



# **Vouchers 4 Veggies**

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## **Evaluation Report 2018: Key Findings**

*January 1, 2019*

# Table of Contents

<b>Introduction</b>	<b>1</b>
<b>Methodology</b>	<b>2</b>
Data Collection	2
Data Analyses	3
Limitations	3
<b>Results</b>	<b>4</b>
Target Populations	4
Participant Outcomes	4
Community-Level Impact	7
Suggested Improvements	8
<b>Conclusions</b>	<b>9</b>
<b>References</b>	<b>10</b>
<b>Appendices</b>	<b>11</b>

# INTRODUCTION

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The treatment of chronic disease costs the US more than 500 billion dollars annually<sup>1-4</sup>, despite the fact that most are preventable with diet and moderate exercise. For many low-income individuals, the foods critical for the prevention of chronic disease are not financially within reach. In fact, 24% of US low-income households report zero weekly purchases of fruits and vegetables<sup>5</sup>.

Disparities in dietary intake related to the accessibility and affordability of fruits and vegetables substantially increase health disparities. For example, studies show that an increase of fruit and vegetable intake by just 1-2 servings/day can improve cardiovascular outcomes and cancer risk, two diseases with the greatest socioeconomic disparities in the US<sup>6</sup>. Although most Americans do not consume the recommended 5+ daily servings of fruits and vegetables, rates are strikingly low in low-income communities<sup>5</sup>. Low-income households face numerous barriers to fruit and vegetable consumption; in some studies, price is the most frequently cited barrier<sup>7</sup>. The resulting dietary disparity, disproportionately impacting people of color, leads to higher chronic disease rates, higher complication rates, greater health expenses, and lower quality of life<sup>8,9</sup>.

In high-cost cities such as San Francisco, the problem is compounded by soaring housing costs and food prices that are 23% higher than the national average<sup>10</sup>. In fact, one out of every three low-income households in San Francisco is thought to have difficulty affording healthy food<sup>11</sup>. Many of these residents also live in underserved neighborhoods with little access to healthy foods at their local stores (often referred to as “food deserts”).

Vouchers 4 Veggies (V4V) is a healthy food supplement program launched in San Francisco in 2015 to support fruit and vegetable food purchases in low-income households where access to healthy food is limited by affordability and geographic accessibility. V4V provides vouchers redeemable for \$20-40 of fruits and vegetables each month for six months to residents living in neighborhoods with the greatest health disparities. The program works in deep collaboration with local community-based organizations and clinics that serve as voucher distribution sites. Through the distribution of vouchers dedicated specifically to the purchase of fruits and vegetables in impoverished areas, V4V’s goals are to significantly reduce food insecurity, improve the health of the population, and economically support stores that offer healthy food options in food deserts.

In February 2018, a V4V pilot program serving 232 older adults was launched in Los Angeles, California. All participants successfully completed the six-month voucher program by January 1, 2019.

This report summarizes program outcomes from V4V in San Francisco and preliminary findings from V4V in Los Angeles.

# METHODOLOGY

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The findings of this report are based on a multi-modal evaluation of V4V participants, distribution sites, and vendor partners in San Francisco and Los Angeles.

## Data Collection

### Participant Outcomes:

We administered a survey to V4V participants in San Francisco both pre- and post- intervention (at 0 and 3-6 months). Findings are based on surveys of 2,606 participants between April 2015 and June 2018. Surveys were available in three languages (English, Spanish and Chinese) and either self-administered by V4V participants or completed with the help of distribution site staff (generally due to translation needs, vision impairments, and limited literacy). Survey questions consisted of a validated 7-item fruit and vegetable intake screener, the USDA's 6-item Food Security Survey Module, and closed- and open-ended questions addressing health status, healthy eating behaviors, and program satisfaction.

In addition, we conducted phone, mail and in-person surveys 6-12 months after program completion for an additional 128 participants in order to test long-term dietary behavior changes as a result of the V4V program. Response rate was 45%, and 155 participants either declined actively or passively to participate. Survey measures were the same as those used in the baseline and 6-month surveys (fruit and vegetable intake screener, food security screener, self-reported health status, dietary behavior questions) with additional questions pertaining to specific eating behaviors and shopping patterns post-program. These participants received a \$10 gift card for completing the survey.

Identical survey tools and administration methods were used for the Los Angeles evaluation as described above for the San Francisco evaluation. Preliminary findings for participants enrolled in the Los Angeles Pilot between February and December 2018 are included in this report.

Distribution site staff recruited English- and Spanish-speaking V4V participants for focus groups conducted in San Francisco and Los Angeles. Two to three V4V staff facilitated each focus group for a duration of 60 to 90 minutes. Open-ended questions were followed by appropriate probes using an interview guide addressing the following major topics: experience receiving V4V vouchers, experience redeeming V4V at the food vendor, impact on consumption and purchasing patterns, and program satisfaction. Focus groups were audio-recorded with participant consent and staff took notes during each focus group. All focus group participants received a \$25 gift card.

In 2017, V4V partnered with San Francisco's Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) to enroll pregnant WIC clients in the V4V program. Over 500 pregnant WIC participants were surveyed pre- and post-intervention (0 and 3-6 months post) for fruit and

vegetable intake and food security status. The results of that evaluation are anticipated in early 2019.

### Vendor and Distribution Site Impact:

Surveys were conducted with distribution site staff (2016) and vendors (2016 and 2017) to measure program satisfaction and success. Both survey tools include closed- and open- questions measuring ease of use, benefits to clients/customers, and impact on site/vendor operations. The findings in this report reflect responses from 35 out of 57 partnering distribution sites (61%) and 19 of 19 partnering vendors (100%).

### Voucher Tracking and Utilization:

Ongoing voucher collection and tracking was supported by optical recognition software. Redemption rates, vendor use, and participant shopping patterns were assessed using data collected by this tracking system.

### Data Analyses

We use descriptive statistics to illustrate demographic composition, fruit and vegetable intake, healthy eating behaviors, self-perceived health status, redemption rates, vendor use, and shopping patterns.

We examined participant outcomes at baseline, 6 month follow up (i.e. at completion of program participation), and 6-12 months after program completion to assess change over time. We used paired-sample t-tests to test the statistical significance of changes in fruit and vegetable intake and food security status at the three time points. We used Wilcoxon signed rank tests to test the statistical significance of changes in self-reported health status and monthly food budget across the three time points. All p-values are reported at the conventional significance level of <0.05. All analyses were performed using Stata software (version 14.2; StataCorp, College Station, TX), Microsoft Excel, and Microsoft Access.

Audio recordings of focus groups were transcribed and supplemented with staff notes. Transcripts were reviewed by two program staff members and coded independently. Codes were reviewed and refined to reflect the major concepts that emerged through focus group responses.

### Limitations:

Like all evaluations, this one has several limitations. First, there is likely some degree of selection bias among participants who chose to complete the surveys. Second, social desirability may have biased some responses, particularly if participants felt as if responses might influence their likelihood of being able to reenroll in Vouchers 4 Veggies. Third, validation studies suggest that food frequency screeners like the fruit and vegetable screener we used underestimate actual dietary intake. Finally,

our evaluation does not include a control group; therefore, we cannot be certain that changes observed in participants are a result of the participation in V4V.

## RESULTS

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### Target Populations

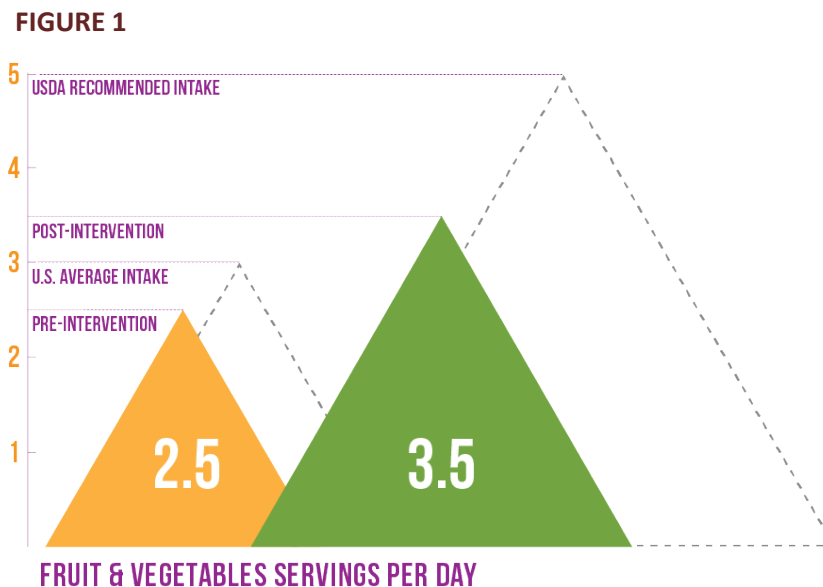
Between April 2015 and June 2018, V4V in San Francisco enrolled 2,606 households, reaching over 4,500 individuals. V4V serves critically poor residents of San Francisco neighborhoods with the highest poverty rates, health disparities, and challenges with food accessibility. Participants are both physically and economically vulnerable: low-income families, seniors, and disabled adults receiving Social Security Disability Insurance (ineligible for SNAP in California and therefore frequently food insecure). Seventy-five percent of participants report incomes under \$1,000/month, and 72% of non-pregnant participants have a chronic diet-related illness. Participants are also ethnically diverse: 16% Latino, 26% African American, and 32% Asian (Appendix Exhibit 1).

In 2017, V4V enrolled 870 additional pregnant people receiving WIC benefits. These results will be published in a separate report.

### Participant Outcomes

#### V4V participants report increased fruit and vegetable intake

Participant surveys revealed that San Francisco participants increased their daily fruit and vegetable intake by 1.03 servings daily after six months in the program (see Figure 1). Measured by a validated fruit and vegetable screener, participants reported a statistically significant increase from 2.49 to 3.53 servings per day ( $p < 0.001$ ,  $n = 862$ ).



Participants in the Los Angeles pilot reported similar results, with an increase of 0.69 daily servings in fruits and vegetables after six months in the program ( $p < 0.0009$ ,  $n = 129$ ).

Participants also reported positive changes in healthy eating habits after 6 months in the V4V program. They could afford fruits and vegetables they could not previously afford (95%), were more confident in their ability to make healthy food choices on a budget (98%), had increased knowledge of the importance of fruits and vegetables (95%), ate less unhealthy food (91%), and felt that eating a healthy diet was easier (42%). These positive changes could contribute to the persistence of healthy eating habits after vouchers are no longer available to a participant.

### V4V is associated with improved long-term healthy eating habits

Six to twelve months after program participation ended, 88% of V4V participants reported positive dietary behavior changes: 95% report they are more confident in their ability to make healthy food choices on a budget as a result of V4V and 94% report increased knowledge of the importance of fruits and vegetables. Unsurprisingly, the proportion of participants eating less healthy (junk) food dropped from 96% during the program to 88% post-program.

*"I'm not eating other things I was eating previously. It's made a big difference in my health. Medications that I take to keep me on course are working very well with the changes in my diet and I couldn't praise it more."*

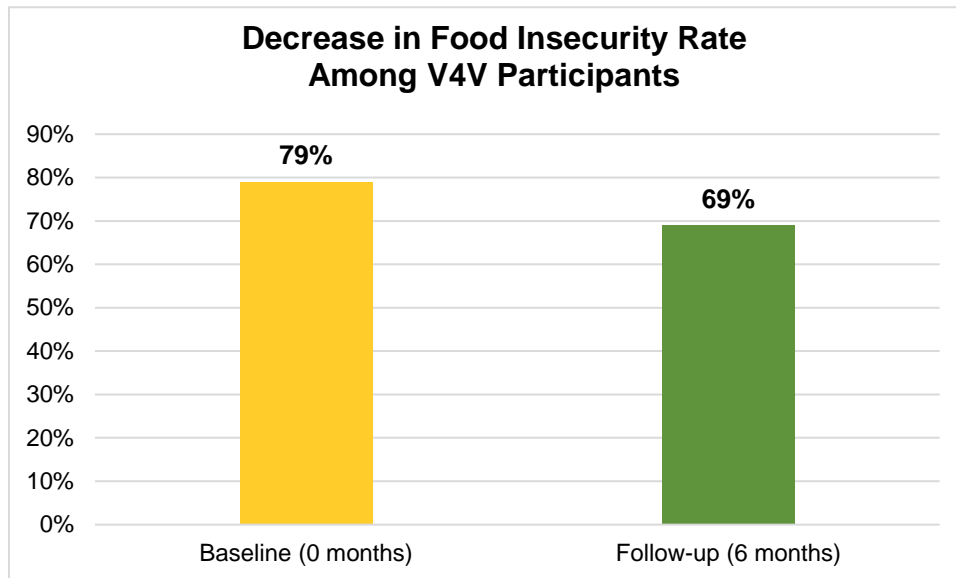
**Of particular note, 6-12 months after program participation ended, 53% of participants reported still eating substantially more fruits and vegetables on a daily basis, suggesting long-term dietary behavior changes, despite economic barriers.** Qualitative analysis revealed several characteristics of the 53% of participants who were able to maintain high fruit and vegetable intake without vouchers (a group we call the 'adopters'). In brief, adopters tended to: 1) understand the health impacts of fruits and vegetables and thus prioritized them in their budget; and 2) seek out cheaper vendors or other sources of healthy food (i.e., food banks). Non-adopters (those who were not able to maintain substantially increased fruit and vegetable intake) tended to experience financial barriers too great to overcome in the absence of the voucher and to perceive fruits and vegetables as a bonus or "luxury" item as opposed to necessary for health.

### V4V is associated with improved food security

The USDA defines food security as access at all times to enough food for an active, healthy life. People who are food insecure lack financial or other resources to access adequate food. Participant surveys showed that 79% of V4V participants live in food insecure households (compared to a national food insecurity estimate of 11.8% of households<sup>12</sup>). V4V participants' food security scores improved 0.88 points on a 6 point scale, from a mean of 5.53 to 4.65 using the USDA validated 6-

item scale ( $p < 0.001$ ,  $n = 928$ ). This corresponds with a 10% decrease in food insecurity among participants after six months in the program (see Figure 2 and Appendix Exhibit 2).

**FIGURE 2**



The USDA recognizes four levels of food security: very low food security, low food security, marginal food security, and food security. **Among survey respondents, 39% moved up at least one food security category after 4 to 6 months in the program, with 53% moving up from very low food security status.** Of note, the largest change in the individual questions of the 6-item food insecurity scale was in the item that addressed capacity of the family or individual to “eat a balanced meal”, underscoring voucher impact on improving nutritional intake.

Participants reported that their monthly household food budget was approximately \$200/month for single adult households and \$400/month for family households. V4V vouchers (\$20 per month for individuals and \$40 per week for families) therefore represent approximately a 10% increase in household food budgets. For some participants, the vouchers seemed to have an even greater impact on their food budget. For example, we asked participants “how many weeks per month does your food budget last?” More than a quarter (28%) reported an increase in their food budget by one or more weeks after six months in V4V, compared to prior to receiving vouchers.

Preliminary results indicate no significant change in food security for participants in the Los Angeles pilot. However the sample size is small ( $n = 154$ ), and as we gather additional data, we will have more power to detect a change in food security status. Of those sampled, 30% moved up at least one category on the scale from very low food security to low food security to marginal food security to food security.



## V4V participants report improved health status

Participants were asked to rate their health as excellent, very good, good, fair or poor at the start of the program and after six months of receiving vouchers. Participants reported a statistically significant improvement in self-reported health status ( $p < 0.001$ ), with a 14% change in status from poor/fair health to good/very good/excellent health (Appendix Exhibit 3). Furthermore, 94% believed their health had improved as a result of participation in V4V.

*“This my last time—since we, we’ve been doing this healthy eating and stuff, I was taking 9 to 10 medications a day. Now I’m down to 6! [...] And my blood pressure is normal. My blood pressure is back to normal!”*

These findings are consistent with our findings from the focus groups. Focus group participants highlighted V4V’s impact on their health by describing diverse health outcomes, including a decrease in prescription medications, weight loss, and improved energy.

## Participant Satisfaction, Voucher Utilization, and Program Demand

Between April 2015 and June 2018, V4V participants in San Francisco redeemed 77% of all vouchers distributed. Overall, 85% of participants remained active voucher users through the six month program, with 15% administratively withdrawn due to unforeseen circumstances, changes in residence, death, or voucher nonuse.

Satisfaction with the V4V program in San Francisco and Los Angeles has remained consistently high. Almost 90% of participants in San Francisco (89%) and Los Angeles (85%) report high or very high overall satisfaction. More than 95% of participants report that receiving and using vouchers is easy in both locations. However, 25-30% of participants feel that the \$20-\$40 monthly voucher value is too low.

Entirely through word-of-mouth (without any investment in marketing), V4V generated a waitlist of over 6,000 households in San Francisco, evidencing great demand for the program.

## Community-Level Impact

### Economic Impact:

V4V aims to economically support healthy food vendors in underserved neighborhoods. In neighborhoods with little access to fresh produce, V4V vouchers can drive an increased supply of fruits and vegetables by increasing demand for the perishable product, thereby contributing to a healthy food system and the reduction of food deserts. Between April 2015 and June 2018, V4V has infused over \$1.3M in produce purchases in underserved communities. The USDA estimates that money for food has an economic multiplier effect of 1.9, suggesting that this infusion of \$1.3M in produce purchases resulted in \$2.47M of local economic impact.

Survey findings from San Francisco indicate overall positive impacts on fruit and vegetable sales and revenue. Participating food vendors reported selling more fruits and vegetables (89%) and having more customers (78%). One out of every two stores reported displaying or stocking more fruits and vegetables as a result of V4V, suggesting increases in the quality and/or quantity of produce available.

Overall, 30% of vouchers were redeemed at corner stores; 50% at farmer's markets; and 20% at grocery stores. Shopping preferences differed by neighborhood. In the Tenderloin neighborhood of San Francisco (which has a high density of corner stores and lacks a full-service grocery store) participants shopped at corner stores and a local farmer's market. In the Bayview neighborhood of San Francisco (which has one mid-sized grocery store), participants overwhelmingly preferred the grocery store over corner stores. Feedback from focus groups suggested that the availability of high quality and diverse produce options at corner stores in the Bayview neighborhood was poor compared to the availability in larger grocery stores. Additionally, corner stores were deemed "unsafe".

### Distribution Site Impact:

A key element of the V4V model is the distribution of vouchers by partnering community organizations and clinics. Distribution sites reported overall satisfaction with the program and ease of administration. Almost all (97%) distribution sites reported that V4V has helped them better serve their clients; every site (100%) reported that V4V has been a helpful resource for clients; and 93% of sites reported that enrolling and distributing vouchers to clients was easy. The greatest challenge identified was administration of the surveys due to language barriers, literacy levels, and survey length.

*"This is one of very few preventative health initiatives that I have seen BOTH providers and clients excited about!"*

Qualitative analysis revealed that distribution site staff valued the voucher program as an avenue to engage clients in conversations about health and incentivize participation in other health and wellness programming. Site staff noted improvements in fruit and vegetable consumption, adequacy of food budgets, and social cohesion, particularly for those working with older adults. Staff identified V4V as a useful case management tool that encouraged participants to interact with other participants, such as shopping together for food after voucher receipt. Distribution site staff have coordinated voucher pick-up with "coffee hours", so that isolated older adults can meet each other when they pick up their vouchers and form impromptu groups to walk to the farmers market together to spend their vouchers.

### Suggested V4V program improvements

When asked about improvements to the program, V4V participants, vendors, and distribution site staff most often expressed the desire to extend the program beyond six months. Participants also

frequently requested an increase in the dollar amount of the vouchers and that the program serve more people in need. One participant stated, "I recommend it to the whole world!"

## Conclusions:

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This evaluation suggests that a modest supplement (\$20 - \$40 per month) for fruits and vegetables may be able to improve dietary intake, support food security, and improve health status among low-income and ethnically diverse individuals and families. Changes in dietary intake may persist even after the financial support is removed, at least in some households. The program also has positive impacts on the local food environment, providing important support for food vendors stocking healthy foods. Additional evaluation is needed to examine the extent to which the program was the driver of each of these important positive outcomes, and to dive deeper into the economic impact of the voucher on low-income neighborhoods.

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# Appendices

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## EXHIBIT 1

<b>V4V Participant Characteristics</b>	
	<b>N (%)</b>
Age (n=2,507, 99 responses missing)	
19-29	80 (3.2)
30-39	200 (8.0)
40-49	339 (13.5)
50-59	581 (23.2)
60-69	680 (27.1)
70-79	402 (16.0)
>80	225 (9.0)
Household Size (n=2587, 19 responses missing)	
Single Adult Households (1-2 people)	2096 (81.0)
Families (3+ people)	491 (19.0)
Gender (n=2574, 32 responses missing)	
Female	1396 (54)
Male	1114 (43)
Transgender	46 (2)
Other	18 (1)
Ethnicity/Race (n=2577, 29 responses missing)	
Latino or Hispanic	415 (16)
White or Caucasian	420 (16)
Black or African American	675 (26)
Native American or American Indian	28 (1)
Asian or Pacific Islander	820 (32)
Other	112 (4)
Multiracial	96 (4)
Do not know	11 (0.4)
Monthly income (n=2383, 223 responses missing)	
None	124 (5)
<\$500	301 (13)
\$501-\$1000	1354 (57)
\$1001-\$2000	488 (20)
\$2001-\$3000	83 (3)
>\$3000	33 (1)

## EXHIBIT 2

*Change in Food Security Status at Baseline and Follow-Up (n=929)				
	Baseline (0 months)		Follow-Up (6 months)	
Food Secure	103 (11%)		177 (19%)	
Marginal Food Security	91 (10%)		107 (12%)	
Low Food Security	381 (41%)	735 (79%)	399 (43%)	655 (69%)
Very Low Food Security	354 (38%)	food insecure*	246 (26%)	food insecure*

+p<0.05

\*Per USDA recommendations, households with low food security and very low food security are considered food insecure

## EXHIBIT 3

*Change in Health Status at Baseline and Follow-Up (n=1228)		
	Baseline (0 months)	Follow-Up (6 months)
Poor	196 (16%)	112 (9%)
Fair	620 (50%)	524 (43%)
Good	307 (25%)	396 (32%)
Very Good	70 (6%)	116 (9%)
Excellent	23 (2%)	69 (6%)
Do Not Know	15 (1%)	11 (<1%)

+p<0.05