Outgrowing Our Problem: Tackling Food Deserts in a Refugee Community

Wicked Problem

When one thinks of Minnesota, the first images that come to mind are probably not of urban communities with large refugee populations. However, Minnesota is a hub for one of the largest populations of Somali refugees in the United States.[1] In 2012, nearly 20,000 Somali refugees lived in the Twin Cities area, with a significant portion (63%) living in poverty.

Because of the large number of Somali families living in poverty, a significant problem seen in our local community health center is our clients being able to access fresh food. There are a number of communities in Minneapolis with access to farmers markets, which would provide access to fresh, affordable foods, but unfortunately this community does not have one. The registered dietician at the community health center provides cooking classes to refugees, helping them adapt to foods available in this country, but a real barrier to adapting recipes is getting access to fresh foods, especially when they are out of season. In other words, many of the refugees are living in a food desert.

A food desert is defined as a neighborhood with limited access to nutritious, healthy food.[2] Numerous studies have been done to understand food deserts within communities and their relationships to health, socioeconomic status, and race/ethnicity. However, little is known or understood on how to increase food access and security among residential locations struck by a food desert.[2,3] Food is an essential part of well-being, and having access to healthy and affordable foods is only one part of making a community prosper. Eating specific foods such as fruits, vegetables, and grains have been associated with reduced risks of cardiovascular disease, cancer, diabetes, Alzheimer disease, cataracts, and age-related functional decline.[4] The connection to oral health is profound. Individuals with poor oral health lose teeth, have poor nutrition, and are at greater risk for oral cancer.

When looking at small to mid-size retailers in Minneapolis, Minnesota that participate in the Supplemental Nutrition Assistance Program (a nutrition program for families living in poverty), only one-third of the 91 stores stocked one or more varieties of fresh vegetables and only one-quarter stocked whole grain-rich products.[5] Focus groups done with low-income residents living in selected urban and rural Minnesotan communities expressed barriers to shopping in their community to be the cost, quality of food and food choice limitations. The individuals in this study (which are of similar income level as the Somali refugees in our community)

---

[1] Sunni, M. (2015 Sept). Diabetes In Somali Children In Minneapolis and St. Paul, Minnesota (Master's thesis). Retrieved from http://conservancy.umn.edu/bitstream/handle/11299/175490/Sunni_umn_0130M_16517.pdf?sequence=1&isAllowed=y

[2] Walker, R., Keane, C., Burke, J. (2010). Disparities and access to healthy food in the United States: A review of food deserts literature. Health & Place, 876-884. Retrieved from https://www.researchgate.net/profile/Jessica_Burke2/publication/44592398_Disparities_and_access_to_healthy_food_in_the_United_States_A_review_of_food_deserts_literature._Health__Place_16(5)_876-884/links/55dcc9fa08ae591b309ab8da.pdf

[3] Liu, R. (2003). Health benefits of fruit and vegetables are additive and synergistic combinations of phytochemicals. *American Journal of Clinical Nutrition*, 78(suppl): 517S-520S. Retrieved from http://www.beauty-review.nl/wp-content/uploads/2015/06/Health-benefits-of-fruit-and-vegetables-are-from-additive-and-synergistic-combinations-of-phytochemicals.pdf

[4] Liu, R. (2003). Health benefits of fruit and vegetables are additive and synergistic combinations of phytochemicals. American Journal of Clinical Nutrition, 78(suppl): 517S-520S. Retrieved from http://www.beauty-review.nl/wp-content/uploads/2015/06/Health-benefits-of-fruit-and-vegetables-are-from-additive-and-synergistic-combinations-of-phytochemicals.pdf

[5] Laska, M., Caspi, C., Pelletier, J., Friebur, R., Harnack, L. (2015 Aug). Lack of Healthy Food in Small-Size to Mid-Size Retailers Participating in the Supplemental Nutrition Assistance Program, Minneapolis-St. Paul Minnesota, 2014. Preventing Chronic Disease, 12: E135. Retrieved from http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4556107/

communicated concern that healthy food options were not affordable in their community and that they suffered from food insecurity.[6]

Our proposed project is going to tackle our wicked food desert problem by combining the resources of the community health center and the local developmental disability (DD) agency to create a new and sustainable small business which employs adults with disabilities in growing food, to be provided at low cost to the local Somali resettlement community. This garden will be cultivated by the clients at the DD agency and the produce will be sold at a newly created community farmers market. This project will help eliminate the food desert that is a barrier to healthy eating habits in our community and help to provide respected employment to adults with DD, including those who are currently a part of the Somali resettlement community.

Proposed Project

The developmental disability agency which serves the Somali resettlement community in addition to other parts of Minneapolis/St. Paul has a large, untapped resource that will help with this wicked problem. It is estimated that just 27.5 percent of individuals with severe disabilities were employed in 2010. With some accommodations, these individuals have the ability to perform at the same or sometimes at even higher levels than their colleagues who do not have disabilities.[7] This initiative will provide increased employment opportunities for the clients of the DD agency by employing them as the main workforce for the garden.

Studies have shown that when gardens are specially designed for individuals with autism, it can enhance focus, attention, and reduce anxiety, ultimately improving these individuals' quality of life.[8] Because of these therapeutic benefits, we see the work at the garden as being mutually beneficial for the agency clients and for the greater community.

We recognize that the Minnesota climate does not support growing produce year-round. With that in mind, the DD agency has secured a portion of funding to buy a repurposed freight container from Freight Farms, a company that repurposes these containers to function as a year-round hydroponic greenhouse. These containers are insulated from the heat and cold, making them an ideal solution to our long Minnesota winters.[9]

One anticipated challenge of this project is getting people to shop in the newly formed community farmers market. We anticipate that our two-pronged approach of reaching the refugee community at the clinical setting of the health center and at the local refugee agency will help us address any barriers people may experience when buying food at the farmers market. For instance, we will ensure all vendors at the farmers market will accept Supplemental Nutrition Assistance Program (SNAP) benefits. In addition, Dr. Simpson will work with vendors to set up a coupon program for the clients at the health center to encourage people to shop at the farmers market.

---

[6] Hendrickson, D., Smith, C., Eikenberry, N. (2006). Fruit and vegetable access in four low-income food deserts communities in Minnesota. Agriculture and Human Values, 23: 371-383. Retrieved from http://www.demonish.com/cracker/1431290387_a2dad86e4f/hendrickson.pdf

[7] Hastings, R. (2012). People with disabilities are plentiful—and underemployed. Society for Human Resource Management. Retrieved on February 5, 2015 from http://www.shrm.org/hrdisciplines/diversity/articles/pages/people-with-disabilities-are-plentiful-and-underemployed.aspx

[8] Gaudion, K., McGinley, C. (2012). Green Spaces Outdoor Environments for Adults with Autism. Retrieved from file:///C:/Users/shabana.sidhu/Downloads/GreenSpacesX_1%20(1).pdf

[9] More information on the growing containers can be found on the Freight Farms website: http://www.freightfarms.com/

Another challenge is finding culturally appropriate ways to incorporate more plant-based options. The typical Somali diet does not traditionally include many fresh fruits and vegetables and largely consists of a rice or pasta with a meat sauce. However, a study completed by a focus group with young Somali girls (averaging 12.5 years) indicated that the girls were open to trying new foods, expressed boredom with traditional Somali meals, and that they had an appetite for American foods.[10] We anticipate capitalizing on this push from young people in the Somali community to help encourage adults to prepare new, fresh foods. Given that adults with DD from the Somali community will be included in the greenhouse work force, there will be natural ties to the community, upon which we will capitalize as we work to bring together this intersection of healthy foods, community nutrition, employment training, and serving the adult DD community.

Planned Approach

The director of the DD agency, Dr. Alvin Reid, will begin by developing a work plan for the clients that will be in the project. This will include staffing needs at the DD agency, selecting clients for the project, developing a schedule for the clients and staff, and securing transportation for the clients. In addition, Dr. Reid will be responsible for creating a plan for the garden that provides necessary sensory inputs and a therapeutic structure to the garden, benefitting the DD clients working there. Simultaneously, Dr. Reid will also be working on purchasing the repurposed freight container to ensure a year-round growing system for the project.

During this time, Dr. Marge Simpson, a community health center family physician and Regina Jefferson, the registered dietitian at the community health center, will host a series of three focus groups with the Somali community, DD clients, and other significant community organizations. Questions will include if a community garden is the best approach, an ideal location for a community garden, fruits and vegetables the Somali community would be interested in, and ideas on sustainability of a garden, among others.

They will also be securing a location for the garden. There are a number of blighted lots located within the resettlement community, and Dr. Simpson and Ms. Jefferson will be working with city planning officials to secure one of these lots for the garden. Dr. Simpson will be responsible for applying for a farmers market license for the community and recruiting vendors to participate once the license is obtained. Ms. Jefferson will also work with Dr. Reid, Dr. Cooper, and Ms. Jefferson in the planning of the garden, ensuring that a variety of produce is grown that will most benefit the nutritional needs of the community.

Once the garden is underway, Dr. Simpson, Dr. Cooper, and Ms. Jefferson will encourage their patients to begin shopping at the farmers market for the fresh foods by handing out “prescriptions” for fruits and vegetables and providing coupons to clients for vendors at the farmers market. Ms. Jefferson will hold cooking classes with refugee families to teach them how to prepare the food and incorporate it into their traditional diets. She will also engage early adopters of the community garden from the Somali community to assist her in developing recipes using the new ingredients to share at the classes. Mr. Samuel Lopez, director of local refugee services, will coordinate cooking and nutritional classes with Ms. Jefferson at the refugee agency, ensuring that even more Somali residents are able to learn about and receive fresh foods. Mr. Lopez will also advertise the food

---

[10] Benbenek, M., Garwick, A. (2012 Jul). Enablers and barriers to dietary practices contributing to bone health among adolescent Somali girls living in Minnesota. Pediatric Nursing, 17(3): 205-214. Retrieved from http://ma6ek2jh6s.scholar.serialssolutions.com/?sid=google&auinit=MM&aulast=Benbenek&atitle=Enablers+and+barriers+to+dietary+practices+contributing+to+bone+health+among+early+adolescent+Somali+girls+living+in+Minnesota&id=doi:10.1111/j.1744-6155.2012.00334.x&title=Journal+for+specialists+in+pediatric+nursing&volume=17&issue=3&date=2012&spage=205&issn=1539-0136

pantry throughout the refugee agency. Dr Stanley Cooper will provide oversee oral health screening training for healthcare providers and offer consultations to include oral questions in the health screenings and inform the selection of garden and cooking ingredients are conducive to strengthening healthy teeth and gums.

As the garden is planted and harvested, Dr. Reid will be responsible for supervision of the staffing and overall gardening project within the DD agency. Dr. Reid's team will also be responsible for staffing a vendor booth and selling the produce at the farmers market on a weekly basis. The income generated at the farmers market will pay for the costs (labor and production) of the garden, making this project a self-sustaining model once it is up and running.

Information on this project will be shared throughout the greater Minneapolis region through the community health center network. Since the community health centers predominately serve clients living below the poverty level, this project might be of interest to them and could help solve food desert issues throughout the Minneapolis metropolitan area.

Anticipated Outcome

The first goal of the project is to eliminate the food desert in this Somali community in Minneapolis. The following are a list of objectives for Goal 1:

1. By the end of the first year, a farmers market with at least 4 vendors will be operational in this community.
2. By the end of the project, 75% of Somali refugees in our community will have increased access to fresh foods.
3. By the end of the project, 50% of Somali refugees in our community will report having an improved diet, including more fruits and vegetables.
4. By the end of the first year of the project, 90% of Somali refugees enrolled in cooking and nutrition classes will have increased knowledge of how to cook fresh foods and incorporate that into their diets.

The second goal of this project is to increase employment opportunities for people who experience a significant developmental disability. The objectives for Goal 2 include:

1. By the end of the first project year, a gardening program will be in place at the DD agency.
2. By the end of the second year, 20 clients will have jobs as a result of the project.
3. By the end of the project period, at least 40 clients will have worked at garden.
4. By the end of each project year, clients working at the garden will demonstrate improved occupational skills.

Evaluation

All members of the Clinical Scholars team will be responsible for various aspects of the evaluation. Prior to the project beginning, Dr. Simpson and Ms. Jefferson will be responsible for doing pre-screening of their clinic patients to find out how many have access to healthy/fresh food, the patient's knowledge of fresh foods and where to obtain them, and their level of comfort with preparing fresh foods. This will provide baseline evaluation information.

All information tracked on a quarterly basis will be used for continuous quality improvement efforts. Dr. Simpson will coordinate a quarterly meeting with the Clinical Scholar team to examine evaluation data and

make midcourse adjustments as necessary. This will provide a time for the team to come together to talk about strategy, changes that need to be made, and troubleshoot. Dr. Simpson will be responsible for compiling the data from all the Clinical Scholar team to ensure the overall project outcome is being met and determine how well the project is serving the community.

Ms. Jefferson will do pre and post-tests at her cooking classes to see knowledge gained during the classes and the comfort level of the participants in preparing fresh foods. This information will be examined on a quarterly basis. On an annual basis, Dr. Simpson will screen her patients to see if there is a change in their access to health foods, their levels of knowledge, and their comfort with preparing fresh foods. Dr. Simpson will obtain the number of coupons used at the farmers market to see the numbers of clients shopping at the farmers market. This will be tracked quarterly.

Dr. Reid will track numbers related to employment of people receiving services at the DD agency. He will obtain baseline measurements prior to the project starting and then will track this on a quarterly basis. Dr. Reid will also work with program staff to track improvements in the occupational skills of people employed at the garden and farmers market.

Mr. Lopez will screen refugee clients to obtain baseline data on how many are shopping at the farmers market and their level of knowledge around obtaining and preparing fresh foods. This screening will be done bi-annually. Mr. Lopez will also be tracking attendance at refugee cooking classes to see numbers of people receiving those services.

Team Areas of Expertise and Partnerships

Team Member	Agency	Role
Alvin Reid, MS OT	Area Developmental Disability Agency	Coordinate development and staffing of the garden and farmer's market.
Marge Simpson, MD	Community Health Center	Will lead data collection and make referrals.
Regina Jefferson, RD	Community Health Center	Will conduct nutrition and cooking classes, will help with planning of the garden, and will collect data for the evaluation.
Samuel Lopez, MSW	Refugee Services Agency	Director of the refugee services agency. Will coordinate and advertise nutrition and cooking classes for refugees, will collect data for the evaluation.
Stanley Cooper, DDS	County Dental Clinic	Will incorporate oral health screening training for healthcare providers, and will provide guidance on garden items to optimize healthy teeth and gums.
Sahara Apple	Cooperative Extension	Agricultural specialist will provide consultation to sustain the garden.

Sample Budget Narrative (Note: Budget Narrative is submitted separately from project narrative)
Project Title: Outgrowing Our Problem: Tackling Food Deserts in a Refugee Community
Application ID: XXXXX
Applicant Organization Name: Community Health Center

Personnel				
Team members	Base	FTE	FTE Amount	Total
Alvin Reid	103,800	10% (+5% in kind)	$10,380	$13,598
Marge Simpson	130,060	10% (+5% in kind)	$20,000	$26,200
Regina Jefferson	57,606	10% (+5% in kind)	$11,197	$14,668
Samuel Lopez	67,000	10% (+5% in kind)	$13,000	$17,030
Stanley Cooper	111,500	10% (+5% in kind)	$19,250	$25,218
Program Manager	41,400	30%	$35,000	$45,850
Refugee Family Advocate	35,690	30%	$35,690	$14,026
Fringe			$37,055	$156,590

Alvin Reid, MS OT, 15% FTE: Director of the Agency. Will develop the work plan for clients within the agency, including developing staffing plans, securing transportation for clients, selecting clients that will be working. Will also be responsible for developing therapeutic plans for the garden.

Marge Simpson, MD, 15% FTE: Community health center doctor specializing in refugee health. Will be responsible for core data collection of clients at the community health center, referring clients to dietary classes and the food pantry

Regina Jefferson, RD, 15% FTE: Community health center dietician. Will be responsible for conducting nutrition and cooking classes at the community health center and refugee services agency, will help with planning of the garden, and will collect data for the evaluation

Samuel Lopez, MSW, 15% FTE: Director of the refugee services agency. Will be responsible for coordinating and advertising nutrition and cooking classes for refugees, will collect data for the evaluation

Stanley Cooper, DDS, 15% FTE: Director of the Dental Clinic. Will be responsible for incorporating oral health screening training for healthcare providers and will provide guidance on garden items to optimize healthy teeth and gums. Make referrals to the cooking class and garden.

Program Manager TBN, 30% FTE: Will coordinate meetings and education sessions and assist with collaboration across agencies. She/He will develop a system to track number of hours volunteered in the garden, participants in the program, and interviews. She will monitor and provide continuous feedback to the team about implementation, benchmarks, issues, and process measures.

Advocate, TBN, 30% FTE: Will be based at the Refugee Services Agency and serve as liaison to engage families to share their experiences navigating care and resources and the development and implementation of the project. The advocate will conduct home visits, support families in accessing resources and bring the Somali perspective in the program

Other Direct Costs	
Office Operations	See indirect costs
Polls and Surveys	Surveys and interviews of Somali families and DD clients. Funds will be used to transcribe interviews ($3/min x 45 min/interview x 15 interviews) ($2025/year)
Communications/ Marketing	Community Engagement Campaign (newsletter, press kits, online media, outreach, meetings, publicizing program) $2000 Translation services: $1160. ($3160/year)
Travel	Five team members to attend 2-day training or conference ($5000/year)
Meeting Expenses	Five team members to attend 2-day training or conference $2000 Funds will be used to hold quarterly engagement and education groups. Funds will cover meals and education materials $4000/year
Equipment	Funding to purchase the Freight container will be provided through the cooperative extension. Funds will be used to purchase seeds/plants, soil, and tools. ($4225)
Project Space	Space will be provided in-kind by the Developmental Disability and Community Health Agencies for the garden and meetings.
Consultants/Contractors	
Consultants	
Contracts *	
Indirect Costs	
Indirect Costs	The Community Health Center will waive directs and accept the Foundation's Admin Fee. $5000 for a team of 5.
In-kind Support	
	Agencies are waiving indirect costs to support the program. Space for the garden and meetings are provided in-kind
Budget Allocation by Project Elements**	Note the project element below and its percentage of the total project budget.

Total Annual Budget: $175,000

Personnel: $156,590

Other Direct Costs: $18,410

Contract Budget and Fact Chart

Contractor Name	Area Developmental Disability Agency
Scope of Work	Team member – Alvin Reid
Deliverables	Team member – Alvin Reid
Total Cost	$45,338
Cost Calculation	Team member – Alvin Reid

Contract Budget and Fact Chart

Contractor Name	Refugee Services Agency
Scope of Work	Team member – Samuel Lopez Family advocate will serve as a subject matter expertise and inform the development of the community garden and provide cultural context to guide the implementation of the project.
Deliverables	Team member – Samuel Lopez Family advocate will participate and provide updates at the meetings, assist in interview recruitment, interpretation of findings, and promotion of the garden
Total Cost	Samuel Lopez salary $52,638 Family advocate salary $14,026 Total $28,694
Cost Calculation	Team member – Samuel Lopez and family advocate

Contract Budget and Fact Chart

Contractor Name	County Dental Clinic
Scope of Work	Team member – Stanley Cooper
Deliverables	Team member – Stanley Cooper
Total Cost	$77,945

Cost Calculation	Team member – Stanley Cooper