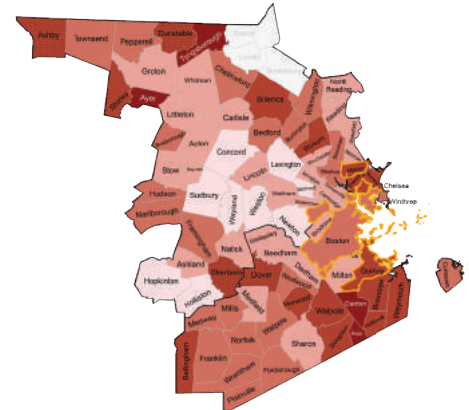
January 2019; Projected Coordinate System: NAD 1983 2011 StatePlane Massachusetts Mainland FIPS 2001; Sources: US Census, Feeding America

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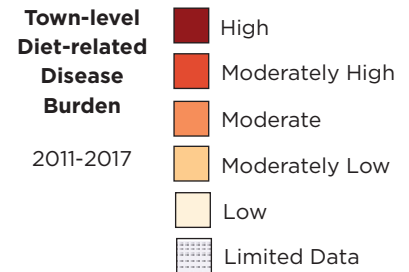
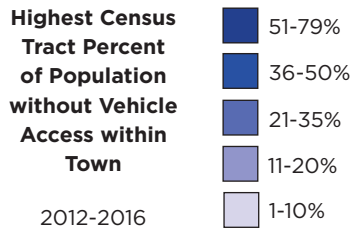
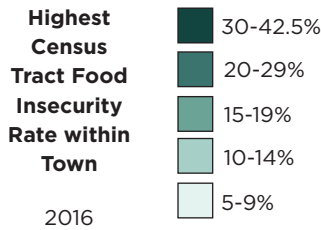


January 2019; Projected Coordinate System: NAD 1983 2011 StatePlane Massachusetts Mainland FIPS 2001; Sources: US Census, ACS 2012-2016 5-year Estimates

DIET-RELATED CHRONIC DISEASE BURDEN



January 2019; Projected Coordinate System: NAD 1983 2011 StatePlane Massachusetts Mainland FIPS 2001; Sources: US Census, MassDPH (Massachusetts Acute Care Database/BRFSS), Massachusetts Cancer Registry



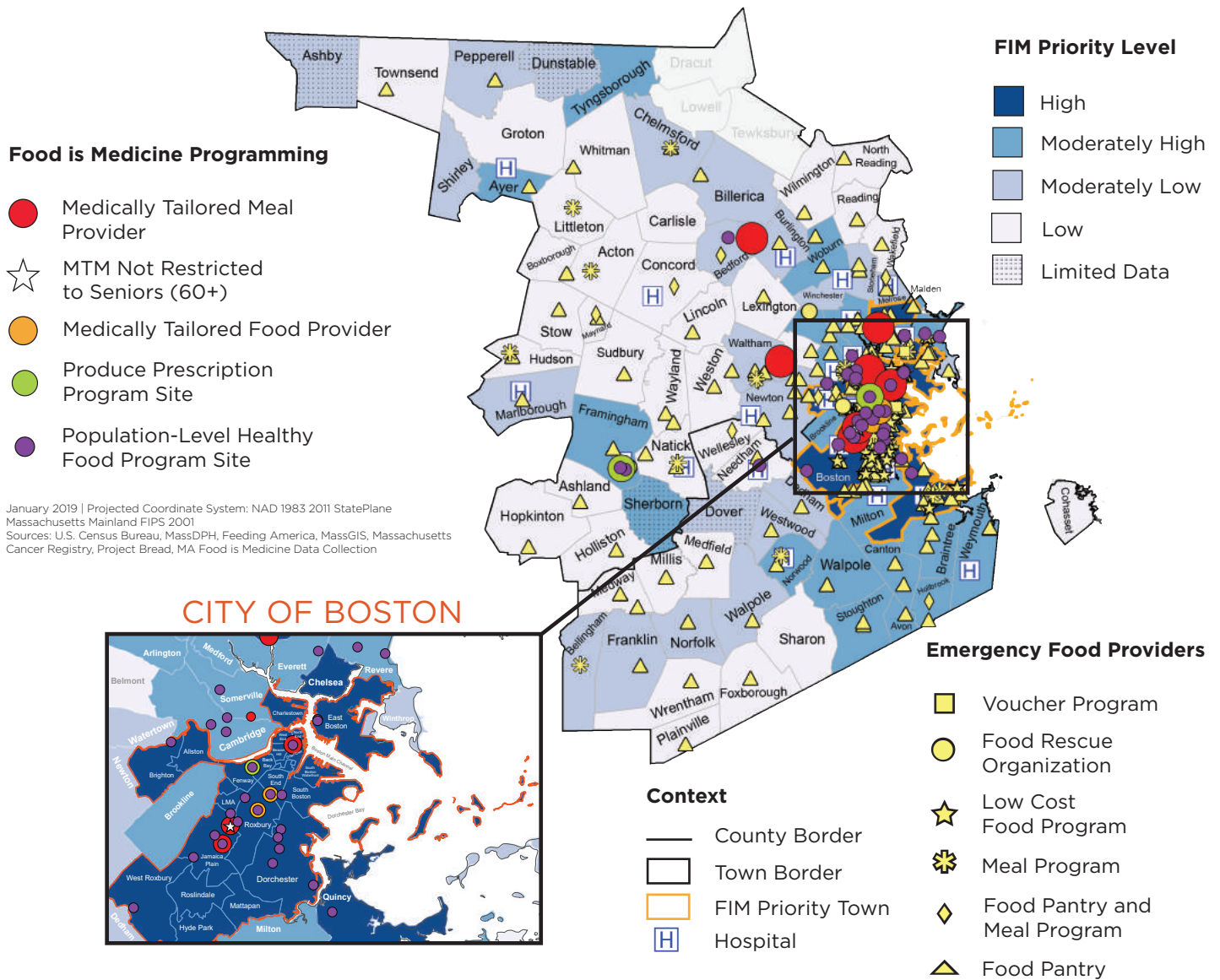
Appendix Table 4: Food is Medicine Indicators of Need, Metro Boston

Food is Medicine Indicators of Need	Regional Data
Food Insecurity	Nearly 40% of the region’s census tracts have food insecurity rates higher than the state average (10.9%) with the highest rates concentrated around the urban core. Food insecurity rates reach as high as 38% of the population in the Roxbury neighborhood of Boston. Outside of Boston, food insecurity is high in Malden and Quincy, where in some communities up to a quarter of households are food insecure. ¹¹⁵
Vehicle Access	Many neighborhoods of Boston are within a ten-minute walk of a subway line, key bus route, or commuter rail station; however, significant portions of Dorchester, Hyde Park, Jamaica Plain, Mattapan, and South Boston have longer walks to rapid transit. Without access to vehicles, these residents must rely on infrequent buses or other modes. ¹¹⁶ In Roxbury, a neighborhood that has historically been underserved by public transportation, only 50% of residents have access to a vehicle. ¹¹⁷ In Malden, Chelsea, and Quincy, there are even larger areas that are only serviced by infrequent bus routes.
Chronic Disease	Almost half of the cities rated for highest prevalence of HIV in the state are located in Metro Boston, including Boston and Chelsea, which are ranked 2 nd and 4 th for highest HIV prevalence in the state. ¹¹⁸ Chelsea, Boston, and Revere have some of the highest adult asthma rates in the state. ¹¹⁹

FOOD IS MEDICINE PRIORITY ANALYSIS

METRO BOSTON SNAPSHOT

MASSACHUSETTS 2018



INNOVATION IN METRO BOSTON

Boston is home to one of the mass only medically tailored meal programs in the state that serves people under the age of 60. In 2018, Community Servings provided 650,000 made-from-scratch, medically tailored meals to 2,300 clients with complex nutritional needs, 66% of whom are younger than 60. Community Servings' on-staff Registered Dietitian Nutritionists develop nutrition care plans to help manage medical conditions and provide guidance for managing nutrition-related medication side effects and weight loss or gain. While Community Servings' meals have profound effects on its clients' health outcomes and health care costs, the high proportion of individuals under 60 they serve points to a large unmet need for Food is Medicine interventions outside of Community Servings' service area. Recognizing unmet needs such as this, and that malnutrition is a costly, prevalent problem for the health care system, Community Servings advocates for the integration of medically tailored meals and supportive nutrition services into public and private health care models.

Regional Snapshot

NORTHEASTERN MASSACHUSETTS

ESSEX COUNTY AND LOWELL, TEWKSBURY, AND DRACUT

Northeastern Massachusetts encompasses Lowell, Tewksbury, Dracut, and the 34 cities and towns of Essex County. Lawrence, Lynn, and Lowell should be prioritized when considering resource allocation for Food is Medicine interventions given their high percentages of food insecurity, low vehicle access rates, and elevated level of chronic disease. Former industrial cities, Lawrence and Lowell, are now more economically distressed, as evident from the significant declines in employment and lack of living wages across the region. The Northeast region is ethnically and racially diverse, with a large population of immigrants and non-English speakers. Food is Medicine programming in the Northeast should be shaped accordingly to meet the needs and values of the unique communities in this region.

SPECIAL CONSIDERATIONS

Diversity in the Northeast

The Northeast is rich in ethnic and racial diversity with a large foreign-born population (39.3% in Lawrence, 34.7% in Lynn, and 26.7% in Lowell).¹²⁰ In Lowell, over 43% of the population speak a non-English language at home and half of current residents are immigrants and

refugees from Cambodia, Vietnam, Brazil, Portugal, African nations, and the Dominican Republic.¹²¹ Lawrence is home to the largest Hispanic and Latino population (79.1%) in the state and approximately 78% of Lawrence residents speak a non-English language at home.¹²² Food is Medicine programs should ensure that members of these communities participate in, and help inform, the design and scaling of services in this region.

Economic Hardship

Economic hardship affects community health and is a barrier to obtaining care. Former mill towns such as Lowell and Lawrence are more economically distressed from the leading industry having left, resulting in high unemployment and lack of living wages. Compared to the state poverty rate of 11.1% and unemployment rate of 4.0%, poverty and unemployment rates are higher in Lawrence (24.2%, 7.2%), Lowell (22.4%, 5.5%), and Lynn (18.2%, 4.3%).¹²³ Lawrence is rapidly generating new jobs, yet its unemployment rate remains the highest in the region. The relatively high rates of poverty and unemployment in the region underscore the importance of social and health services like Food is Medicine interventions.

FOOD IS MEDICINE CLIENT:

“They check up on you. That makes a big difference, it means that there’s someone looking after me. Also, it’s helping me with my meds because I’m eating with my meds, rather than just taking my meds...I’m eating better so I’ve gained weight but also by eating more consistently, it’s obviously having an effect on me physically, in a good way.”

Lawrence General Hospital Community Health Needs Assessment¹⁴⁹

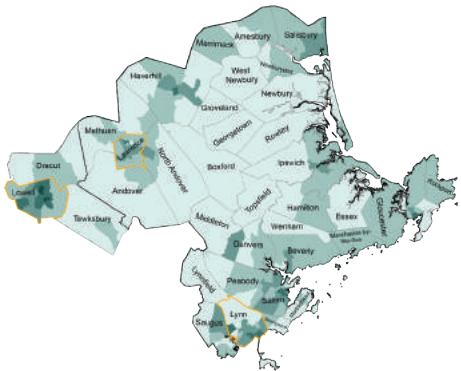
- In 2013, 3% of participants of the Lawrence General Hospital Community Health Needs Assessment (CHNA) Survey reported “Language problems/could not communicate with provider or staff” as a reason for not having one consistent health care provider. In 2016, this percentage increased to 31%.
- “I feel uncomfortable with interpreters, especially involving health. There is a cultural disconnect between the population served and the population providing services.” - Focus group participant of Lawrence General Hospital’s CHNA

FOOD IS MEDICINE INDICATORS OF NEED

NORTHEASTERN SNAPSHOT

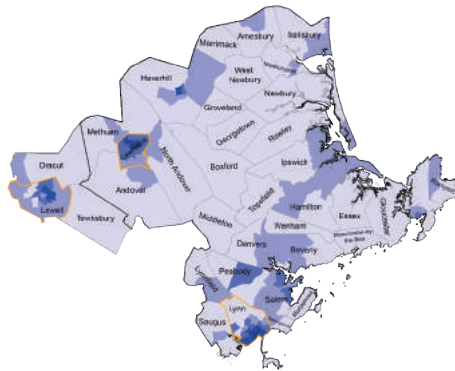
MASSACHUSETTS 2018

FOOD INSECURITY



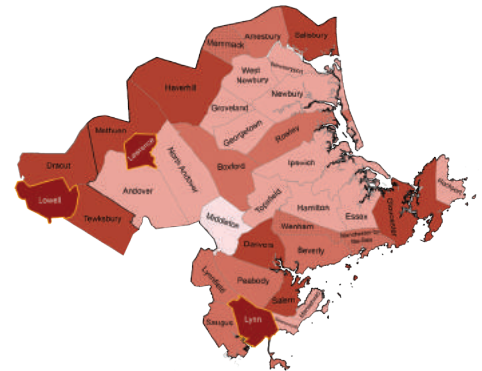
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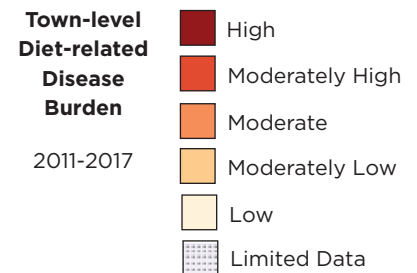
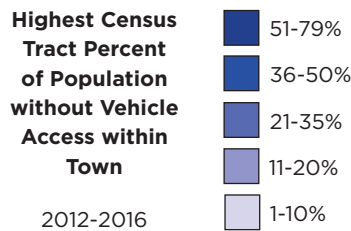
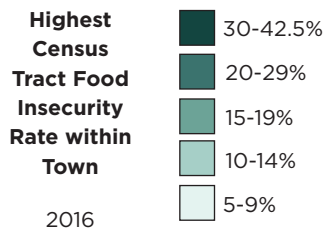


January 2019; Projected Coordinate System: NAD 1983 2011 StatePlane Massachusetts Mainland FIPS 2001; Sources: US Census, ACS 2012-2016 5-year Estimates

DIET-RELATED CHRONIC DISEASE BURDEN



January 2019; Projected Coordinate System: NAD 1983 2011 StatePlane Massachusetts Mainland FIPS 2001; Sources: US Census, MassDPH (Massachusetts Acute Care Database/BRFSS), Massachusetts Cancer Registry



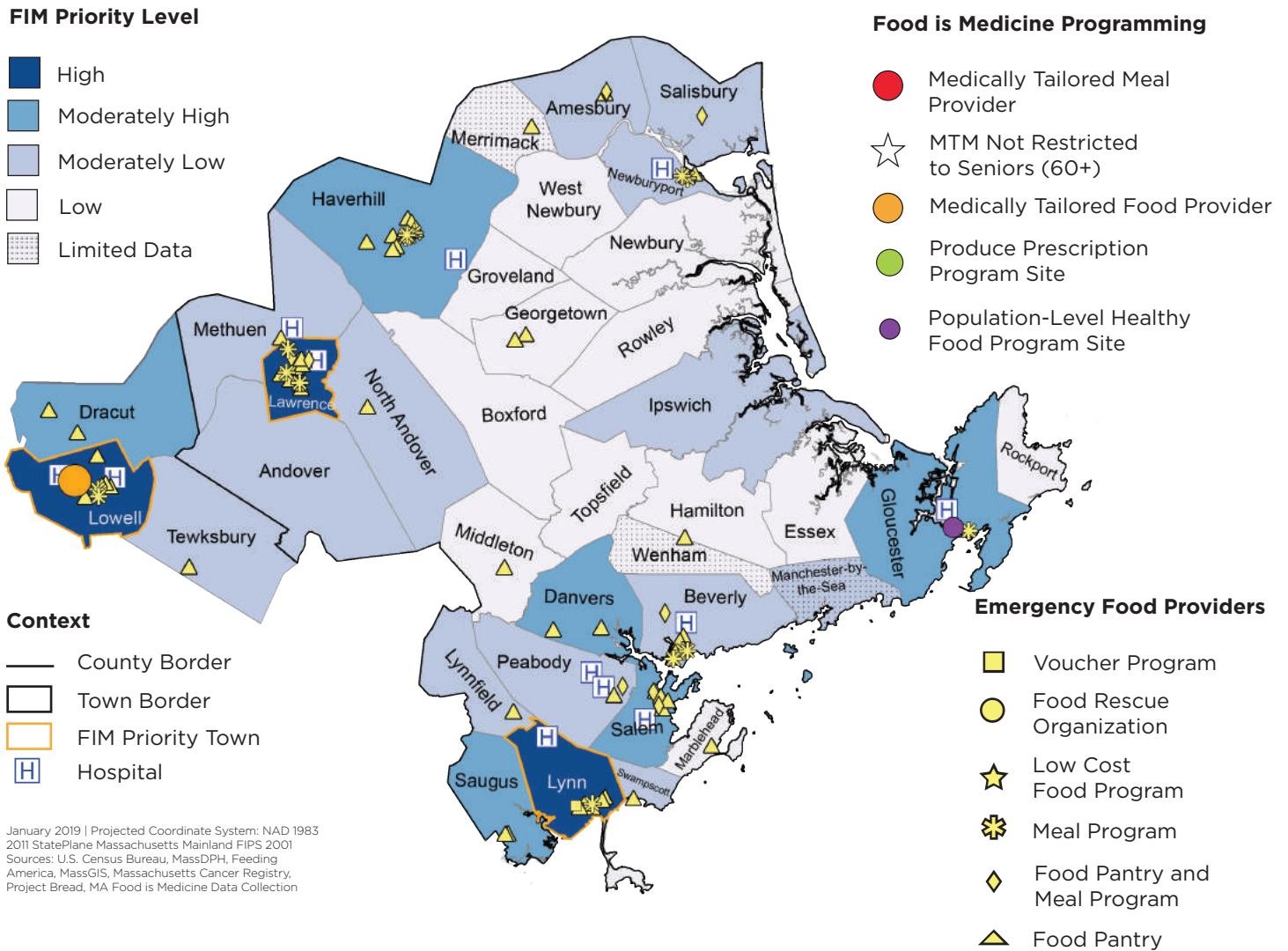
Appendix Table 5: Food is Medicine Factors of Need, Northeastern Massachusetts

Food is Medicine Indicators of Need	Regional Data
Food Insecurity	One third of the region’s census tracts have food insecurity rates higher than the state average (10.9%). The most concerning rates of food insecurity in the region are found in Lowell (27.6%), Lynn (18.7%), and Lawrence (17.6%). ¹²⁴
Vehicle Access	In one area of Lynn, over half of households do not own a vehicle. Up to 41.1% of households in Lowell and 48.8% of households in Lawrence lack vehicle access. Lack of transportation exacerbates chronic health conditions and directly affects community health. ¹²⁵
Chronic Disease	Lawrence and Lynn have the highest rates of adult asthma and diabetes in the Northeast. ¹²⁶ More adults in Lowell, Lawrence, and Lynn are obese compared to the rest of the region. ¹²⁷ The highest rates of cardiovascular disease hospitalization are concentrated in towns on the northern border of the region. ¹²⁸

FOOD IS MEDICINE PRIORITY ANALYSIS

NORTHEASTERN SNAPSHOT

MASSACHUSETTS 2018



INNOVATION IN NORTHEASTERN MA

There is incredible diversity in the Northeast, prompting Food is Medicine programming in this region to shape its services to meet the needs of the communities they serve. Elder Services of Merrimack Valley’s Meals on Wheels program, one of the many robust Food is Medicine interventions in the Commonwealth, provides home-delivered, medically tailored meals to homebound seniors 60 years and older with complex health conditions and distributes healthy, nutritionally balanced meals to seniors on-site, free of charge. Meals on Wheels has paid special attention to the needs of different communities in their service area. For example, in addition to medically tailored meals, the program also delivers Chinese meals to address the cultural preferences of residents in Westford and Andover and Latino meals to the Lawrence Congregate Dining Site.

Regional Snapshot

SOUTHEASTERN MASSACHUSETTS

BRISTOL AND PLYMOUTH COUNTIES

Massachusetts' Southeastern region encompasses the 47 cities and towns of Bristol and Plymouth Counties. The towns of Brockton, Taunton, Fall River, Abington, and Fall River all have high rates of food insecurity, low vehicle access, and chronic disease burden, making them highly suitable for Food is Medicine interventions. The more populated areas in the region are also home to high concentrations of ethnic and racial diversity; Food is Medicine interventions in these areas are exemplary instances of providing linguistically and culturally appropriate services. While the Southeast's economy has traditionally been carried by the fishing industry, gradual job depletion and the recent opioid crisis have increased financial and social stress across the region.

SPECIAL CONSIDERATIONS

Ethnic and Racial Diversity

Priority areas of Brockton, New Bedford, and Fall River are rich in racial and ethnic diversity,

compared to the rest of the state. Brockton is the most diverse, with 63% of the population being non-white and over a quarter born outside the U.S. Almost half speak a language other than English at home.¹²⁹ Linguistic and cultural differences are potential barriers to health care access if not addressed directly.

Substance Use Prevalence

Fall River, Brockton, and New Bedford are in the top-ten cities in the state for opioid-related deaths.¹³⁰ Residents of the region are particularly concerned about how the opioid epidemic is affecting young adults; there are high rates of individuals age 20-24 admitted to substance abuse facilities.¹³¹ While New Bedford has historically been home to the one of the largest fishing ports in the state, consolidation of the industry has resulted in jobs being depleted or replaced with low-wage, seasonal work in tourism and waterfront real estate development.¹³² Combined with the substance use disorder epidemic, lack of economic opportunity presents a particularly challenging outlook for young adults in Southeastern MA.

FOOD IS MEDICINE CLIENT:

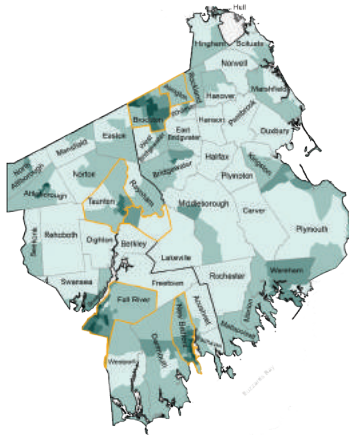
“Having access to food immediately is incredibly important to recovery – addiction is an anxiety-driven disease and when access to food is not immediate, you will “lose” them. Planning and routine are critical to recovery, but only a free lunch is available in Brockton for people who are homeless – no access to breakfast and no dinner. This makes it very challenging for folks who have been using drugs and are now trying to create a stable, healthy routine. Many of the medications they have will instruct to take with food – when they don't have food, the medications either are not effective or will make them feel terrible and undermine their recovery. Also, when food insecurity is a challenge, many will prioritize medications over food. Again, this makes them feel worse.”

FOOD IS MEDICINE INDICATORS OF NEED

SOUTHEASTERN SNAPSHOT

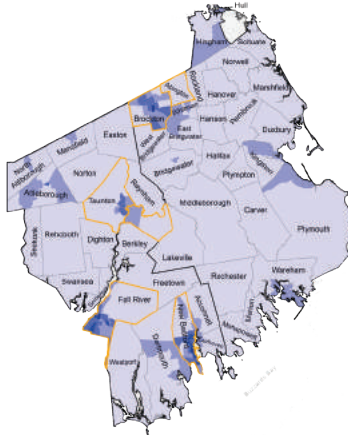
MASSACHUSETTS 2018

FOOD INSECURITY



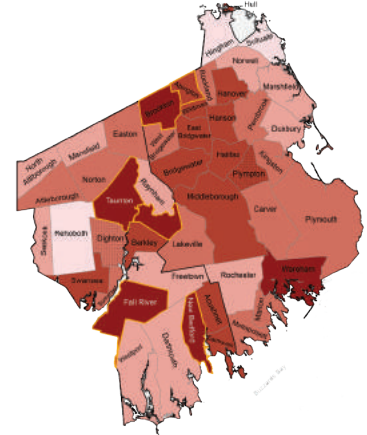
January 2019; Projected Coordinate System: NAD 1983 2011 StatePlane Massachusetts Mainland FIPS 2001; Sources: US Census, Feeding America

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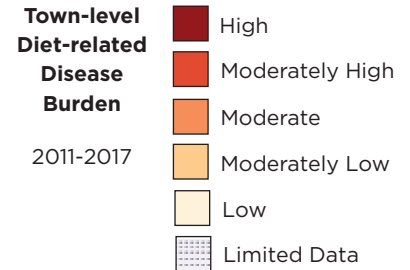
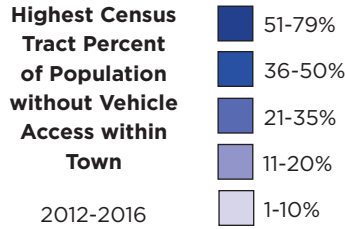
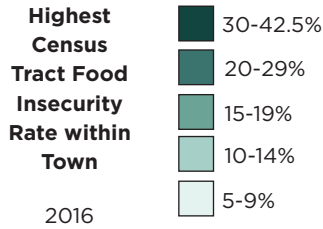


January 2019; Projected Coordinate System: NAD 1983 2011 StatePlane Massachusetts Mainland FIPS 2001; Sources: US Census, ACS 2012-2016 5-year Estimates

DIET-RELATED CHRONIC DISEASE BURDEN



January 2019; Projected Coordinate System: NAD 1983 2011 StatePlane Massachusetts Mainland FIPS 2001; Sources: US Census, MassDPH (Massachusetts Acute Care Database/BRFSS), Massachusetts Cancer Registry



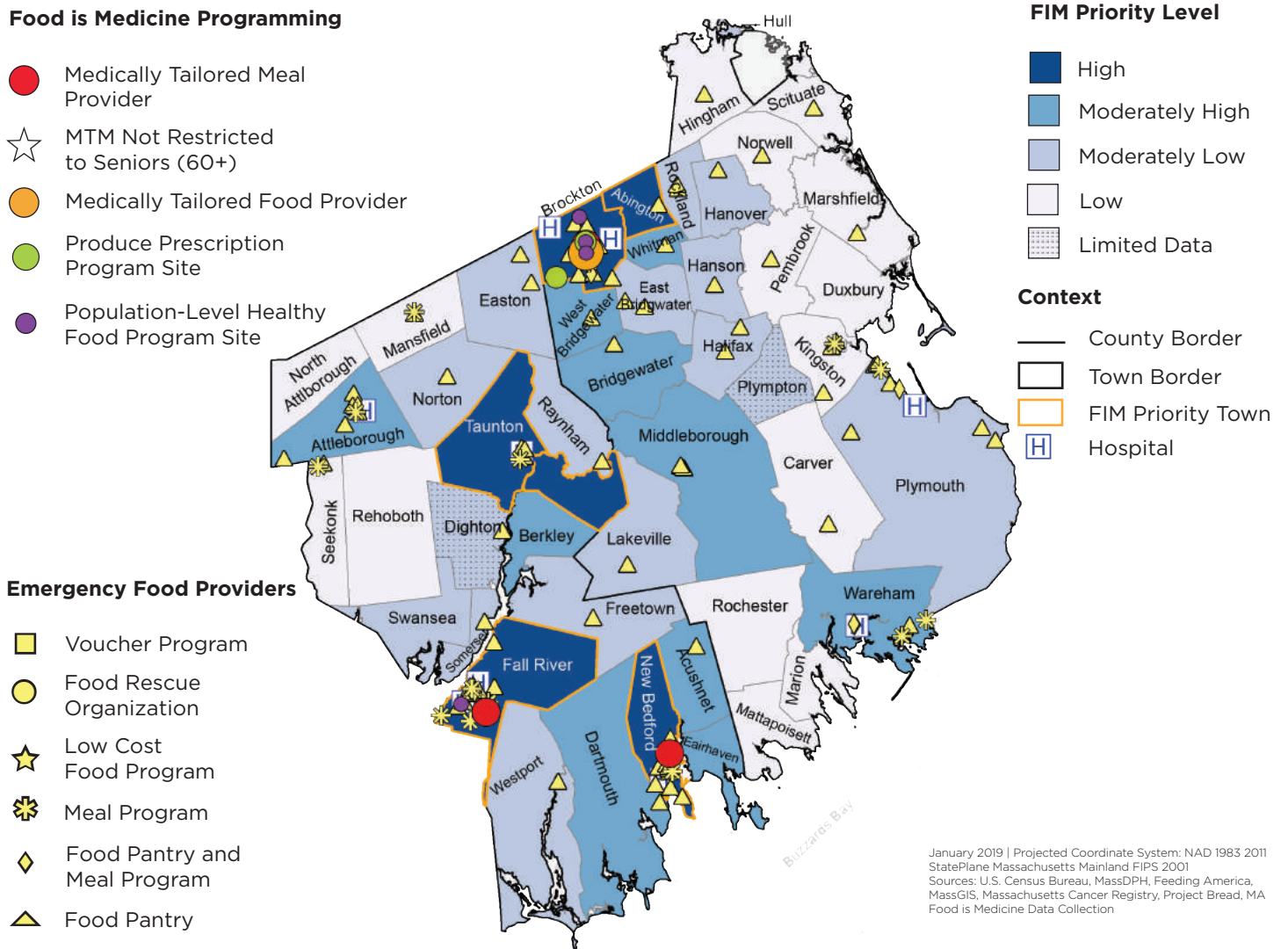
Appendix Table 6: Food is Medicine Factors of Need, Southeastern Massachusetts

Food is Medicine Indicators of Need	Regional Data
Food Insecurity	About 40% of the region's census tracts have food insecurity rates higher than the state average (10.9%), reaching up to 42% of households in one area of Brockton. The highest concentrations of food insecurity in the region are in Brockton, New Bedford, and Fall River, where 86%, 87%, and 92%, respectively, of the cities' census tracts have higher than average food insecurity. ¹³³
Vehicle Access	In certain areas of Brockton and New Bedford, over half of households lack access to a vehicle. In Fall River, this rate reaches up to 61% of households. ¹³⁴ According to the attendees at the Southeast Regional Listening Session, food and health care access are especially difficult for those without a car, as public transportation is not a reliable substitute.
Chronic Disease	Plymouth County has the highest rate of hospitalizations from cardiovascular disease (CVD) in the state; Brockton's CVD hospitalization rate is 61% higher than the state average. ¹³⁵ Brockton and New Bedford are ranked 7 th and 10 th for highest HIV prevalence in the state, respectively. ¹³⁶ Obesity is another issue for the region; the obesity rates in Bristol and Plymouth counties are higher than the state average. ¹³⁷ Additionally, lung/bronchus cancer and stroke rates are substantially higher than state averages within this region. ¹³⁸

FOOD IS MEDICINE PRIORITY ANALYSIS

SOUTHEASTERN SNAPSHOT

MASSACHUSETTS 2018



INNOVATION IN SOUTHEASTERN MA

Given the richness of the region’s racial and ethnic diversity, Food is Medicine interventions in Southeastern Massachusetts address a variety of cultural and linguistic needs. Located on a main street in downtown Brockton, Brockton Neighborhood Health Center (BNHC), also a member of the Food is Medicine State Plan Planning Council, hosts a number of nutrition programs that reflect the needs of its community. Bringing Health Home is a food voucher program where the vouchers can be redeemed at a mobile market (operated by Stonehill College) that regularly stops at BNHC and at affordable housing sites. Supplied at-will by providers when they see need or if a patient asks, the voucher supply runs out quickly. With 90% of the public housing site participants reporting that they rely on the mobile market in order to access fresh fruit and vegetables, Bringing Health Home reflects the need to create sustainable funding streams and create standardized assessments of Food is Medicine need. Other nutrition programs at BNHC include its partnership with Vincente’s grocery store which features a full-time on-site dietitian and a host of nutrition programs including various disease-specific cooking classes.

Regional Snapshot

CAPE COD AND ISLANDS

BARNSTABLE, NANTUCKET, AND DUKES COUNTIES

Massachusetts' Cape Cod and Islands region encompasses the 23 cities and towns of Barnstable, Nantucket, and Dukes Counties. Within this region, Barnstable and Yarmouth have the highest Food is Medicine priority level due to their high rates of food insecurity, low rates of vehicle access, and elevated chronic disease burden. Tourism drives the local economy, which contributes to high housing costs and a high rate of seasonal employment. Year-round residents tend to be older. Together, these factors contribute to, and exacerbate, the rates and risk of food insecurity and chronic disease. While numerous organizations like Sustainable Cape and Lower Cape Outreach Council are working diligently to advance nutrition-focused health care and food access, our data illustrate ample opportunity to enrich the program diversity on the Cape and improve access on the islands.

SPECIAL CONSIDERATIONS

Seasonal Employment

In 2017, seasonal employment on the Cape and the Islands was approximately four times

higher than the rest of the state. The number of employees working within the leisure and hospitality sector increased 277% from February to July compared to the state average seasonal change of 65%.¹³⁹ In the summer, a quarter of jobs in Barnstable fall within the leisure and hospitality sector, an industry that offers the lowest hourly wages in the country and the town.¹⁴⁰ With an economy dependent on seasonal employment and tourism, residents experience fluctuations in resource availability. Public transportation, for example, is very limited in the off-season.

Aging Population

Barnstable County is the oldest county in Massachusetts, with 29.9% of its population aged 65 and over, compared to the state average of 16.2%.¹⁴¹ While seniors are likely to have access to health insurance, such as Medicare, they still face barriers to care due to lack of transportation and lack of funds to pay out-of-pocket costs.

FOOD IS MEDICINE CBO:

“Although the population is older overall, many households contain children living with grandparents. Also, seniors are frequently ‘house-rich’ but ‘cash-poor’.”

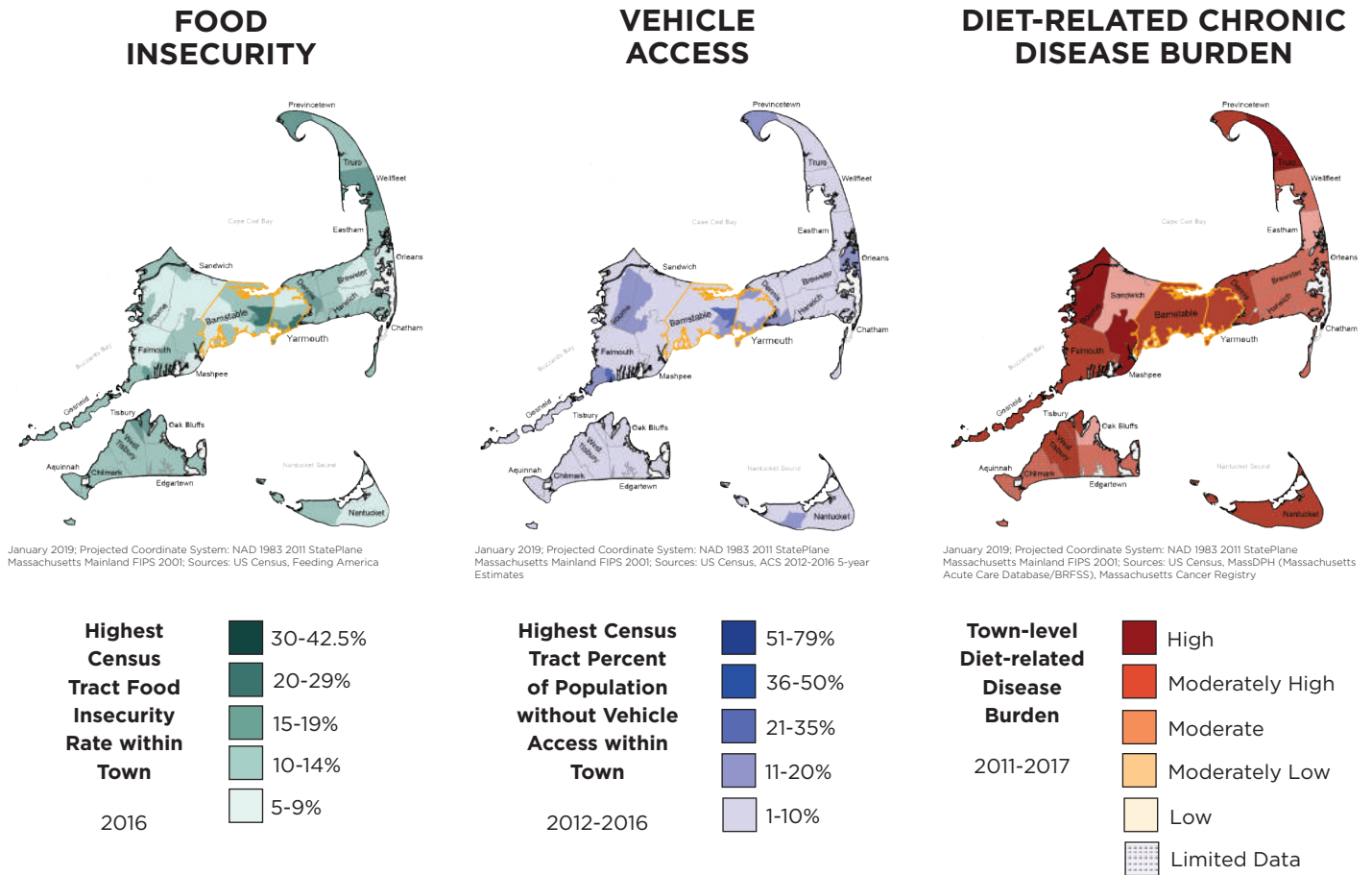
Regional Listening Session Themes: *June 19, 2018, Cape Cod and Islands*

- High housing costs drive younger residents away and contribute to senior isolation.
- Communities with a high number of Brazilian, Portuguese, and Creole speakers face language barriers when accessing health care and food resources.
- Transportation is a challenge, especially for seniors and especially during the “off-season.”
- Mental health issues are undiagnosed and the need for these services is unaddressed. These needs are often connected to a senior’s ability to shop and cook for themselves.

FOOD IS MEDICINE INDICATORS OF NEED

CAPE COD AND ISLANDS SNAPSHOT

MASSACHUSETTS 2018



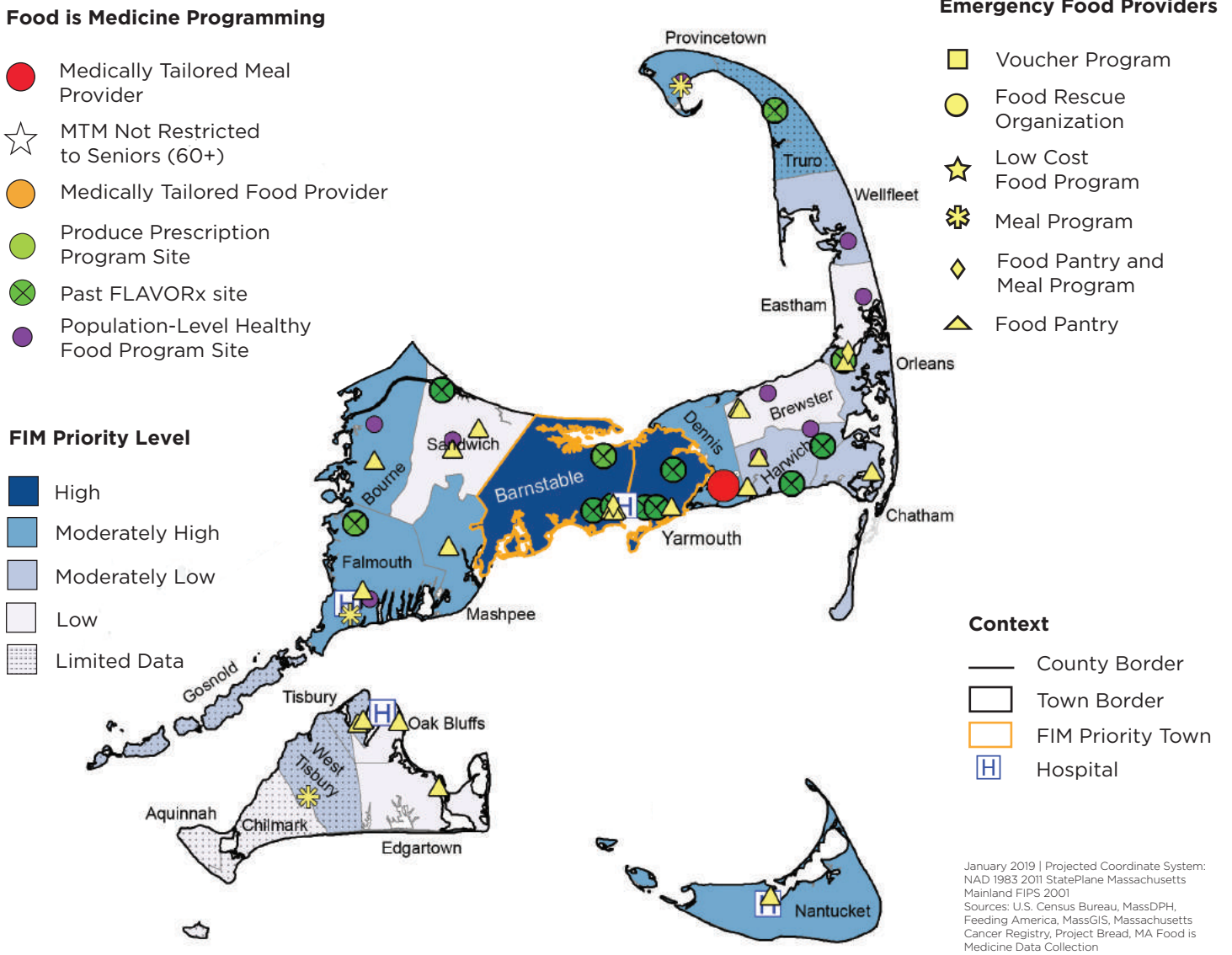
Appendix Table 7: Food is Medicine Factors of Need, Cape Cod and Islands

Food is Medicine Indicators of Need	Regional Data
Food Insecurity	Twelve of the region's 69 census tracts have food insecurity rates higher than the state average (10.9%). The most concerning rates of food insecurity in the region are found in Barnstable (21.7%) and Yarmouth (16.8%). ¹⁴²
Vehicle Access	Pockets of low vehicle access rates are found in Barnstable, Falmouth, and Provincetown. In one area of Barnstable, approximately one fifth of households lack access to a vehicle. ¹⁴³ Both the lack of public transportation and the seasonality of the limited public transportation available can exacerbate senior isolation and health care access.
Chronic Disease	The region's rates of chronic disease are consistently higher than state averages. Provincetown has the highest HIV prevalence rate in the state. ¹⁴⁴ Eleven out of the 17 towns in the region that have available diabetes data have adult prevalence rates above the state average; in Chatham, 10.92% of adults suffer from diabetes compared to the state average of 7.64%. ¹⁴⁵ The Cape and Islands have notably higher cancer rates than the rest of the state, and are home to the worst breast cancer, ovarian cancer, prostate cancer and leukemia rates in Massachusetts. ¹⁴⁶

FOOD IS MEDICINE PRIORITY ANALYSIS

CAPE COD AND ISLANDS SNAPSHOT

MASSACHUSETTS 2018



January 2019 | Projected Coordinate System: NAD 1983 2011 StatePlane Massachusetts Mainland FIPS 2001
 Sources: U.S. Census Bureau, MassDPH, Feeding America, MassGIS, Massachusetts Cancer Registry, Project Bread, MA Food is Medicine Data Collection

INNOVATION ON THE CAPE

The Cape is home to FLAVORx, a grant-funded produce prescription pilot program led by Food is Medicine Planning Council members Dr. Kumara Sidhartha and Sustainable CAPE. Launched on Cape Cod in 2016 through a partnership between six Emerald Physician offices and the Sustainable CAPE's Farmers' Market Coalition, the program provided eligible patients with either a weekly prescription of fruits and vegetables worth \$30 or an equivalent amount in gas gift cards for 12 weeks. The study aimed to test if fruit and vegetable vouchers were more powerful than cash in influencing healthy eating behaviors. All patients were at risk for diet-related chronic diseases, attended weekly cooking classes, and received additional check-up visits. Compared to the patients who received the gas cards, individuals who redeemed the FLAVORx produce prescriptions at farmers' markets or farm stands saw better outcomes in body mass index, low-density lipoprotein cholesterol, and patient wellbeing.¹⁴⁷ Ensuring that these services continue through sustainable funding streams should be a priority for the Commonwealth.

Acknowledgments

This report would not be possible without the invaluable guidance and hard work of many throughout the Commonwealth and beyond.

Thank you to the inaugural leaders of our Task Forces:

PROVIDER NUTRITIONAL EDUCATION AND REFERRAL

- Massachusetts Medical Society
- Dr. Kumara Sidhartha, Cape Cod Healthcare

RESEARCH TASK FORCE

- Children's HealthWatch

CBO TASK FORCE

- Greater Boston Food Bank
- Community Servings

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- Office of Statistics and Evaluation, Bureau of Community Health and Prevention

Layout by: Kristin Sukys and Najeema Holas-Huggins.

Endnotes

- ¹ See online appendix on the Massachusetts Food is Medicine State Plan website: Review of Massachusetts Hunger Relief System.
- ² Following the dissemination of the State Plan's surveys, the national Food is Medicine Coalition released a new definition of medically-tailored meals in January 2019. According to the Food is Medicine Coalition, "medically tailored meals are delivered to individuals living with severe illness through a referral from a medical professional or healthcare plan. Meal plans are tailored to the medical needs of the recipient by a Registered Dietitian Nutritionist (RDN), and are designed to improve health outcomes, lower cost of care and increase patient satisfaction."
- ³ Walter Willet et al., *Food in the Anthropocene: the EAT-Lancet Commission on healthy diets from sustainable food systems*, THE LANCET, (2019) (citing statistics from Lawrence Haddad et al., *Food systems and diets: Facing the challenges of the 21st century*, GLOBAL PANEL ON AGRICULTURE AND FOOD SYSTEMS FOR NUTRITION, LONDON, UK, (2016)).
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