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PUBLIC HEALTH STAKEHOLDERS IN NEW HAMPSHIRE

Mitigating Food Insecurity Among Diabetic Patients in Manchester, New Hampshire

Presented to Dartmouth Hitchcock Medical Center: Population Health and the Foundation for Healthy Communities

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EXECUTIVE SUMMARY

This report reviews the roles of governments, hospitals, financial institutions, and nonprofit organizations in alleviating food insecurity. The purpose of this report is to provide information to help the Population Health team at Dartmouth Hitchcock Medical Center and the Foundation for Healthy Communities to make informed decisions regarding mitigating the food desert in Manchester, New Hampshire. To gather information and provide potential mitigation efforts, the research team also initiated contact with key partners. The research team includes a list of public health grants awarded to organizations in the City of Manchester and across New Hampshire for use in the event a new program is implemented and requires funding.

1. INTRODUCTION

The Dartmouth Hitchcock Medical Center in the Manchester/Bedford region has identified a food desert in Manchester, NH, as evidenced by high rates of chronic diseases related to poor diet. In this paper, we generally define a food desert as an area which has unreliable access to healthy and affordable foods, including fresh produce. Though there are other ways to address these negative health-related outcomes, many, including representatives from the organization Healthy New Hampshire, identified food deserts as low-hanging fruit in addressing these issues.[1]

Historically, the main way that many have addressed food deserts is by introducing a supermarket in the area, because supermarkets generally carry more nutrient dense foods relative to corner stores, as evidenced by the higher obesity rates found in communities near corner stores relative to supermarkets.[2,3] However, many are finding that to be an inadequate solution, and instead are focusing on a variety of different factors to help resolve the issue including food education and finding creative ways to bring fresh produce into food deserts.[4] Throughout this paper, we will be outlining different ways in which governments, healthcare systems and providers, banks, and nonprofits have and can address the food desert in Manchester. We will also be providing contacts for those who may be able to aid in this endeavor.

2. POPULATION HEALTH STAKEHOLDERS

In this section, we describe the roles of various stakeholders in mitigating food insecurity in Manchester, New Hampshire. This section outlines the role of each group, potential programs to be implemented by Dartmouth Hitchcock Medical Center, and contacts made by our team.

2.1 Government Involvement

Federal and local governments both have a part to play when it comes to mitigating the effects of food deserts. To date, more than 130 cities and counties in the United States and Canada have local food policy councils to improve food production and consumption.[5] Because different localities have different issues that cause food insecurity, local governments are uniquely suited to intervene because they are able to interact closely with constituents and are able to define the local food desert in a unique and applicable way. [6] In contrast, the federal government is more ill-suited to resolving these problems. [7]

First, local governments are better suited to identifying food deserts. The USDA defines a Census tract as a food desert if it meets the following criteria:

"Census tracts qualify as food deserts if they meet low-income and low-access thresholds:

- Low-income: a poverty rate of 20 percent or greater, or a median family income at or below 80 percent of the statewide or metropolitan area median family income;
- Low-access: at least 500 persons and/or at least 33 percent of the population lives more than one mile from a supermarket or large grocery store (10 miles, in the case of rural census tracts)." [8]

However, this definition can often be too general to accurately define all food deserts. Many areas, for instance, may lack adequate infrastructure to facilitate access to a supermarket or large grocery store, including a lack of public transportation or inaccessibility due to seasonal changes. Thus, local governments are better suited to understand the factors underlying food deserts, based on their own conditions.

Further, local governments may be better able to identify and resolve the issues by learning from and working with local communities. One way that local governments may be able to do this is by conducting a community food system assessment, as outlined by the American Planning Association (APA). First, in forming an assessment team, the APA recommends that individuals come from different parts of the food industry and bring unique perspectives to the table, and that these individuals begin by discussing and agreeing upon the definition of a food system. [9] Second, the APA recommends that the team define the scope of the assessment by asking question such as:

- What are the community issues or priorities the assessment will address?
- What are the boundaries of the assessment community? Is the focus on a neighborhood?
- What resources are available to conduct the assessment? [10]

In addition, the team should collect data and get community input through community events, surveys, and walking audits.[11] Finally, the team should complete the assessment and make policy recommendations accordingly.[12] More detailed information may be found in the APA's Planning Advisory Service Memo on Community Food System Assessments.

Some methods to mitigate food deserts are increasing the number of vendors in the area, reducing transportation barriers, increasing local food production, and increasing consumption.[13] Local municipalities have incentivized an influx of vendors including financial and zoning incentives, mobile food markets and farmers markets. In 2019, for instance, New Orleans implemented new rules to limit the spread of discount stores, which traditional grocery stores have struggled to compete with. Specifically, they prohibited discount chains to open stores within a two-mile radius of an existing discount store in specific parts of the city. [14] Additionally, a study in 2018 concluded that public transit systems had the potential to improve food access within a case study region by 23 percent.[15] Louisville, Kentucky recently developed an urban farm in a high-poverty neighborhood. This urban farm is teaming with the Food Literacy Project as a part of a community-wide effort to improve food access in local communities and promote healthy eating.[16]

2.1.1 *The City of Manchester*

Manchester has a population of roughly 110,000 with a 15 percent poverty rate, which is four percent higher than the average across the United States.[17] It is predominantly white.[18] According to a survey conducted by the New Hampshire Economic and Labor Market Information Bureau, 79.1 percent of workers drive to work alone, with 11.7 percent carpooling, indicating that a majority of Manchester residents who work have access to a car.[19] Thus, the target population who suffer from food insecurity are those who are not employed, along with the 5.8 percent of the working population who use other means to commute to work and part of the 3.5 percent who work from home.

The City of Manchester is already implementing many initiatives that may help in mitigating food deserts. Since 2009, the city has made improvements in accessibility by adding bike lanes, notably on Elm Street and off into its surrounding neighborhoods, and are additionally starting pilot programs to create new bike lanes in the other parts of the city, observing changes in traffic patterns and ensuring safety.[20] They have additionally worked toward improving sidewalks and increasing lighting to encourage walking, and are considering implementing a rail system in the future. Furthermore, the Manchester Transit Authority hosts direct lines to grocery stores, called "Shopper Shuttles," to grocery stores including the Hooksett and Elm Street Market Baskets, and the Bedford and East Side Plaza Hannafords.[21]

In addition, the city hosts a farmers market on Thursdays throughout the late spring and summer, where farmers from outside the city come and sell their products.[22] Mobile food markets, like the one run by the Organization for Refugee and Immigrant Success, and community gardens are also present in Manchester.[23]

Despite these strides, the Manchester Planning Committee is continuing to make more advancements in securing accessibility throughout the city.[24] However, they are not prioritizing food desert mitigation as part of their Master Plan, because they have not deemed it to be a pressing issue based on the testimony of their constituents.[25]

2.1.2 *Government and Corner Store Partnership*

The United States Department of Agriculture defines a food desert as any census tract that meets both of the following criteria: the tract has a poverty rate at or above 20 percent and 500 people or 33 percent of the tract lives more than one mile from a supermarket or large grocery store. [26]

As stated, 77.4 percent of Manchester residents live more than half a mile from a supermarket. [27] Research shows that while opening a supermarket in a food desert will remedy the issue of distance to healthy food, this will not change purchasing patterns. [28] Healthy food is often expensive. [29] In order to improve the diets of diabetic patients, healthy food must be both more readily available and less expensive.

The New Hampshire Department of Health and Human Services oversees the "Double Up Food Bucks" program. SNAP participants can receive 50 percent off on fruits and vegetables from participating supermarkets, farmers markets, mobile markets and farm stands.[30] Out of the over 50 participants in New Hampshire, only one is located in Manchester: the Manchester Community Market, which we have previously mentioned.[31]

There are few supermarkets in Manchester; however, there are over a dozen corner stores.[32] If decided upon, DHMC could follow the screening and referral model used by Kaiser Permanente Colorado (discussed later in the report) to increase SNAP enrollment among qualified diabetic patients. They would then have to work with the Department of Health and Human Services to expand the Double Up Food Bucks program to Manchester corner stores.

2.2 Health Care Involvement

This subsection summarizes and outlines programs to be considered for implementation by DHMC. Possible programs include targeted food insecurity and SNAP screening,

comprehensive diabetic management education, and referral and connection of patients to healthy food resources. Implementation of these types of programs, to any extent, will be beneficial to patients. The Geisinger "Fresh Food Farmacy" utilizes all of these tools minus SNAP screening. The following section offers an example for each tool.

2.2.1 Geisinger: Fresh Food Farmacy

One program option for implementation in Manchester is the "Fresh Food Farmacy." This program was started in 2016 by Geisinger Medical Group and has since improved the health of their diabetic patients.[33]

The first component of the program is screening for food insecurity. Geisinger uses the following two questions to accomplish this task:

1. "Within the last 12 months have you run out of food and not had the money to buy more?
2. "Within the last 12 months have you worried about running out of food and not having the money to buy more?

If a patient responds "yes" to one of the two questions, they are considered food insecure and meet the food insecurity requirement for program enrollment.[34] The patient must also have a HbA1c of greater than 8, in order to be referred by their primary care physician for enrollment.

Once enrolled, a patient will receive "care management, diabetes education and consultations with...dietitians and pharmacists." The patient will receive at least 20 hours of diabetes education, nutritional information and a "welcoming kit" with measuring cups and spoons, and recipes. Patients will receive healthy food from the Farmacy, twice a day for five days per week. The Farmacy will provide meals for both the patients and their household. Patients will be offered additional, free, interactive nutrition and wellness education from dietitians and health coaches. Participants are also offered grocery store tours and cooking demonstrations.[35]

On average, since the program was implemented, patients saw a 2-point drop in HbA1c, in addition to lower weight, blood pressure, triglycerides and cholesterol. This program lowers cardiac risk factors.[36] Data from one Farmacy location shows a 27 percent decrease in emergency room usage, a 70 percent decrease in hospital readmission rate, and a 16 percent increase in patients receiving eye exams. Patients also were more likely to utilize preventative care services such as mammograms and colonoscopies.[37] Patients, combined, saved roughly $1.5 million in health-care costs.[38] For every one point of HbA1c reduction, a patient will save $8,000 to $12,000.[39]

The Geisinger Fresh Food Farmacy currently has three locations in Pennsylvania: Shamokin, Scranton and Lewistown. Shamokin and Lewiston are rural locations, while Scranton is an urban one. There are currently approximately two hundred patients enrolled across the three locations.[40]

Most of the food is purchased from food banks in Pennsylvania including the Central Pennsylvania Food Bank and the CEO Weinberg Regional Food Bank.[41] The program is primarily funded through grants and donations. At the end of this report, there is a list of foundations who have funded population health-related projects in New Hampshire.

The research team has been in contact with Alicia Trelease. In her last correspondence Alicia copied Breanna Grzech, the associate project manager. The next steps in implementing this program, if decided upon, would be to schedule a call with Breanna in order to discuss potential interest in purchasing the guide for starting a Fresh Food Farmacy program in Manchester.

2.2.2 Kaiser Permanente Colorado: Resource Referral Program

Kaiser Permanente in Colorado utilizes a food insecurity screening and referral program to "alleviate food insecurity and improve dietary quality." Dr. Sandra Hoyt Stenmark and colleagues produced an article describing barriers and lessons learned from implementation of this program in two pediatric clinics.[42]

The first component of the program is screening for food insecurity. Kaiser Permanente in Colorado uses the Hunger Vital Sign tool. Kaiser uses the following two statements:

1. Within the past 12 months, we worried whether our food would run out before we got money to buy more.
2. Within the past 12 months, the food we bought just didn't last, and we didn't have money to get more.[43]

Patients have the option of circling "often true, sometimes true, or never true." An answer of "sometimes true" for either answer indicates food insecurity.

Their research team observed initial problems. Clinical teams were unaware of the prevalence of food insecurity in their patient population. Clinical teams were unaware of SNAP and WIC nutrition programs available to patients. They were also uncomfortable discussing food insecurity with their patients "for fear it would feel stigmatizing to parents or raise parental concerns about being reported to social services." In order to combat these concerns, the research team produced an educational handout for staff. This handout included information on the "prevalence of food insecurity in households with children in

Colorado", "support provided by WIC and SNAP", the previously stated screening questions, and the referral process.[44]

The second component of the program was the referral process. The Kaiser Permanente team used an active referral process, after they saw a passive one was ineffective. In the active model, medical staff asked parents and patients for permission to have a Hunger Free Colorado representative call them to discuss food resources. The organization provides a toll-free hotline that assesses residents for eligibility to federal nutrition assistance programs. HFC will submit SNAP applications for residents and "direct clients to other federal programs."[45] They will also connect clients to local food pantries. Medical staff provide patients with a HIPAA consent form during this process. In the active model, 75 percent of parents spoke with an HFC hotline representative.[46] In the passive model, where parents were given the phone number of the hotline and instructed to call, just five percent of parents contacted the HFC hotline.[47]

If the DHMC team elects to establish a referral program for patients to food banks, pantries or other resources, it must be done using an active model.

One additional barrier encountered by the Kaiser Permanente team was that it was time consuming for clinical teams to print and hand-fax referrals to HFC. In response, the research team helped establish a specialist team (funded through Kaiser Permanente primary care and community benefits) that would receive electronic referrals from the clinical team. The specialist team assesses patient needs and connects them with social resources such as food sources and is in charge of faxing the patient referrals to HFC.[48]

In 2017, 1,586 patients were referred to the HFC.[49] Eighty percent of these patients agreed to receiving food related services. Of the 561 households potentially eligible for SNAP that were not previously enrolled, 100 households enrolled in SNAP.[50] This amounted to six percent of referred patients.[51] If the DHMC team elects to establish a referral program for patients, they cannot solely refer patients to federal programs due to low enrollment rates.

In order to better utilize screening and referral tools, Kaiser Permanente Colorado adopted a targeted screening process. Any Medicaid beneficiaries at KPCO were asked about enrollment in SNAP or WIC in addition to other related programs instead of for food insecurity.

2.2.3 Kaiser Permanente: Mom's Meals Partnership

Kaiser Permanente partners with "Mom's Meals" to provide healthy food to patients at low-cost. Mom's Meals delivers fresh prepared meals to participants in all 50 states including New Hampshire. Their kitchens are USDA-inspected. All food is transported in specially designed containers to keep food fresh for up to two weeks after delivery in a refrigerator.[52] One food packet with two snacks costs $5.98 for participants.[53] Individual meals can cost up to $7.00.[54] The meal plans offered by Mom's Meals are designed by dietitians and professional chefs. These plans can be tailored to patients with cancer, heart disease, kidney disease, and/or diabetes.[55]

Kaiser Permanente established a program for their patients with Medicare coverage. If decided upon, DHMC would contact Mom's Meals in order to create a streamlined system for diabetic patients to receive low-cost meals. Patients can use this resource without the intervention of DHMC; however, the benefit of the hospital getting involved would be to find a way to have insurers potentially cover meals. If DHMC chooses, they could incorporate this program into a screening and referral program. This would be one resource option presented to patients who indicate food insecurity. As stated in the previous section, an active approach would increase program usage. Our research team has not communicated with representatives at Mom's Meals.

2.2.4 Catholic Medical Center: Diabetes Resource Institute

The Catholic Medical Center, Elliot Hospital Dartmouth Hitchcock Children's Hospital, and The Department of Veterans Affairs Manchester Medical Center are located in the City of Manchester.

Catholic Medical Center operates a "Diabetes Resource Institute." Certified diabetes educators provide group and individual education sessions. Patients are referred by their primary care physician; they are provided self-management education. Patients learn to manage daily nutrition, exercise and medication. They learn how to manage diabetic emergencies and "whom to call."[56]

The Diabetes Resource Institute facilitates support groups. Group sessions cover the following topics. This list was taken directly from the Catholic Medical Center website:

- Medications
- Blood glucose self-monitoring
- Insulin pump training
- Pattern control of blood glucose levels
- Treating high and low blood glucose

- Nutrition and exercise
- Foot care assessment and education
- Avoiding or coping with diabetes complications
- Diabetes management during vacation or travel
- Diabetes management during brief illnesses
- Use of the health care system and community resources
- Family adjustments
- Psychological adjustments
- Preventing complications of diabetes [57]

Catholic Medical Center sends out a newsletter to patients. In it, CMC connects patients to resources that "promote healthy living and diabetes management." If decided upon, DHMC would reach out to CMC to discuss the contents and frequency of the newsletters. Outcomes and effects of the individual and group sessions and the newsletter are not publicly available. If decided upon, DHMC could attempt to learn this information from the Catholic Medical Center.

2.2.5 Elliot Hospital: The Elliot Center for Diabetes Management

The Elliot Hospital operates "The Elliot Center for Diabetes Management." The Center offers patients educational programs such as: "weight management, heart healthy eating, healing metabolic syndrome, and supermarket nutrition coordinators." [58] The Center offers Diabetes Self-Management Education programs to patients and their families. They offer individual consultations as well as a set of four group sessions held monthly. The group education program is nine hours in total and covers all self-management related topics. The four sessions listed on their brochure are: 1) Facts about Diabetes for Better Management, 2) Eating Healthy with Diabetes, 3) Understanding Physical Activity, Stress and Illness, and 4) Understanding the ABCs of Diabetes and your Lab Results. Additional details are listed on the website of the Center. [59]

In June of 2019, a Community Health Needs Assessment was conducted on the City of Manchester. The Elliot Hospital posted this assessment on its website. Our research team identified two notable findings: 1) 24.6 percent of Manchester residents are physically inactive: census tract regions 14,15 and 20 in Manchester had physical inactivity rates greater than 35 percent (the average urban inactivity rate is 24 percent of the population); and 2) 77.4 percent of Manchester residents lack access to healthy food (living more than half a mile from a supermarket); the average rate across 500 U.S. cities is 61.9 percent[60]

2.3 *Bank Involvement: Community Reinvestment Act*

Banks are additional possible partners for DHMC to work with in addressing the food desert in Manchester, namely through helping finance strategies to mitigate food insecurity. Banks and nonprofit hospitals, while they largely operate independently of one another, often have similar goals with respect to complying with the Community Reinvestment Act (CRA) and the Affordable Care Act (ACA), respectively. Enacted in 1977, the CRA established that banks would be evaluated by examiners to determine whether banks were meeting the credit needs of the communities in which they were located.[61] Large and small banks are assessed with slightly different criteria, [62] but these evaluations are broadly based on the efficacy and engagement of banks within their geographic assessment area and their "responsiveness to community development needs."[63] The ACA requires that nonprofit hospitals conduct a Community Health Needs Assessment (CHNA) every three years to continue holding their nonprofit status.[64] In short, the hospitals' assessments need to define the communities within which the hospitals serve and assess the health needs of that community. [65]

According to Steven Kuehl at the Federal Reserve Bank of Chicago, the requirements imposed on banks and nonprofit hospitals are incidentally quite similar and present an opportunity for collaboration. Kuehl writes that "the CHNA requirement under the ACA and the assessment framework applied by the CRA bear remarkable similarities that, if leveraged appropriately, hold the potential to underpin strategic, mutually beneficial partnerships that are both compliant with applicable regulations and create local economic impact."[66] Examples of partnerships could include credit lines that bridge the gap between provision of care and federal or state reimbursement or financing facility renovations and other improvements.[67]

Kuehl identifies several specific examples of banks contributing to health services in meeting their CRA obligations. Bank of Springfield in Springfield, Illinois originated a $1 million line of credit to a nonprofit that "operates food pantries, provides crisis assistance, and operates a health clinic for the needy."[68] MainSource Bank in Greensburg, Indiana provided a loan of $1,119,000 to finance a building in which mental health services and childcare for low- and middle-income individuals.[69] Republic Bank and Trust in Louisville, Kentucky supported economic development in its service area by funding renovations to a community hospital "in a moderate-income census tract, which created employment opportunities for local residents."[70]

However, in New Hampshire, few if any banks proximal to the Manchester area incorporate health services activities into their community development practices. Fleet Bank in Manchester received an overall rating of Satisfactory and was last evaluated in

April 1998 by the Federal Reserve.[71] Fleet Bank's evaluation report suggests that this bank pursues community investment practices primarily with respect to supporting affordable housing projects.[72] Two banks in Manchester, Citizens Bank New Hampshire and Hampshire First Bank, are supervised by the Federal Deposit Insurance Corporation, and these two institutions have Outstanding and Satisfactory CRA ratings, respectively. [73] These banks under FDIC supervision also have focused much of their community development efforts on affordable housing, per their 2002 and 2011 CRA evaluations, for Citizens Bank New Hampshire and Hampshire First Bank, respectively.[74] Other banks in New Hampshire have invested in small businesses in various capacities,[75] but investing in health-related services has been an under-utilized option.

While working with community banks has the potential to be an important tool for the Population Health team to consider, thinking about how to finance health-related services is likely a secondary step after identifying the proper strategy to pursue. As such, the next section details some possible future partners in the nonprofit sector to help pursue next steps for identifying how the Population Health team wants to proceed and subsequently implementing those strategies.

2.4 Nonprofit Involvement

Several nonprofit organizations stand out as possible partners for the Population Health team to work with as it goes about addressing the Manchester food desert. In this section, we describe their work and provide a few potential contacts for moving forward with future research and implementation of possible mitigation strategies.

While in this report we have aimed to provide the DHMC Population Health team with an overview of the various stakeholders that can and potentially should be involved in addressing the food desert problem in Manchester, we were unable to conduct on the ground research or offer comprehensive policy recommendations. As such, the DHMC Population Health team may want to reach out to and or enlist the support of some of these stakeholders to engage with groups that have on the ground experience identifying and mitigating problems that inspire and exacerbate the food desert situation in Manchester.

2.4.1 Food Trust

Contact: Bridget Palombo, Senior Associate, Community Food Retail

Based in Philadelphia, Pennsylvania, The Food Trust is a nonprofit organization that works to improve food access and education around nutrition throughout the country. The organization partners with neighborhoods, schools, grocers, farmers, policymakers, and

health care providers to help these various entities achieve their goals in reducing food insecurity and improving access to nutritious food and nutrition-related education. [76]

With respect to their health care-related partnerships, The Food Trust works with hospitals, health care systems, medical students, and others to link healthcare practitioners and institutions with public health. One primary example of this connection is free health screenings in food retail settings, such as corner stores, farmers markets, and groceries. [77] These screenings may also be accompanied with workshops or other educational opportunities geared towards helping community members develop a greater understanding of their nutritional needs.[78] These connections between health care providers, such as DHMC, and community food sellers and retail spaces offer another possible avenue for mitigating food deserts in Manchester.

Karen Shore, former director of The Food Trust who oversaw the nonprofit for seven years, identified several important points for addressing food insecurity in populations like that which DHMC hopes to target in Manchester.[79] Her work at The Food Trust focused primarily on including food sellers in the solution to addressing food insecurity, and she has subsequently founded a small consultancy to continue similar work.[80]

Understand the different and interrelated community contexts specific to the area you are trying to help. Work with what members of the community want or could use, rather than strictly what an outsider would identify as a solution. For example, it is important to recognize how community members engage with their local food sellers. Shore noted that in a diverse area such as Manchester, some food sellers might be perceived as cleaner or safer than others, e.g., one convenience store among others, for reasons including store location, products sold, consumer biases, and more. Solely increasing the amount of fresh food being sold in a convenience store may not sufficiently increase community members' consumption of fresh food without understanding the utility and value community members perceive various food sellers to have.

Consider what is currently offered inside the community and inside the stores selling food. Shore highlighted the importance of understanding what products were being sold already and where they were being sold before creating and trying to implement a plan. Important questions to consider in this vein include:

- What do potential food sellers currently have in terms of food items they sell?
- What food items are lacking from the consumers' diets that need to be supported (e.g., produce, eggs, meat)?
- Do food sellers have the capacity to purchase the relevant food items from local or regional food distributors? If not, how can they obtain this capability?

If the store *does* have access to fresh produce or other nutritious foods, Shore noted that it is important to consider how these food items are marketed. A lot of research has focused on marketing junk food products, such as Frito-Lay and Coca Cola products, but nutritious foods do not have the same corporate power behind them. To the extent that food sellers are able to access fresh and nutritious food products, some consideration ought to be given towards how these products are displayed in the store.

Trying to ameliorate problems relating to food insecurity from an outsider's perspective requires you to bridge the gap between what the community wants, what the community needs, and how it can be made possible. Based on her experience thinking about and addressing these types of problems, Shore noted that outside forces trying to solve food insecurity problems typically focus on identifying and meeting a primary need. This need could be public transportation for people to be able to make it to grocery stores; education about nutritious food; lack of nutritious food being sold by nearby food sellers; or other needs. However, Shore cautioned that this removes a lot of important community context. To successfully and sustainably address problems around access to and consumption of nutritious food, Shore emphasized the need to make the community part of the conversation to better understand existing infrastructure, preferences, and practices.

2.4.2 Wholesome Wave

Unable to provide a contact

Wholesome Wave is a national nonprofit organization that focuses on providing access to affordable produce for low-income Americans.[81] We were unable to speak with Wholesome Wave due to difficulty contacting their organization during the coronavirus pandemic. Furthermore, many of the public resources that Wholesome Wave makes available to the public are not currently publicly accessible due to their website being under construction. However, we were able to obtain a white paper the organization put out with the support of The Food Trust in 2014. This paper detailed recommendations for adopting a "hub and spoke" model for distributing nutritious food items throughout the state with concurrent application of a nutrition incentive program for SNAP recipients at local, rural convenience stores. For this study, Wholesome Wave conducted interviews with community partners who worked with SNAP recipients; food retailers; and local food producers and distributors. As such, Wholesome Wave has experience working with on-the-ground stakeholders and communities and has the potential to be a valuable ally for the DHMC Population Health team in tackling the food deserts in Manchester.

2.4.3 New Hampshire Food Bank

Contact: Nancy Mellitt, Director of Development

The New Hampshire Food Bank helps provide food and resources to hundreds of thousands of food insecure people in New Hampshire. Working with over 425 partner agencies to help distribute food and provisions, the New Hampshire Food Bank is at the forefront of mitigating need related to food insecurity in the state.[82] We were unable to speak with a representative from the New Hampshire Food Bank, in part because of their efforts being almost solely focused on meeting need caused by the coronavirus pandemic, but the Director of Development, Nancy Mellitt, expressed interest in this project via email. The New Hampshire Food Bank was identified as a possible "hub" by Wholesome Wave in the "hub and spoke" model they proposed to help distribute fresh produce to food sellers across the state, and it may be a valuable partner in various possible strategies that DHMC may want to pursue.

2.4.4 D.C. Central Kitchen: Healthy Corners

In Washington, D.C., the non-profit "D.C. Central Kitchen" provides low cost, healthy food to corner stores in D.C. They deliver and sell fresh produce to corner stores at wholesale prices and in small quantities. This allows the corner stores to sell the produce to consumers at more affordable prices. D.C. Central Kitchen receives funding through philanthropy and through funding from the D.C. Department of Health.[83] If decided upon, DHMC could work with one of the previously listed nonprofit partners to establish a similar system. D.C. Central Kitchen welcomes organizations to use their model and implementation details can be found through subscription at the following link: https://dccentralkitchen.org/healthy-corners/

3. CONCLUSION

In this report, we have aggregated and analyzed possible solutions and partners for the DHMC Population Health team to tackle food deserts in Manchester. The Manchester local government has not specifically addressed food desert in the city. As such, the Population Health team may want to alert the government about its concerns and possible plans going forward so that both parties are on the same page and to possibly encourage collaboration. The health care systems described above, and Geisinger in particular, have the potential to serve as a model with respect to the Fresh Food Pharmacy route. We included some information about a possible partnership between DHMC and local banks to help finance food desert mitigation strategies once a course of action has been determined. Furthermore,

we have included a list of foundations (see Appendix) that could also help finance programs or future endeavors to improve access to nutrition in Manchester. Finally, the nonprofit organizations described at the end of this brief may be useful partners if the Population Health team chooses to work more with local food sellers and convenience stores in the area (several of whom we tried to reach via telephone but were unable to do so) to identify more specifically whether the food desert arises from a problem with supply or demand and procure a longer-term solution.

Our overall assessment of these stakeholders can be broken into two primary paths for the DHMC Population Health team to choose between. The first path involves pursuing a Fresh Food Farmacy that would build on the contact between the diabetic population that the team seems primarily concerned about and the health care providers. If the Population Health team aims to ameliorate the food desert among the population that DHMC is already in contact with, e.g., the diabetic population with whom DHMC already works, pursuing implementing a Fresh Food Farmacy or similar program might be most effective. The second path involves further research in the Manchester community to pursue a strategy or strategies that involve community partners (e.g., local government, food sellers, etc.). If the team aims to ameliorate the food desert in Manchester more broadly, i.e., not just among people who are DHMC patients, the team might want to consider working with nonprofits or other community partners in Manchester to create a more independently sustainable and long-term strategy. There are variations, of course, that could be pursued with respect to either strategy, but we find that these two paths reflect the main options for the Population Health team to initially consider going forward.

In sum, we hope that this report provides some clarity for the Population Health team on possible options and partners for pursuing food desert mitigation strategies going forward.

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Appendix A

The research team compiled a list of public health grants, awarded to organizations in Manchester city and across New Hampshire. The team has listed, below, each funding organization, recipient, use of funds, and amount awarded. This information was taken directly from the "Foundation Directory Online by Candid."

Foundation: Robert Wood Johnson Foundation
Recipient: The City of Manchester Health Department
Use of funds: "To award the Culture of Health Prize for making great strides in elevating a community toward better health for all."
Amount: $25,000 (2016)

Foundation: Robert Wood Johnson Foundation
Recipient: New Hampshire Charitable Foundation
Use of funds: "To conduct a series of activities to engage funders in conversations about the importance of and strategies to incorporate a health equity lens into grantmaking for substance use disorders."

Amount: $176,172 (2019)
Foundation: The Bank of America Charitable Foundation Inc.
Recipient: Catholic Medical Center
Use of funds: "Program operating/support"
Amount: $5,000 (2018)

Foundation: Annie L. Rowell Intervivos Trust
Recipient: Catholic Medical Center
Use of funds: Daily operations
Amount: $384,146 (2019)

Foundation: The Bank of America Charitable Foundation Inc.
Recipient: New Horizons (shelter and soup kitchen)
Use of funds: Program operating/support
Amount: $5,000 (2017); $3,500 (2018)

Foundation: The Jack and Dorothy Byrne Foundation Inc.
Recipient: New Hampshire Food Bank
Use of funds: N/A
Amount: $121,000 (2012-2018)

Appendix B

Contact List

We have assembled a list of all those whom we have contacted to complete this project, for your reference.

Name: Beth Wheeler
Organization: Healthy New Hampshire
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Name: Jodie Nazaka
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Name: Bridget Palombo
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Name: Nancy Mellitt
Position: Director of Development
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