

Healthy Food as Medicine? A Closer Look at
Fruit and Vegetable Prescription (FVRx)
Programs Across the Country

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Introduction

What is an FVRx Program?

Wholesome Wave¹ created Fruit and Vegetable Prescription Programs (FVRx) in 2010 to help patients at risk of diet-related illness that can't afford or access fresh/healthy food.² With FVRx, participating clinics issue prescribe vouchers to food-insecure patients, which they will then redeem at local food retailers such as grocery stores and farmers markets. Under the Wholesome Wave model, vouchers are typically \$1 per person in a household per day.³ In addition to the vouchers, FVRx programs typically include nutrition education which is provided by a dietitian, the healthcare provider, or the organization running the program. Clinics will also draw up a schedule for patient clinical check-ups (usually once a month) in order to renew their prescriptions and check their medical progress. In 2010, several FVRx programs were launched in the country; since then, FVRx programs have expanded and there are programs in over ten states (not all are run by Wholesome Wave).⁴

Before delving in the specifics for each program model, it is important to discuss the generalized Wholesome Wave FVRx model. WW focuses on three main components: a clinical component (training clinicians administering the program), a redemption site component (preparing farmers markets/grocery stores to accept prescriptions), and a nutritional education component (if needed). The WW model focuses on changing diet/lifestyle behavior as a family project. Each program will enroll a certain number of patients (taking into account family size) and will calculate prescription value given as a dollar a day per family member. The program

¹ A summary of Wholesome Wave can be found in the "Appendix" section.

² How We Work | Produce Prescriptions. (2017, August 16). Retrieved from <https://www.wholesomewave.org/how-we-work/produce-prescriptions>

³ McBride, F. (2018, April 3). Personal Interview.

⁴ Rural Project Summary: Fruit and Vegetable Prescription Program (FVRx) - Rural Health Information Hub. (n.d.). Retrieved from <https://www.ruralhealthinfo.org/project-examples/897>

model will then recommend mandating monthly visits to the clinic, where the doctor/health care professional can take their biometrics (BMI, etc.), offer nutritional advice, and renew a patient's prescriptions. The patients will then take these prescriptions (usually in the form of vouchers) to the redemption sites, where they will shop for fresh fruits and vegetables. The program lasts typically 6 months to a year each year. There is no "hard cap" for an individual's participation - though there is an end each year; patients can re-enroll when the program renews again the following year. Though this model is relatively straightforward, WW has worked with organizations in the past to adapt it to fit their respective communities. For example, Navajo Nation reduced the number of mandatory clinic visits for patients due to transportation being a huge issue for their community. Since WW launched this model in 2010, many organizations have adapted the ideas/concepts to their own unique programs to run them more efficiently.⁵

Research Design and Methods

With this project, I aimed to learn more about FVRx programs throughout the country in order to create an informational report regarding their operations. The objective was to provide information that would inform any organization looking into potentially launching a FVRx program in their community (i.e. New Brunswick Community Farmers Market in New Brunswick, NJ) to shape their own program plan. I wanted to know about each program's origin story, how the program operated, the costs and what data they collect, and the challenges involved with operating FVRx.

To answer these questions, I aimed to collect the majority of the data from organizations running FVRx programs, as well as Wholesome Wave and its state chapters. The first step was obtaining the sample. I extensively searched via the Internet where? for a potential cohort of 15 to

⁵ McBride, F. (2018, April 3). Personal Interview.

20 organizations. Once I made a list of organizations, I sent out calls/emails to schedule interviews. Prior to interviews, I conducted comprehensive research each organization regarding their respective FVRx programs. I collected information about the programs from organization web pages, news articles, and other media. After the information was gathered, I interviewed each participant for roughly 45 minutes to learn about their program. The interview was an open-ended questionnaire, focusing on different facets such as the origins of the program, length/terms of the program, data collected by the organization, obstacles faced, and general advice from the participant. I transcribed the interviews and I sent a copy of the interview script to interviewees for accuracy checks and additional informational edits. The field notes from these interviews were then subsequently analyzed and consolidated within this report.

Description of Sample

The research effort involved contacting multiple organizations that have ran/currently run FVRx programs as well as Wholesome Wave. The sample included seven total participants: five organizations that coordinate FVRx programs, Wholesome Wave, and Wholesome Wave Georgia (a state chapter of the national organization). A majority of the participants were located near metropolitan areas and were serving populations dealing with food insecurity or diet related illness. The participants interviewed were either located near the East or West Coast; unfortunately, no interviews were able to be scheduled with any FVRx programs located in the Midwest or other regions. Future studies should look to obtain interviews with programs in a variety of different regions, in order to account for the unique contexts of different communities throughout the US.

<u>Name of Organization</u>	<u>Location</u>
Alchemist CDC	Sacramento, California
Augusta Locally Grown	Augusta, Georgia

Chester County Food Bank	Exton, Pennsylvania
Gorge Grown Food Network	Columbia River Gorge Region - OR/WA
Urban Harvest	Houston, Texas
Wholesome Wave	Bridgeport, Connecticut
Wholesome Wave Georgia	Atlanta, Georgia

Literature Review

A concise literature review was conducted on research regarding the efficacy of FVRx programs throughout the country. In the first study, a Food Rx program was implemented within the Southern side of Chicago and was developed as a collaborative effort between a university research team, Walgreens, a farmer’s market, and six different health centers within the area.⁶ They specifically focused on negative health outcomes associated with diabetes as the motivating factor for implementing the Food Rx program within the area. As of the time of the study, the researchers noted that they were the first to develop a prescription plan that incorporated community food resources as a part of their diabetes treatment plan. They had a four-pronged approach to their program: highlighting the doctor’s orders as part of a legitimate treatment plan, providing a coupon for healthy foods (specifically redeemable at the local farmer’s market and Walgreens), spreading the word about local resources (including diabetes classes, cooking demonstrations, etc.), and overall providing education on healthy eating and diet choices to the enrollees.⁷ The coupon values were \$5 off a \$20 purchase at Walgreens, and a \$10 flat value for the local farmer’s market.

⁶ Goddu, A. P., Roberson, T. S., Raffel, K. E., Chin, M. H., & Peek, M. E. (2015). Food Rx: a community–university partnership to prescribe healthy eating on the South Side of Chicago. *Journal of prevention & intervention in the community*, 43(2), 148-162.

⁷ Goddu, A. P., Roberson, T. S., Raffel, K. E., Chin, M. H., & Peek, M. E. (2015). Food Rx: a community–university partnership to prescribe healthy eating on the South Side of Chicago.

Regarding the lessons learned, one of the main challenges the researchers faced was actual implementation of the programs itself. Many clinicians and physicians forgot to actually recommend the Rx programs to patients, which the researchers tried to remedy via check-ins and placing Rx shelves more prominently at the health clinics. A unique problem was that dietitians were unable to prescribe Food Rx without a physician's signature due to the researchers tracking use of Rx by provider license number – expanding the amount of staff able to distribute the Food Rx prescriptions would definitely work to remedy this issue.⁸ Regarding data, anecdotal evidence and self-reported health outcomes made up a bulk of the analysis done by the researchers. Many participants and healthcare providers marked positive impressions of the service and said it really fixed barriers to healthier eating.⁹ Suggestions on tweaking the program include promoting participating sites that are near the location of the health clinics, and integrating Food Rx in the electronic medical record (EMR) systems to overcome any potential barriers caused by health care provider usage.¹⁰

In another study conducted by the Institute for Sustainable Health and Optimal Aging, the researchers identified interesting barriers to tracking participation within the Veggie Rx programs in their study. Disconnected phone lines were a major barrier to patient retention: many enrollees were of low-income backgrounds and prioritized paying basic bills over maintaining landline bills or cellphone bills.¹¹ The program also served participants with severe medical problems, and these issues actually prevented the participants from physically making the fresh stop sites as a result.

⁸ Goddu, A. P., Roberson, T. S., Raffel, K. E., Chin, M. H., & Peek, M. E. (2015). Food Rx: a community–university partnership to prescribe healthy eating on the South Side of Chicago.

⁹ Goddu, A. P., Roberson, T. S., Raffel, K. E., Chin, M. H., & Peek, M. E. (2015). Food Rx: a community–university partnership to prescribe healthy eating on the South Side of Chicago.

¹⁰ Goddu, A. P., Roberson, T. S., Raffel, K. E., Chin, M. H., & Peek, M. E. (2015). Food Rx: a community–university partnership to prescribe healthy eating on the South Side of Chicago.

¹¹ Faul, A. C., Dr., D'Ambrosio, J., & Cotton, S. (n.d.). Veggie Rx Data Report - May 31st, 2016. Retrieved from <http://www.safsf.org/wp-content/uploads/2016/08/Veggie-Rx-Report-May3120162.pdf>

Self-reported health outcomes made up a bulk of the data as well, but the researchers used multilevel modeling in order to model the data better. They found that the probability of a patient reporting their health as excellent from very good went up from 1% to 40% compared to the control group.¹² In the four qualitative interviews conducted, the main themes that emerged were: improved quality of life in participants, increased exposure to fresh fruits and vegetables, and the newfound importance of the Veggie Rx program in the participants' lives.

In a study conducted at a low-income neighborhood in upstate NY, the researchers worked to fill the void in current literature regarding measurable statistics/benefits of Veggie Rx/similar prescription programs of fresh fruits and vegetables. They utilized Veggie Rx prescription "booklets" with thirteen coupons, each having \$7 in value and redeemable at Capital Roots' Veggie Mobile farmer's market. Continued participation in the program required a routine quarterly appointment with a nutritionist/primary-care provider.¹³ They decided to focus specifically on obese, hypertensive, and/or diabetic patients and measure BMI at the first and last coupon redemption in order to gather more quantitative data on the impact of the program. From the results, they were able to statistically prove that the BMI of the test cases significantly differed from the BMI of the control group, with a $.74\text{kg/m}^2$ mean decrease in BMI for the test cases while the control group had a mean increase of $.35\text{ kg/m}^2$.¹⁴ This finding is important, as it represents one of the few studies that examine numerical factors (such as BMI) regarding impact of a Veggie Rx program within a low food access community. Regarding limitations to the study, the sample size was relatively small at 54 people, which limits the accuracy of the BMI estimates.

¹² Faul, A. C., Dr., D'Ambrosio, J., & Cotton, S. (n.d.). Veggie Rx Data Report - May 31st, 2016.

¹³ Cavanagh, M., Jurkowski, J., Bozlak, C., Hastings, J., & Klein, A. (2017). Veggie Rx: an outcome evaluation of a healthy food incentive programme. *Public health nutrition*, 20(14), 2636-2641.

¹⁴ Cavanagh, M., Jurkowski, J., Bozlak, C., Hastings, J., & Klein, A. (2017). Veggie Rx: an outcome evaluation of a healthy food incentive programme. *Public health nutrition*, 20(14), 2636-2641.

Furthermore, participation in this study was volunteer based rather than randomized; thus, participants might have been more motivated to alter their behavior compared to those who did not participate.

Though research on specific impacts of vegetable prescription programs is relatively new, the current literature has a lot of information to convey. Across the board, whether the study utilized self-reported health outcomes or statistical analysis, these FVRx programs seemed to have a positive impact on health outcomes and food access within their specified communities. However, maintaining retention of participants proved to be a huge issue for most research groups; thus, future studies will need to consider means of maintaining participation over an extended period of time for more well-rounded analysis. Also, information on specific costs of Rx programs seemed to be rather minimal; thus, further questioning via qualitative interviews will prove to be critical towards gathering a clearer picture of the potential impact of these programs.

Case Studies

Case 1 - Alchemist CDC

Alchemist Community Development Corporation, or Alchemist CDC for short, is a nonprofit organization focused on vibrant, equitable, and diverse communities for residents within the Sacramento area.¹⁵ These three principles have been the central focus of the company's vision and has led to the development of influential programs such as the Fruit and Vegetable Prescription (FVRx) program. The Alchemist CDC FVRx program began at a meeting of the California Market Match Consortium, a group of 25 to 30 organizations offering Market Match incentives (or matching consumers' food stamp dollars) at their farmer's markets. One organization of the Consortium, Pacific Coast Farmers Market Association in the Bay Area, had a FVRx program due

¹⁵ Alchemist CDC - About Us. (n.d.). Retrieved from <http://alchemistcdc.org/about-us/>

to being one of Wholesome Wave's initial partners. This piqued Alchemist CDC's interest, and set them on the path of developing their own program.¹⁶

Their first program was an 8-month partnership with the UC Davis Medical Center in 2015. Their Community/Family Medicine Department had just received grant funding to distribute gift certificates/vouchers for produce at farmers markets sites, and they wanted to partner with Alchemist CDC in order to expand the number of available sites. These vouchers were distributed during patient visits at the clinic alongside nutritional education pamphlets and were each valued at \$10. Patients would take the vouchers to a SNAP booth or market manager booth at a farmer's market, where they would receive 10 \$1 vouchers for that specific site. Each of the \$10 vouchers had a number associated with it, allowing the program coordinators to figure out who redeemed the coupons and follow up with them directly to obtain more. Alchemist CDC's role was minimal in this initial program - they handled the exchange of vouchers at their farmers market, and reimbursed vendors for the coupons redeemed by the consumers. Vouchers were distributed until the funding ran out, and no clear data was collected regarding the health effects of this program. A roughly estimated 75 to 100 people were served from this initial program.¹⁷

After this initial program, Alchemist CDC partnered with the Sacramento Native American Health Clinic (SNAHC) in order to reboot the program. Their current FVRx program operates very differently than the first one, as FVRx is one facet of a broader wellness program SNAHC currently operates. An employee from SNAHC will bring participants in these wellness programs to the Alchemist CDC Farmers Market, where a market guide will give the patients a tour of the site. They then will distribute 10 \$1 vouchers to each patient and encourage them to subsequently purchase fresh fruits and vegetables from the vendors. There are no repeat patients - SNAHC

¹⁶ Douglas, D. (2018, April 10). Personal Interview.

¹⁷ Douglas, D. (2018, April 10). Personal Interview.

brings a new crop of participants each time, and only when internal funding allows due to lack of external grants. There is also no tracking of vouchers and no follow up with patients, which prevents further analysis on the effects of the program on chronic illness. However, this one-time voucher exchange can allow for Alchemist CDC to educate and cater to more individuals in the local community due to not requiring constant follow up over a certain number of months like most FVRx programs.¹⁸

Case 2 - Augusta Locally Grown

Augusta Locally Grown (ALG) is a nonprofit organization that focuses on making small farms/growers' produce more accessible to residents in Augusta, Georgia.¹⁹ Their FVRx program began back in 2015, when their diet-related illness initiative "G.R.O.W. Harrisburg" caught the attention of Wholesome Wave Georgia (WWG).²⁰ The executive director of WWG, Sarah Bernie, decided to pilot Wholesome Wave's first program in the Southeast in Augusta once sitting down with the director of Augusta Locally Grown, Kim Hines. Augusta was ranked by the CDC as the fifth fattest city in the country at the time, and Hines saw huge benefits to bringing this program to her local community. However, in order to become the first pilot program for Wholesome Wave in the region, August Locally Grown needed to establish a few critical partnerships in order to demonstrate a vested interest in making this program a success.²¹ They recruited partners such as Icebox Urban Farm for cooking classes, Medical College of Georgia for student volunteers, St. Luke United Methodist Church for outreach and transportation, and Harrisburg Family Healthcare for their main partner clinic and volunteer medical professionals.²²

¹⁸ Douglas, D. (2018, April 10). Personal Interview.

¹⁹ 2008-2017 Augusta Locally Grown, LLC. (2017). Retrieved from <https://augusta.locallygrown.net/welcome>

²⁰ FVRx – Fruit & Vegetable Prescription Program. (n.d.). Retrieved from <https://augustalocallygrown.org/fvrx-fruit-vegetable-prescription-program/>

²¹ Hines, K. (2018, April 16). Personal Interview.

²² FVRx – Fruit & Vegetable Prescription Program. (n.d.). Retrieved from <https://augustalocallygrown.org/fvrx-fruit-vegetable-prescription-program/>

In order to enroll in the program, patients need to suffer from a diet-related illness such as diabetes, hypertension, or obesity. Participants must attend at least two cooking classes hosted by August Locally Grown in order to enroll in the FVRx program. By frontloading the incentive, Hines has found that they enroll more committed patients and that these patients get to know the coordinators before even participating in the program. Patients will then attend the clinic on a monthly basis in order to renew their prescriptions. The dollar amount of these prescriptions vary based on family size, with \$7 per person per day and a minimum of \$14 per week. These prescriptions will then be redeemed at the farmer's market ALG operates, where the market operator will exchange the prescriptions for tokens to redeem at the various vendors on site. This year, ALG received \$21,000 in grant funds from Wholesome Wave Georgia. Costs are complex - they need to pay a stipend of \$50 per week to a community coordinator who does outreach/paperwork for them, pay for the produce itself (~\$19,000 goes directly to farmers), pay instructors for their cooking courses, and a variety of other factors. However, their FVRx program is largely volunteer-driven. Their partner clinic offers space one night a week for two hours for six months each year as a donation, and all of their clinicians are volunteer based. Because of this, costs have been manageable for the program and ALG has been able to serve more individuals within the local community.²³

Case 3 - Chester County Food Bank

Chester County Food Bank (CCFB) is one of the largest hunger relief organizations within Chester County, PA, working alongside 120 partner agencies to serve more than 2.7 million pounds of food to food-insecure individuals within the county.²⁴ In 2017, they launched their pilot

²³ Hines, K. (2018, April 16). Personal Interview.

²⁴ About Us - Chester County Food Bank. (n.d.). Retrieved from <https://chestercountyfoodbank.org/about-the-food-bank/about-us/>

FVRx program titled “Fresh2You Fruit & Vegetable Prescription (FVRx) program”. As a food bank, CCFB realizes that some people cannot attend food pantries for a variety of reasons: not qualifying for that sort of assistance, not being able to afford fresh fruits/vegetables, etc. Partially funded through a grant from the Chester County Health Department, this program was established in partnership with The Clinic in Phoenixville to address any food security needs within the area that CCFB was not currently meeting.²⁵ CCFB is part of Wholesome Wave’s listserv but operates independently from the organization - they follow their own unique model and WW does not do anything directly for the program.²⁶

There is no formal food security screening survey prior to enrollment in the program - clinics typically enroll patients at their own discretion. During their pilot year in 2017, CCFB informed their partner clinic that they could enroll 100 patients maximum within the program - however, only 70 were enrolled and only 35 came to the market regularly. To fix this, CCFB expanded to two different clinic sites this year (one being a veteran’s hospital) for a total of three distinct sites. Once enrolled, patients will complete a survey asking about factors such as BMI, food security, etc. The clinic will then issue a prescription for fresh fruits and vegetables, and the value will increase by \$7 per person per week (i.e. a household of 2 will receive \$14 worth of prescriptions per week). The value will max out at \$28 per week. Patients will then exchange their prescriptions at the market site for Veggie Bucks and can shop for fresh fruits and vegetables at any of the local vendors. Veggie Bucks come in different colors - to signify prescription dollars, white Veggie Bucks are issued to the consumers. At the end of the season in November, patients

²⁵ A Healthy Dose: Introducing the Fresh2You Fruit & Vegetable Prescription (FVRx) Program. (2017, September 06). Retrieved from <https://chestercountyfoodbank.org/healthy-dose-introducing-fresh2you-fruit-vegetable-prescription-fvr-x-program/>

²⁶ Cosentino, R. (2018, April 19). Personal Interview.

will do a follow-up appointment with their healthcare provider and fill out another survey regarding biometric data/food security questions. The program typically runs 5 months per year.²⁷

Case 4 - Gorge Grown Food Network

The Gorge Grown Food Network (GGFN) is a group of individuals/organizations that work to support local agriculture, while making healthy and fresh food available to residents in 5 counties in the Columbia River Gorge in Oregon and Washington.²⁸ Their FVRx program can be traced back to a Community Health Assessment conducted back in 2014. This assessment, titled the Columbia Gorge Health Council's Community Food Survey, found that 1 in 3 Gorge residents worry about running out of food while 1 in 5 residents regularly missed meals.²⁹ In response to these staggering statistics, Gorge Grown developed their FVRx program in order to connect the health care sector with food systems that GGFN was currently operating over. The GGFN FVRx program is one of the most extensive programs in the country, with over thirty redemption sites depending on the time of year and over ten distribution partners assisting in this program.³⁰

Participants are typically screened by participating health care providers/clinics for food insecurity before enrollment in the program. If qualified, patients will then receive a packet of vouchers worth \$30 (15 \$2 vouchers), with the cover of the vouchers listing potential redemption sites and the back of the cover listing the GGFN Coordinator's contact information. Patients can spend their vouchers throughout the month and refill as many times as necessary (usually once per month). There are expiration dates for the vouchers - vouchers are printed on a bimonthly basis,

²⁷ Cosentino, R. (2018, April 19). Personal Interview.

²⁸ About - Gorge Grown. (n.d.). Retrieved from <http://www.gorgegrown.com/about/>

²⁹ Veggie Rx Project. (n.d.). Retrieved from <http://www.gorgegrown.com/veggierx/>

³⁰ Pavlik, L. (2018, March 23). Personal Interview.

and these vouchers expire at the end of every other month (i.e. February 28th, then April 30th, June 30th, etc.).³¹

Case 5 - Urban Harvest

Urban Harvest is a non-profit organization in Houston focusing on three central programs: Community Gardens, Gardening and Youth Education, and Farmers Markets.³² Targeting children grappling with diet-related illness, Urban Harvest launched a FVRx Pilot Program alongside Memorial Hermann Clinic (branch of clinics in town) that ran from June 2017 to January 2018.³³ Urban Harvest partnered with Wholesome Wave to launch this program, since Houston was decided by Wholesome Wave to be the third city to run a pilot FVRx program. Urban Harvest handled the produce portion of the program, while Memorial Hermann Clinic handled the distribution of vouchers. Urban Harvest was also one of twenty participating Targets and farmers markets within the Houston area working with Wholesome Wave on this program. The direct focus for Urban Harvest was on school clinics, as the target cohort was children dealing with diet-related illnesses such as obesity and diabetes. The average patient was found to be an 11-year-old child with a BMI of over 85% (overweight).³⁴

In order to enroll in the program, patients were required to attend nutrition courses held by the participating clinics. Urban Harvest began attending these courses in order to inform patients about farmers markets and ramp up general engagement within the program. Once this requirement had been met, patients would receive prescriptions that they would then exchange at Urban Harvest Farmers Market for \$5 coupons. These coupons could then be redeemed at any of the 9

³¹ Pavlik, L. (2018, March 23). Personal Interview.

³² Urban Harvest. (2018). About - Urban Harvest. Retrieved from <http://urbanharvest.org/about-us>

³³ Urban Harvest. (2017). Urban Harvest now welcomes FVRx Prescriptions! Retrieved from <http://urbanharvest.org/fvr-x-produce-prescriptions>

³⁴ Foxman, E. (2018, April 23). Personal Interview.

participating vendors within the farmers market. Renewal of vouchers required attendance at nutrition courses within the clinic. The program ended in January 2018, and no current word was given regarding renewal of the program.³⁵

Case 6 - Wholesome Wave

Wholesome Wave was founded in 2007 by Chef Michel Nischan. Despite his long history as a chef in the food industry, Nischan saw the link between nutrition and health more clearly after his son was diagnosed with Type 1 Diabetes. Though he changed his family's diet to include more fresh fruits and vegetables, he realized that maintaining a healthy diet was not always possible for millions of Americans struggling with poverty each year.³⁶ Wholesome Wave was established as an organization whose primary goal is to make fresh fruits and vegetables affordable to consumers across the country. They do this through two main programs: Doubling SNAP (or doubling the value of SNAP benefits) and Produce Prescription.³⁷ The organization currently operates in 49 states and works with hundreds of organizations to impact over half a million individuals each year. In 2010, the Produce Prescription program was introduced in order to tackle affordability of fresh fruits/vegetables when dealing with diet related illnesses. Wholesome Wave has two offices in Bridgeport, CT and Berkeley, CA - they typically work with other organizations remotely from these offices and will send program staff will conduct visits periodically to different sites.³⁸

According to Senior Communications Associate Fiona McBride, Wholesome Wave is currently working with 10 active programs under the Wholesome Wave umbrella. Having an active program involves WW staff being highly involved on the ground (via direct personnel), using their distinct program branding, and a variety of other qualifiers. For an organization to

³⁵ Foxman, E. (2018, April 23). Personal Interview.

³⁶ McBride, F. (2018, April 3). Personal Interview.

³⁷ The Opportunity. (2017, April 19). Retrieved from <https://www.wholesomewave.org/opportunity>

³⁸ McBride, F. (2018, April 3). Personal Interview.

qualify as a Wholesome Wave branded program, they must use the official program name along with the suite of assets (ranging from prescription pads to recruitment pads). Branding can be adjusted depending on the organization, with some clinics/partners having their brand name represented within the distributed materials as well. WW typically encourages organizations to follow their tested model, but they allow for flexibility due to the unique context of different communities. There are also various tiers of support WW offers depending on the organization. For example, the FVRx programs run in conjunction with Targets in cities like Miami are completely WW run - Target provides the funding, while WW handles the day to day operations of the programs. However, there are programs out there that want access to range of assets but do not require daily coaching. For these programs, WW can check in a couple of times per month in order to provide assistance or coaching. The level of support WW provides an organization is highly dependent on the needs of the organization running the FVRx program.³⁹

Case 7 - Wholesome Wave Georgia

Wholesome Wave Georgia (WWG) is part of the Wholesome Wave national umbrella, serving as a state partner that adapts the WW model to the local context of the surrounding communities.⁴⁰ In WWG's case, their primary goal is to increase access to fresh, locally grown produce for all Georgians through two main programs: Georgia Fresh for Less (doubling SNAP benefits for consumers) and the Fruit and Vegetable Prescription Program.⁴¹ WWG operates autonomously from WW, and even has their own unique board of directors along with a program development team (Grant Writer, Development Director, Marketing/Communications Person, etc.). WWG's typical role with FVRx programs in the state is usually that of resource/capacity

³⁹ McBride, F. (2018, April 3). Personal Interview.

⁴⁰ Ward, R. (2018, April 26). Personal Interview.

⁴¹ About - Wholesome Wave Georgia. (n.d.). Retrieved from <https://www.wholesomewavegeorgia.org/about/>

development and technical assistance. WWG can provide funding for certain aspects of programs, provide an array of resources for an organization to use, and evaluate the data collected by that organization in order to determine the efficacy of the program. They currently work with four different sites in Georgia, with some sites managing more than one cohort.⁴²

Training for an FVRx program begins when a healthcare site approaches WWG with an initial program plan and a proposed budget. Once WWG approves these items, they will meet with the organization (sometimes as far back as a year prior to the program beginning) and will develop a planning committee with various stakeholders (farmers markets, organizations providing nutrition education, representatives from the community, clinic heads, etc.). WWG will also provide a toolkit that will walk the organization step-by-step through typical decisions that are made when running an FVRx program. After the program is set up, WWG will check in periodically (i.e. calls every other month) in order to monitor progress and offer advice on any unique obstacles an organization in the region might be facing. The model WWG promotes is the same as the national WW model. However, WWG stresses the importance of flexibility in the model - program coordinators can decide factors such as the nutrition curriculum for classes, days of operation, special promotions to increase retentions, and organizing transportation for residents to and from the market sites.⁴³

Findings

Origins

Because Wholesome Wave has spearheaded the FVRx movement throughout the country; they have been a central figure to the start of many programs. However, their involvement in the origins of each program varies depending on the organization. Urban Harvest, for example,

⁴² Ward, R. (2018, April 26). Personal Interview

⁴³ Ward, R. (2018, April 26). Personal Interview

requested to partner with Wholesome Wave since Houston was chosen as the third city to run a pilot FVRx program in.⁴⁴ However, Alchemist CDC first learned about the program from Pacific Coast Farmers Market, an organization that was one of Wholesome Wave's initial partners.⁴⁵ The level of involvement with Wholesome Wave also varies; though some organizations are involved partners and are even funded by Wholesome Wave, others are less attached. Chester County Food Bank (CCFB), for example, is part of Wholesome Wave's listserv and has access to their resources but does not regularly contact the organization and no involved relationship exists between the two parties.⁴⁶ Wholesome Wave currently has 10 "active" programs they work with across the country, meaning they send personnel directly to the sites to help the program operate, control program branding, and a slew of other factors. Running a Wholesome Wave-branded program requires utilizing the program's official name along with the suite of assets offered by the organization including prescription pads, recruitment flyers, and much more.⁴⁷

Since most of the participants operated farmers markets or food banks, the bulk of the partnerships formed for this program were with clinics, parties that could aid with nutritional education, and community representatives. The scope of the program was reliant on the organization's personal vision - CCFB initially worked with one clinic site during its pilot program, while Gorge Grown had over ten participating clinics/distribution sites in their program umbrella. The source of funding also varied from organization to organization. Augusta Locally Grown, for example, received a direct grant of \$21,000 this year from Wholesome Wave Georgia in order to fund its operations.⁴⁸ CCFB, on the other hand, received a \$50,000 grant from the

⁴⁴ Ward, R. (2018, April 26). Personal Interview.

⁴⁵ Douglas, D. (2018, April 10). Personal Interview.

⁴⁶ Cosentino, R. (2018, April 19). Personal Interview.

⁴⁷ McBride, F. (2018, April 3). Personal Interview.

⁴⁸ Hines, K. (2018, April 16). Personal Interview.

Chester County Health Department over the course of three years, indicating a partnership between the organization and local governmental bodies.⁴⁹ Gorge Grown has an even more diverse funding stream - the Oregon Community Foundation helped fund the FVRx program in 2015 for internal staffing, while vouchers were funded by various parties like local hospitals/clinics.⁵⁰ In any case, each of the interviewees directly relied on external funding sources in order to launch the program within their respective communities.

Terms of Program

In terms of screening for the program, each organization had the clinic identify potential candidates for the program. The clinics either employed a survey/questionnaire or identified candidates as patients struggling with diet-related illness (diabetes, obesity, etc.). Gorge Grown, for example, screened patients via two questions (In the last 12 months, did you and the people you live with worry that you would run out of food before you were able to get more? In the last 12 months did you and the people you live with run out of food before you were able to get more?).⁵¹ Augusta Locally Grown, on the other hand, enrolled patients grappling with a diet-related illness diagnosis. In fact, August Locally Grown mandated that patients interested in the program attend two nutrition classes hosted by the clinic prior to enrolling. By adding this extra requirement, ALG found that they would weed out the interested but not committed patients, and that these prospective enrollees would get to know the program coordinators more prior to enrolling (which helped increase trust).⁵²

Refilling prescriptions was a pretty standardized process for each organization. Many organizations followed the Wholesome Wave model of mandating monthly visits to the clinic in

⁴⁹ Cosentino, R. (2018, April 19). Personal Interview

⁵⁰ Pavlik, L. (2018, March 23). Personal Interview.

⁵¹ Pavlik, L. (2018, March 23). Personal Interview.

⁵² Hines, K. (2018, April 16). Personal Interview.

order to renew prescriptions, with some organizations taking biometric data (BMI, blood pressure, etc.) in order to track progress/impact of the program. Alchemist CDC operates uniquely due to their vouchers being distributed on a “one-time only” basis. Their partner, Sacramento Native American Health Center (SNAHC), brings a new cohort to the farmers market site whenever funding allows; Alchemists CDC will then provide a tour of the site to the new crop of patients, and then distribute 10, \$1 vouchers to each patient afterwards to allow them to shop for fresh fruits/vegetables at their leisure.⁵³ Gorge Grown’s program is unique in that patients can refill vouchers as many times as they need each month, instead of a typical “one refill per month” mandate that the other organizations employ.⁵⁴

The value of prescriptions varies wildly from program to program. Some organizations, such as Chester County Food Bank and Augusta Locally Grown, follow the Wholesome Wave Model and prescribe a certain amount (usually \$1) per person in the household per day. CCFB has a hard cap of \$28 per week per household, however. They previously ran a \$35 per week cap, but they found that most households were not using that full amount due to the low prices at the farmers market.⁵⁵ Other organizations have standardized amounts that they give in prescriptions per month. Gorge Grown distributes a \$30 voucher packet (15 coupons of \$2) to a patient, which they can refill as needed each month.⁵⁶ Prescription values vary depending on scope of program and availability of funds.

As mentioned previously, most redemption sites are located in farmers markets or other food stands that each organization currently presides over due to already having the infrastructure in place. Gorge Grown, however, does something unique; besides running the program within

⁵³ Douglas, D. (2018, April 10). Personal Interview.

⁵⁴ Pavlik, L. (2018, March 23). Personal Interview.

⁵⁵ Cosentino, R. (2018, April 19). Personal Interview.

⁵⁶ Pavlik, L. (2018, March 23). Personal Interview.

farmers market during the season, they actually work with grocery stores to serve as redemption sites during the off season.⁵⁷ In fact, Urban Harvest mentioned how there are a lot of misconceptions in their community (such as prices being too expensive) regarding farmers markets, which required them to attend nutrition classes in order to promote the benefits of farmers markets more.⁵⁸ When choosing redemption sites, Wholesome Wave Georgia mentioned that it is important to choose redemption sites that are accessible to residents. Some programs, for example, have farm stands right near the clinics in order to allow patients to renew and redeem their prescriptions at the same time.⁵⁹

In terms of length of program, a majority of them run about six months or whatever their respective market season definition is. Gorge Grown's program was unique in continuing to run the program during the off season, using grocery stores and supermarkets to serve as redemption sites during that time period.⁶⁰ Most of the programs interviewed are recurring each year - Urban Harvest's, however, was a pilot program that ran from June 2017 to January 2018.⁶¹ By operating the FVRx program each year, each organization has fine-tuned the program in order to solve any issues they have come across since the program's inception. Augusta Locally Grown, for example, changed the prescription amount for a household of 1 from \$1 a day to \$2 a day in order to further incentivize these patients to actually attend the market.⁶² CCFB altered their program by increasing the responsibilities of their partner sites, including more follow up with patients throughout the season (checking to see if they are attending market, renewing prescriptions, etc.)⁶³ By consistently

⁵⁷ Pavlik, L. (2018, March 23). Personal Interview.

⁵⁸ Foxman, E. (2018, April 23). Personal Interview.

⁵⁹ Ward, R. (2018, April 26). Personal Interview

⁶⁰ Pavlik, L. (2018, March 23). Personal Interview.

⁶¹ Foxman, E. (2018, April 23). Personal Interview.

⁶² Hines, K. (2018, April 16). Personal Interview.

⁶³ Cosentino, R. (2018, April 19). Personal Interview.

altering the program to tackle different obstacles, each organization has helped their program run more effectively each year.

Finally, advertising for the program seems to be handled directly by the clinics themselves. Almost each program mentioned that physicians were responsible for screening and advertising the program to the patients, and that word of mouth played a huge factor in getting participants to join. August Locally Grown, however, did mention going door to door in order to recruit community members for the program.⁶⁴ Because enrollment is generally handled by the clinic, enrollment numbers can fluctuate as a result. In fact, Urban Harvest mentioned their participant numbers increased once they started attending the nutrition classes hosted by the clinic and speaking with the patients directly.⁶⁵ Alchemist CDC mentioned that one of the biggest challenges with their first pilot program was physicians not explaining the program clearly to patients, and not providing an adequate nutrition education component.⁶⁶

Costs

According to Wholesome Wave Georgia, each participant in a FVRx program costs about \$1000 per year: this includes factors such as nutrition education, prescription value, time sites pour into the program, and a variety of other internal/external factors.⁶⁷ In fact, Alchemist CDC predicted that the costs of operating the FVRx program can often directly mirror the cost of incentives (i.e. if looking to push \$20,000 of incentives, would also need to account for \$20,000 for operations (excluding clinic staff)).⁶⁸ Augusta Locally Grown mentions that from their \$21,000 grant this year from Wholesome Wave Georgia, about \$2600 goes as a stipend to a community

⁶⁴ Hines, K. (2018, April 16). Personal Interview.

⁶⁵ Foxman, E. (2018, April 23). Personal Interview.

⁶⁶ Douglas, D. (2018, April 10). Personal Interview.

⁶⁷ Ward, R. (2018, April 26). Personal Interview

⁶⁸ Douglas, D. (2018, April 10). Personal Interview.

coordinator for outreach/paperwork while the rest of the funds goes towards food purchases (including local farmers). In fact, in order to offset some of the costs of running the program, ALG utilizes volunteers for their program clinicians and have applied for donations/grants in order to fund their cooking classes for patients.⁶⁹ CCFB stated that the dollar value of prescriptions redeemed between June and November last year was \$13,000. However, this is only the *value* of the food because they grow their own food as well as purchase in bulk, the actual cost of the food for them is much lower.⁷⁰ Gorge Grown revealed that over 30,000 vouchers were redeemed in 2017 alone. Besides the value of these vouchers, other costs GG had were staffing, printing of vouchers, meetings with clinics, staff training (screening, cultural sensitivity, etc.), and various other costs.⁷¹ From each of these programs, prescription value serves as only one piece of the costs - staffing and logistical costs (supplies for cooking classes, distribution of vouchers, etc.) seem to make up the bulk of costs.

Impact of Program

Wholesome Wave has seen great successes as a result of the FVRx program. To date, over 2,282 patients have been enrolled in the program, over 13,000 people have received benefits of FVRx prescriptions, and \$790,000 in fruit and vegetable sales have been generated. The health benefits are even more significant: 69% of participants interviewed have increased their fruit and vegetable consumption, 45% have decreased their BMI, and over 91% reported being happy with their “healthy weight and diabetes care” as a result of the program.⁷²

⁶⁹ Hines, K. (2018, April 16). Personal Interview.

⁷⁰ Cosentino, R. (2018, April 19). Personal Interview.

⁷¹ Pavlik, L. (2018, March 23). Personal Interview.

⁷² Rural Project Summary: Fruit and Vegetable Prescription Program (FVRx) - Rural Health Information Hub. (n.d.). Retrieved from <https://www.ruralhealthinfo.org/project-examples/897>

The FVRx program has had a significant impact on the health of the Augusta community. Augusta Locally Grown has been able to enroll 40 people and their families each year with the program; taking into account the ripple effect, the impact can be roughly quantified as 160 individuals benefiting from the program. According to Hines, they found that 44% of the individuals self-reported as food insecure at the beginning of the program; by the end, that number went down to around 3%. However, they are working on increasing the retention rate within the program. Due to their strict definition for retention (five clinic visits in six months - one waived month), they only have about a 60% completion rate of the program. Their goal is to raise that number to 90% under the ALG retention definition, in order to impact as many people within the community as possible.⁷³

For CCFB, the main goal of this program is to bolster food security within the Chester County area. Though there has been no significant data regarding major changes in health (BMI, Blood Pressure, etc.) as a result of this program, the Fresh2You Mobile Market Manager Roberta Cosentino has reported that 78% of participants said that they were eating more fruits and vegetables because of the program specifically. The retention rates have also been incredible - CCFB reports an 80-90% retention rate for their program, indicating that those who come the first week are usually consistent with coming in subsequent weeks. Their future goals include increasing enrollment of patients to reach max capacity (100 per site, so 300 total), and increasing the role of their partner clinics to include more follow up with patients along with other responsibilities.⁷⁴

Gorge Grown Food Network has seen a huge impact in the region as a result of this program. Though 2200 participants were directly served in 2017, GGFN estimates more than twice

⁷³ Hines, K. (2018, April 16). Personal Interview.

⁷⁴ Cosentino, R. (2018, April 19). Personal Interview.

that number of individuals benefited due to the ripple effect.⁷⁵ They also estimate more than \$53,000 was redeemed in prescription value at the participating market sites.⁷⁶ Finally, about 30,000 vouchers were redeemed in 2017, with retention rates hovering between 80% to 90% depending on the site. Despite the large amount of sites to oversee, GGFN has remained meticulous with data collection and follow up with each individual partner. They stress that attention to detail is crucial when obtaining external funding for their VeggieRx program, such as the grant received from the Robert Wood Johnson Foundation in 2016.⁷⁷

Challenges

Each organization faced their own unique challenges throughout their implementation of the FVRx program. For Wholesome Wave, the biggest challenges they outlined are funding and being aware of the unique needs of each community. For example, they mentioned that the availability of healthy food and farmers markets was abundant in places like LA, and that a comfort level exists at these sites that may not be the same in other communities.⁷⁸ According to Wholesome Wave Georgia, a unique challenge they found was the burden of research on participants- because many parties are interested in researching these type of programs, WWG needs to take care to streamline the process and not overload patients with too many surveys and other data collection items.⁷⁹ The main challenge for Alchemist CDC was with their partner during their first pilot program - the physicians at the clinic were not adequately communicating with the patients on how the program worked, and Alchemist CDC couldn't fix it within their assigned role of that program.⁸⁰ For Augusta Locally Grown, coordinating volunteers can be difficult - though

⁷⁵ Pavlik, L. (2018, March 23). Personal Interview

⁷⁶ Gorge Grown Veggie Rx - 2017 Snapshot. (n.d.). In Gorge Grown - Board of Agriculture Report 2017. Gorge Grown.

⁷⁷ Pavlik, L. (2018, March 23). Personal Interview

⁷⁸ McBride, F. (2018, April 3). Personal Interview

⁷⁹ Ward, R. (2018, April 26). Personal Interview

⁸⁰ Douglas, D. (2018, April 10). Personal Interview.

the benefits of “work that feel good” usually attracts volunteers, their work at hospitals/the clinic outranks that for the program.⁸¹ Gorge Grown mentioned how funding can be sporadic at times, and that redemption rates can dip as well (necessitating more frequent clinic follow up). They also mentioned their suppliers/redemption sites for the winter were more limited than they like, and these sites did not typically buy from local farmers (which runs counter to GG’s mission of local agriculture sustainability).⁸² Finally, Urban Harvest mentioned that prescription redemptions at their farmers market were very sporadic until they started actively attending the nutrition classes at the clinic.⁸³

Advice

Each organization had a wealth of advice for any prospective organization looking to operate a pilot FVRx program within their own community. According to Wholesome Wave, having a clear program plan before starting anything was important - FVRx programs require stakeholder buy-in and investment from participating hospitals, clinics, redemption sites (groceries/farmer’ market), and other parties in order to see significant impact. They also mentioned that being receptive to the community’s needs is crucial. By taking into account transportation issues, potential stigma against farmers markets, and other various factors during the planning process, a FVRx program can achieve more success and avoid hurdles along the way.⁸⁴ Wholesome Wave Georgia took their advice a step further: they recommended forming a planning committee with the various stakeholders that would be involved in the program, and discussing how the program would look like and the exact roles and responsibilities for each

⁸¹ Hines, K. (2018, April 16). Personal Interview.

⁸² Pavlik, L. (2018, March 23). Personal Interview.

⁸³ Foxman, E. (2018, April 23). Personal Interview.

⁸⁴ McBride, F. (2018, April 3). Personal Interview

party.⁸⁵ Alchemist CDC also echoed the importance of establishing partner roles, with clear communication channels and appropriate recourse when things aren't occurring as expected.⁸⁶

For Augusta Locally Grown, the role of the funder was critical - without Wholesome Wave Georgia, they wouldn't be able to run the program in the first place. By securing a stable funder, they can focus on fine-tuning the program and providing high quality community work.⁸⁷ CCFB said the primary focus should be on providing healthy, fresh food to the program participants. Though some organizations are primarily preoccupied with health outcomes (lowering blood pressure, BMI, etc.), CCFB feels that increased food security and a healthy diet will naturally lead to better health.⁸⁸ Gorge Grown recommends starting small with one or two partner clinics/redemption sites, in order to measure potential success of the program if expanded.⁸⁹ Finally, Urban Harvest highlighted the importance of catering to your customers - improving face-to-face interaction and increasing accessibility of sites (i.e. hiring Spanish speakers, etc.) will go a long way towards improving the success of the program.⁹⁰

⁸⁵ Ward, R. (2018, April 26). Personal Interview

⁸⁶ Douglas, D. (2018, April 10). Personal Interview.

⁸⁷ Hines, K. (2018, April 16). Personal Interview.

⁸⁸ Cosentino, R. (2018, April 19). Personal Interview.

⁸⁹ Pavlik, L. (2018, March 23). Personal Interview.

⁹⁰ Foxman, E. (2018, April 23). Personal Interview.

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