ACKNOWLEDGEMENTS

We would like to acknowledge all the Central Oregon residents, health care providers, and program implementers who contributed to and participated in our program. Thank you for your contributions.

PARTNERS

cultivaré LLC
Bend Farmers Market
Central Oregon farmers
St. Charles Health System
Mosaic Medical

FUNDERS

Central Oregon Health Council
PacificSource Foundation for Health Improvement
Pacific Power
EXECUTIVE SUMMARY

In 2010 and 2018, the High Desert Food & Farm Alliance (HDFFA) performed Community Food Assessments which identified access to fresh food as a major barrier for food insecure residents. This was further confirmed in their 2017 Nutrition Wellness Assessment which identified that cost was the major barrier to eating fresh food. The majority of healthcare providers interviewed stated that patients would benefit from better nutrition and nutrition education, but only 14% of patients had been referred to a nutrition program.

Food insecurity, defined as the inability to access sufficient and affordable nutritious food, and diet-modifiable disease are correlated: food insecure individuals in Central Oregon are twice as likely to be diagnosed with cardiovascular disease and/or type II diabetes. Across Central Oregon, 16% or 28,000 people are food insecure, with Deschutes County having the highest percentage of individuals who don’t qualify for federal assistance yet experience food insecurity. Attempts to address these issues through nutrition education alone, without economic incentives, have failed to achieve sustained and sufficient vegetable and fruit intake.

HDFFA proposed VeggieRx, a vegetable and fruit prescription program to two funders: Central Oregon Health Council and PacificSource Foundation for Health Improvement, with the goal of addressing food insecurity and increasing intake of fresh produce for the aforementioned target audience. The main outcomes that we aimed for, which were achieved included: 1) increased fresh produce intake; 2) healthy behavior change; 3) community linkages between and among health care providers, patients, HDFFA, and farmers in Central Oregon; and 4) investment in the local food economy.

HDFFA successfully piloted the first fresh food prescription program in Central Oregon from April 2017-February 2018. We connected with over 50 providers who referred more than 300 patients to the program. In eight months, HDFFA created a substantial community network that collectively connected healthcare, community services, and local food to address the needs of food insecure individuals with diet-related diseases(s). The pilot program had a goal of enrolling 66 people, yet a total of 94 participants enrolled with a graduation rate of 78%; the program impacted 87 people and their families, cumulatively 200 people.

Participants were allotted $20 in vegetable and fruit vouchers each week for 8 weeks at two Bend Farmers Market, and an average of $136 of fresh food was provided to each participant. Each week participants received on-site nutrition education by HDFFA’s Community Health Worker (CHW), a Registered Dietitian-Nutritionist (RDN).

Following the program, participants reported that the program was effective in helping them improve their health. Intake of fresh vegetable and fruit consumption increased by 1.3 cups per day; they continued to eat as many vegetables; and prioritized buying vegetables even after program completion.
Participants stated that they highly valued the benefit of fresh food, and collectively, used 97% of prescription vouchers. The program helped to reduce anxiety associated with food insecurity with 33% of participants being less worried about having enough food or money for food during the program. Ninety five percent (95%) valued the nutrition education component of the program with 33% increasing their knowledge of cooking and food safety, and 60% increasing their ability to stretch their meals using fresh food.

Furthermore, participants valued the social aspect of shopping at the farmers market.

*VeggieRx* had a positive impact on the local food economy. Farmers made an additional $11,883 in sales from vouchers; increased their sales by an average of 12%; and noticed an increase in customers. The impact on the local food economy, or the ripple effect of purchasing food directly from a local farmer, is $20,676 as determined by using an established Central Oregon multiplier of 1.74.

The majority of referrals (67%) were from health care providers effectively demonstrating HDFFA’s connection to the healthcare community. A total of 37 individual providers referred patients, and 24 of these providers had not been directly contacted by the HDFFA CHW. Most providers verbally referred patients and determined they were eligible because they were food insecure.

Challenges associated with *VeggieRx* can be addressed in future programming using the identified gaps and recommendations. The main gaps include: the need for a sustainable funding model; a flexible fresh food delivery model that addresses the needs and limitations of the target audience based on community needs; fewer men graduated from the program by percent than women; and eligibility may need to be expanded to serve the target audience.

Overall, this program was deemed successful: it met the goal of improving the health of patients while supporting a healthy and thriving food and farm network in Central Oregon. Participants, farmers and their families were positively affected and providers were enabled to refer their patients to a program that improved patients’ health and access to fresh food. Overall 97% of participants, health care providers, and farmers were satisfied and reported they want the program to continue. This program effectively connected healthcare professionals, community professionals, local farmers, and community members experiencing food insecurity.
Successfully piloted the first VeggieRx program in Central Oregon

- Provided an average of $136 of fresh food to 87 participants
- Connected with 50+ providers, who referred 300+ patients
- Created community linkages among health care, non-profit, participants and farmers to effectively address the needs of food insecure individuals

Effectively helped participants improve their health

- Increased vegetable and fruit intake by 1.3 cups/day
- Continued to eat as many vegetables and prioritized buying vegetables even after program
- Valued fresh food as one of the major benefits of the program
- Experienced the social aspect as a benefit of shopping at the farmers market

Meaningfully benefited food insecure individuals

- Healthcare providers identified food insecure patients and referred them to VeggieRx
- HDFFA provided fresh food to food insecure individuals who can’t typically afford it
- Participants redeemed 97% of vouchers distributed, and 33% were less worried about having enough food/money for food during the program

Enthusiastically learned from HDFFA’s nutrition education curriculum

- 95% valued the nutrition education curriculum
- 60% increased in their ability to stretch their meals using fresh food
- 33% increased in their knowledge of cooking & food safety

Positively impacted the local food economy

- Increased farm sales by $11,883 from farm direct purchases
- Improved farm sales by approximately 12% and noticed an increase in customers
- Invested $20,676 in the local food economy from farm direct purchases

WWW.HDFFA.ORG/VEGGIERX
## APPENDIX I: OBJECTIVES CHART

<table>
<thead>
<tr>
<th>Objective</th>
<th>Expected Results with Target Measures</th>
<th>Target Measures</th>
<th>Results Met</th>
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| 1: Implement VeggieRx pilot program for food insure (FI) people with diet-modifiable disease to ↑ fresh food consumption by participants | • Implement pilot April-Dec 2019  
• Program assessment complete by: Feb 2019 | • Program implemented from April-Dec 2018  
• Participant breakdown: FI (n= 84; 89%), OHP recipient (n= 72; 77%), T2DM (n = 62; 66%)  
CVD (n= 53; 53%)  
• Program assessment complete Feb 2019 | Yes |
| 2: Enroll 66 participants in VeggieRx pilot project | • Providers to refer 33-100+ patients  
• Enroll 66 participants for 8-week $20/week June-Oct 2018 | • 300+ estimated referrals from providers  
• 146 patients completed the eligibility survey  
• 94 eligible: 87 participated  
• Provided $20/week with a bonus at week 8 | Yes |
| 3: ↑ provider screening & awareness of FI | Increase food insecurity screening of patients by 75%, April-Aug 2018 | 88% of providers determined patient was eligible for VeggieRx because they were FI | Yes |
| 4: ↑ referrals to nutritional programs | 100% increase in provider referral to VeggieRx April-Aug 2018 | 67% of enrollees were referred by health care providers | Yes |
| 5: ↑ consumption of fresh food by participants | ↑ fruit & vegetable intake (FVI) by participants of 1-2 servings/day/participant during program June-Oct 2018 | • Vegetable consumption ↑ by 0.6 cups/day  
• Fruit ↑ by 0.7 cups/day  
• Total FVI ↑ of 1.33 cups of produce/day | Yes |
| 6: ↓ anxiety about availability of food by participants. | 50% ↓ in anxiety levels about food during program June-Oct 2018 | 33% of participants experienced ↓ in anxiety about running out of food, or money for food | No |
| 7: Participant retention/program completion | 90% voucher utilization & participant completion during program | • 97% of vouchers that were distributed were redeemed  
• 78% completed the program by attending ≥5 sessions | Yes |
| 8: ↑ understanding of the impact of nutrition on personal health | 80% of participants express feeling better & attributing that to ↑ FVI during program period June-Oct2018 | • 75% felt better following program  
• 100% found that VeggieRx was effective in helping them ↑ their health | Yes |

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7 Targets were assigned at the outset based on educated assumptions using a combination of: current baselines when known; Central Oregon-specific food and health needs assessments; or evaluations from similar past programs across Oregon and the United States.
<table>
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<tr>
<th></th>
<th>Description</th>
<th>Outcome</th>
<th>Result</th>
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| 9: | ↑ understanding/utilization of available nutrition and assistance resources | • 80% of participants acknowledge receipt of nutrition resources  
• ↑ utilization of resources by 10-20% of participants | • 85% found the nutrition education very valuable  
• 80% of the participants were already using SNAP or WIC | Yes |
| 10: | ↑ competence of buying, cooking, & eating fresh foods by participants | 50% ↑ in competence in eating fresh produce following program, June-Oct 2018 | • 30% ↑ of cooking/preparing confidence  
• 60% ↑ of confidence of shopping on a budget June-Oct 2018 | No |
| 11: | Create community linkages between healthcare, community resources, food system, and *VeggieRx* participants: new partnerships between HDFFA with clinicians and providers | 5 more providers (or groups) established for future *VeggieRx* program implementation | 7 organizations and 120 health care providers and community professionals are now connected with HDFFA | Yes |
| 12: | Create community linkages between health care, community resources, food systems, and *VeggieRx* participants: New connections with other nutrition assistance/education programs | • ↑ awareness of *VeggieRx* program by 10+ community program managers after program completion Aug-Feb 2019 | Connected with program coordinators (n=9) across community organizations in nonprofits and state/government sectors that provide nutritional assistance or education to obtain referrals | No |
| 13: | Create community linkages between health care, community resources, food system, and *VeggieRx* participants: participants & farmers | • 80% ↑ knowledge by participants of farmers markets & farmers  
• 80% ↑ knowledge of *VeggieRx* participants by partner farmers after program completion | • 50% of participants had never shopped at the farmers market prior  
• 86% ↑ in knowledge of the market & farmers | Yes |
| 14: | ↑ local farm sales | Voucher redemption by local farmers by end of program | • $11,883 in sales due to the program  
• Average ↑ of 12% to their yearly Bend Farmers Market sales | Yes |
| 15: | Program satisfaction by all 3 sectors surveyed (participants, providers, farmers) | • >80% are satisfied with program overall  
• >50% have comments/suggestions to improve the program | • 98% of participants were satisfied  
• 100% of providers “liked” the program  
• 100% of vendors are interested in participating in future *VeggieRx* programs  
• 75% gave comments/suggestions to improve the program | Yes |
| 16: | Economic value | >80% of participants suggest a value amount for the program | • 86% of participants responded  
• The average amount participants (n=75) would be willing to pay for the program if they could afford it would be $8 per week | Yes |
GAPS AND RECOMMENDATIONS

GAP 1: FRESH FOOD PRESCRIPTION PROGRAMS LACK SUSTAINABLE FUNDING

The 2018 HDFFA Veggie Rx pilot program implemented by HDFFA was the first fresh food prescription program of its kind in Central Oregon. Participants, providers and farmers who were involved in the program all expressed the desire to have the program continue. For at least 33% of the participants, an additional $20 of fresh produce per week was sufficient to decrease their anxiety about obtaining food and allowed them not to run out of money for food. Providers felt this program was a great benefit to their patients to address the pervasive issue that food insecure people do not get to eat enough fresh food to be healthy. Farmers also benefited and experienced an increase in sales with local dollars supporting the broader local economy. However, the lack of sustainable funding for this program or similar produce prescription programs is a major gap in addressing the needs of food insecure individuals with diet-modifiable disease.

RECOMMENDATION 1: PROVIDE STATEWIDE SUPPORT FOR VEGGIE RX PROGRAMS

Veggie Rx programs have been operating across Oregon since 2014. In 2018, over 3,000 patients were expected to be served in over 30 cities across the state through 12 different vegetable and fruit prescription programs. These programs differ slightly based on community-specific needs and challenges, but ultimately, they all aim to improve the health of Oregonians by providing healthy food to food insecure patients.

The organization, Oregon Community Food System Network (OCFSN) is a collaboration of 53 nonprofit organizations and allies dedicated to strengthening local and regional food systems to deliver better economic, social, health and environmental outcomes across the state. HDFFA is a founding member of OCFSN and participates in their Veggie Rx state-wide work group. This group has defined a strategic vision to “combat diet-related, chronic disease, and food insecurity in Oregon State by integrating new vegetable prescription programs annually into Oregon’s health care system”. To accomplish this, the work group’s goals include: 1) establishing a program evaluation strategy; 2) systematizing & streamlining statewide program operations; and; 3) developing a sustainable funding plan.

Part of a sustainable funding model is being clear on the goals, objectives, deliverables, outcomes and metrics. It is known that the cost of health care for individuals and organizations that serve the Medicaid population has soared over years. And, there is growing literature and consensus that simply providing healthy food, rather than drugs, could be a method to address the ongoing and growing nationwide crisis of diabetes and heart disease. If coordinated care organizations and other payer institutions need more evidence to continue funding food prescription programs they could request that Veggie Rx programs meet specific outcome measures, and collaborate with the OCFSN VeggieRx work
group or their local VeggieRx implementers, like HDFFA, to better quantify the impact of such programs.

**GAP 2: FLEXIBLE MODEL NEEDS TO ADDRESS LIMITATIONS OF TARGET AUDIENCE**

VeggieRx programs vary in the model they use to deliver fresh food to their participants, and may include food provided at health clinics, farmers markets, farm stands, and/or grocery stores. The 2018 HDFFA VeggieRx program chose to deliver the program at a farmers markets, based upon six month of extensive research of models in Oregon and across the U.S. This model was chosen for a number of reasons including: a) HDFFA has been dedicated to supporting a healthy and thriving food and farm network in Central Oregon since 2012 and has established connections with local farmers and the farmer’s markets in the region; b) the pilot project was confined to Bend, OR which had an established farmers market; c) the pilot was implemented during the farmers market season during which availability of fresh produce is maximal; d) the farmers market represents an opportunity for patients to engage with their farmer and learn about local food from the experts; and e) the farmers markets provide an opportunity for social engagement which is essential to being healthy.

In our 2-month follow-up surveys, a handful of non-graduates stated that the main barrier to finishing the program was mobility, specifically getting to the market but also being able to park, and/or walking once there. This finding underscores the need for VeggieRx models to anticipate participants’ needs and establish opportunities to overcome the barriers for the target population, as well as provide a model that best meets the needs of the community.

**RECOMMENDATION 2: VEGGIERX MODEL SHOULD MEET COMMUNITY’S NEEDS**

The 2018 Veggie Rx pilot program retained over 75% of its participants. For Bend residents that did not have major mobility issues this program proved to be a success. In anticipation of mobility challenges, HDFFA provided transportation options (Uber and gas cards) and volunteers to help participants navigate the market. In future farmer’s market models, HDFFA will continue to provide volunteers so that participants can navigate the market, but also provide options for carrying produce while shopping (hand carts or wagons), and support in delivering the groceries to participant’s vehicles.

We recommend that VeggieRx programs provide the best food delivery model that is identified for the community it is serving. For example, the City of Prineville in Crook County has a high rate of food insecurity that remains poorly addressed. The city currently lacks a food pantry and has the highest cost per meal in the country. For that community, HDFFA and the local food bank are proposing a program that combines delivery of fresh food on a mobile food pantry where participants can access food bank staple items, the VeggieRx fresh foods and the HDFFA Community Health Care Worker (CHW). The ability for programs to remain flexible based on the needs of the community, as well as on information obtained from clients and other stakeholders during evaluation, will allow programs to best meet the needs of its participants.
GAP 3: RECRUITMENT AND RETENTION VARY FOR MEN VERSUS WOMEN

In the initial program enrollment questionnaire, HDFFA asked potential participants how interested they were and their motivations for joining the program. Across the board and regardless of gender, participants conveyed high motivation levels and interest in joining the program. However, we found that fewer men than women enrolled in the program and retention among men was lower for reasons we have not identified. As stated anecdotally by health care providers, middle-aged men are an underserved population that can be difficult to recruit and retain in nutritional programs but nevertheless could greatly benefit from the Veggie Rx program.

RECOMMENDATION 3. ENGAGE WITH PROVIDERS TO RECRUIT AND MAINTAIN MEN

Although the HDFFA CHW attempted to recruit more males by connecting with providers who engage with male patient populations, the discrepancy in enrolling patients of all genders was apparent. In future programs, greater emphasis will be placed on recruiting middle-aged men, many of whom live alone and may experience social isolation. Providers may need to specifically refer and engage with their male patients to increase recruitment and retention.

GAP 4: ELIGIBILITY CRITERIA NEEDS TO BE FLEXIBLE TO MEET TARGET AUDIENCE

The Veggie Rx program can be a powerful tool for combating diet-related chronic disease, and food insecurity. In this pilot, HDFFA defined eligibility criteria based on a number of existing programs and funding requirements, and focused on food insecure patients with cardiovascular disease and diabetes and in some cases, being a recipient of the Oregon Health Plan. However, nearly 20% of providers surveyed stated that obesity should be included in the eligibility criteria. Because the link between obesity and diabetes is well established, it follows that including obesity as an eligibility criterion would allow more participants to be eligible.

RECOMMENDATION 4: IDENTIFY PATIENT ELIGIBILITY CRITERIA WITH PRACTITIONERS

Defining a clear target audience and participant eligibility criteria for programs is essential for successful program implementation, and will better serve the recipients of the program. In this pilot, getting feedback from providers was important in defining the patient population that VeggieRx would serve. In future programs, HDFFA anticipates including obesity as an eligibility criterion.
Veggie RX

Central Oregon Pilot Project

2019 Report