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# WHOLESOME WAVE'S FRUIT AND VEGETABLE PRESCRIPTION PROGRAM, NEW YORK CITY

## 2013 OUTCOMES



In collaboration with



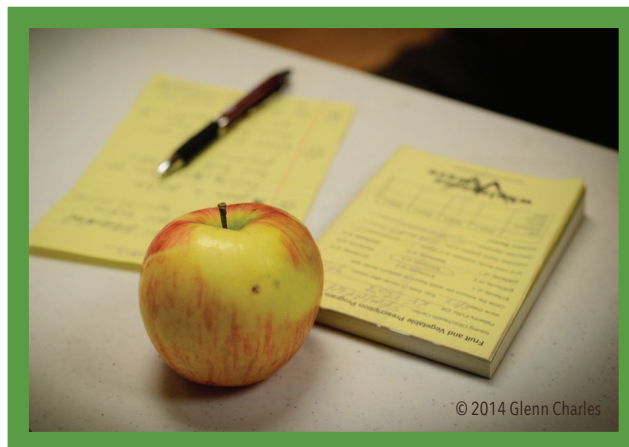
# INTRODUCTION

Wholesome Wave's Fruit and Vegetable Prescription program (FVRx) in New York City works through unique public-private partnerships drawn from the health and agricultural retail sectors. It is part of a collaboration between Wholesome Wave, the New York City Health and Hospitals Corporation (HHC), the New York City Department of Health and Mental Hygiene, the New York City Mayor's Office, and the Laurie M. Tisch Illumination Fund.

Implemented at two HHC hospitals in 2013—Lincoln Medical Center and Harlem Hospital Center—the program combines medical advice and counseling regarding healthy eating with the provision of resources that make fresh fruits and vegetables affordable. This allows pediatric patients to take concrete action on dietary advice that may otherwise have been little more than empty recommendations. Following Wholesome Wave's proven model, the FVRx NYC program aims to create communities of healthy eaters centered around farmers markets. The project makes a direct link between access to, and consumption of healthy, locally grown foods, and positive health related outcomes for patients with chronic diseases.

For this initiative, Wholesome Wave is adapting and testing the powerful FVRx model within HHC's integrated healthcare system. FVRx NYC is helping to build a robust model for national replication and refine the business argument for hospitals to adopt FVRx as a cost-saving measure to prevent and/or treat chronic disease. At the same time, the program's success is demonstrating the benefits of funding access to affordable, nutritious food as a health promotion and disease prevention strategy, building the case for long-term health policy and system change. Our ultimate goal is to develop a model that is scalable within HHC and NYC, with high-profile implications for national replication and positioning partners as leaders in innovative treatment models.

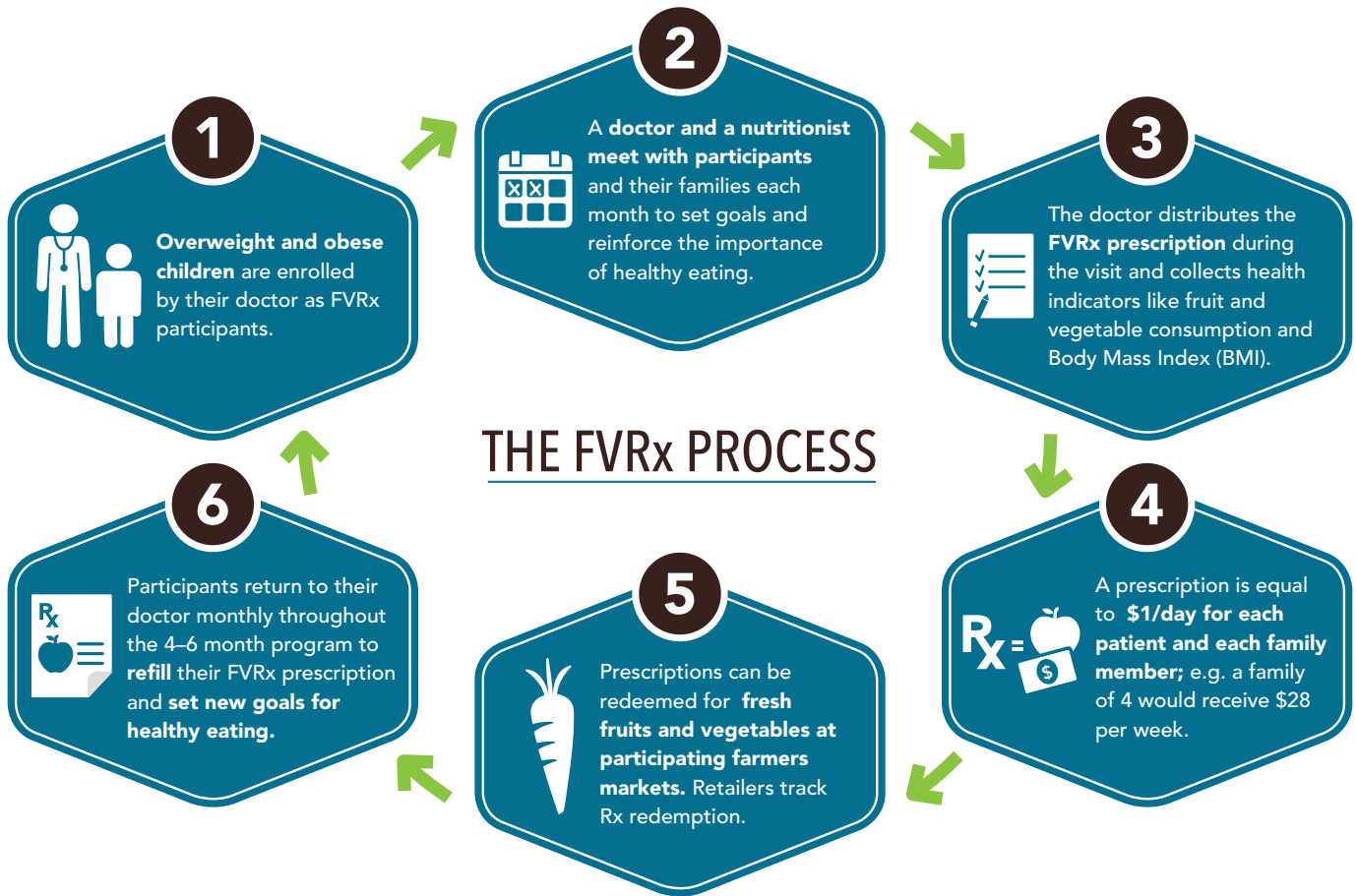
We are pleased to report positive results for project participants and their families. Results reported below aligned with findings from 2011 and 2012 FVRx programs implemented at federally qualified health centers in 12 states, which demonstrated impact on health data—more than 40% of participating patients decreased BMI and there were measurable increases in fruit and vegetable consumption.



Additionally, providers at both participating hospitals indicated that they felt the program helped them do their jobs better, opening up lines of communication on true barriers to healthy eating while providing their patients with the resources they needed to begin to change their diets.

This summary report provides some of the highlights of the evaluation and data collection efforts undertaken by Wholesome Wave and NYC collaborators during the 2013 season. The report addresses the evidence underlying Wholesome Wave's primary objectives of the FVRx NYC pilot, including:

- 1 Provide healthy food for patients with obesity-related chronic disease and their families;
- 2 Provide the education necessary for participating families to increase knowledge about the importance of fruits and vegetables in a healthy diet;
- 3 Measure changes in knowledge about healthy eating and local food;
- 4 Facilitate measurable change in shopping habits, driving new sales for local farmers markets;
- 5 Measure change in food security indicators on the part of FVRx households;
- 6 Measure patient and provider satisfaction.



## 1. PROVIDE HEALTHY FOOD FOR PATIENTS WITH OBESITY-RELATED CHRONIC DISEASE AND THEIR FAMILIES

The two hospitals enrolled **116 patients**, impacting **551 family members** who shared in prescription benefits.

Participants spent a total of \$43,274 at farmers markets across the city during the program period, an average of **\$370 per household**.

### FVRx Participants: Clinical Visits and Program Completion

The 116 patients made an average of **3.2 visits** over the course of the 4-month program, averaging almost once per month. Patients who made at least 3 health center visits and 6 farmers markets visits during the program were considered to have completed the program. Overall, **63%** of HHC patients **completed the program**.

All but three participating patients had public health insurance. Over a third received WIC benefits, and almost three-quarters received SNAP benefits.

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Over half (56%) of the FVRx patients were female. Patients averaged 9.2 years of age.

## 2. PROVIDE THE EDUCATION NECESSARY FOR PARTICIPATING FAMILIES TO INCREASE KNOWLEDGE ABOUT THE IMPORTANCE OF FRUITS AND VEGETABLES IN A HEALTHY DIET

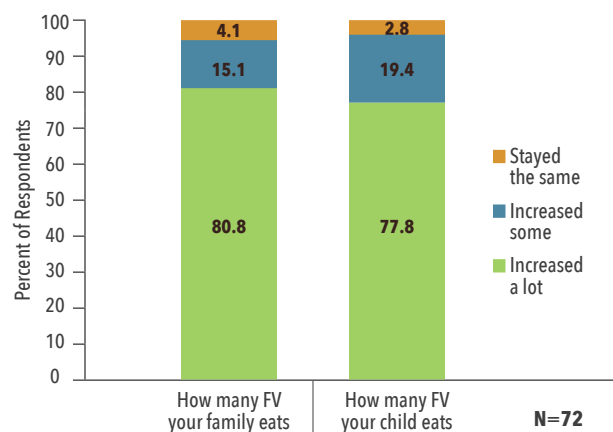
FVRx patients and their families receive nutrition education on the importance of fruits and vegetables in their diets during monthly face-to-face visits. The primary care provider encourages healthy behavior change through goal setting, and the nutritionist follows up with a nutritional assessment and further assistance with behavior change, including advice on replacing less healthy foods with fruits and vegetables.

### Healthy Eating Education & Fruit and Vegetable Consumption



When asked on the post-survey about the effects of the FVRx program on fruit and vegetable consumption, the vast majority of respondents stated that their participation in the program resulted in increased fruit and vegetable consumption for the individual pediatric patient, as well as the entire family.

Self-Reported Effect of FVRx Program on FV Consumption for Family and Patient



**Harlem Hospital Center** is a 272-bed teaching hospital. It serves an estimated 5,000 overweight or obese children every year. The hospital provides health care to an economically disadvantaged community: median family income for its primary service area of Central Harlem is \$24,230.

**Lincoln Medical and Mental Health Center** is a 347-bed teaching hospital. It provides health care to the South Bronx community and parts of Upper Manhattan.

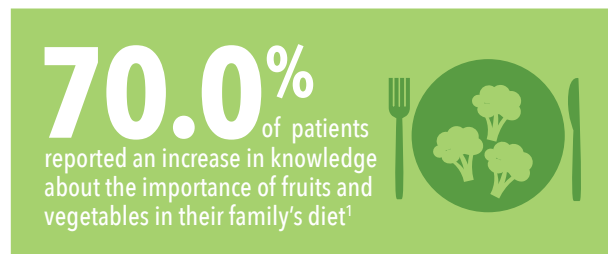
An estimated 30 to 40 percent of residents in this community are overweight or obese.

Most patients ate their fruits and vegetables in fresh form. Approximately 90% said that of the fruits and vegetables they had eaten over the last week, **most or all were fresh**, rather than frozen or canned.

Although significant change in BMI was not expected over the short FVRx season, this measure is included in data collected during health center visits. Of the 72 patients who had BMI measured at first and last visit (and who completed the program), **40.3% decreased their BMI**.

### Knowledge About Importance of Fruits and Vegetables in Diet

Measuring changes in knowledge about fruits and vegetables is an important component of the program's evaluation. FVRx patients were asked on the post survey how much they felt they knew about the importance of fruits and vegetables in their family's diets.



<sup>1</sup> A Wilcoxon signed-rank test showed a significant effect (increase) ( $Z = -6.138, p = <.001$ ) in respondents self-reported knowledge of the importance of FV in their family's diet from pre- to post-survey. Survey categories were "know a lot," "know some," "know only a little," and "know nothing."

### 3. MEASURE CHANGES IN KNOWLEDGE ABOUT HEALTHY EATING AND LOCAL FOOD

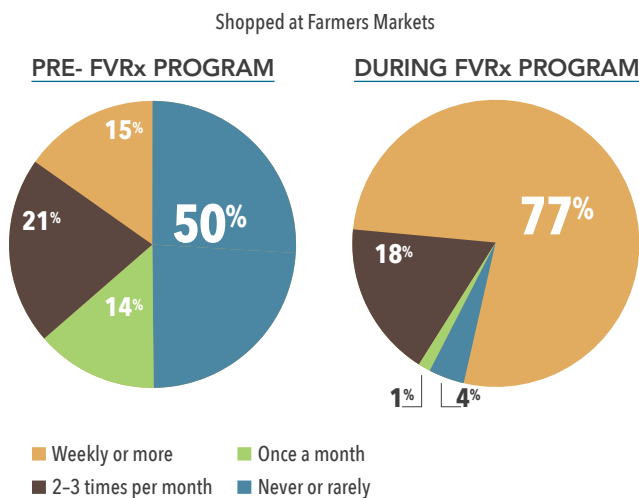
Patients significantly increased their knowledge about healthy eating and local food. From pre- to post-survey, **76.0%** of patients reported **increasing their knowledge** about where to buy locally grown produce in their area.

Other questions, including knowledge about fruits and vegetables grown locally, how to prepare fresh fruits and vegetables, and about the farmers market participating in the FVRx program.

### 4. FACILITATE MEASURABLE CHANGE IN SHOPPING HABITS, DRIVING NEW SALES FOR LOCAL FARMERS MARKETS

Wholesome Wave partnered with the NYC Department of Health and Mental Hygiene (DOHMH) to use Health Bucks as a mechanism for providing FVRx incentives. Health Bucks could be redeemed at more than 140 farmers markets in New York City. Before beginning the FVRx program, 50% of all FVRx patient households told us that they had never or rarely shopped at farmers markets.

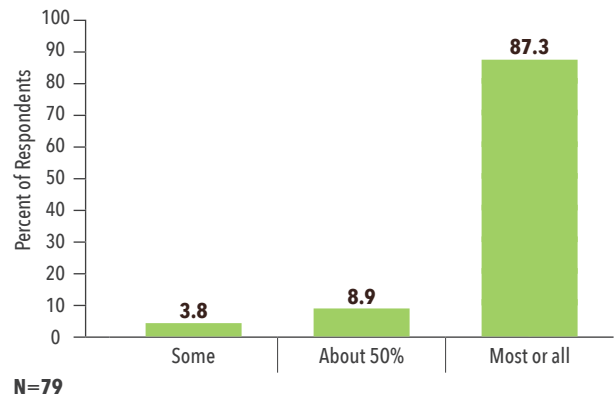
During the FVRx program, the majority (**77%**) of participants reported **attending farmers markets weekly or more**; another 18% reported attending more than once a month.<sup>2</sup>



Participants' shift to shopping at farmers markets resulted in high amounts of produce being purchased at the farmers markets. The majority (**87.3%**) of those who filled

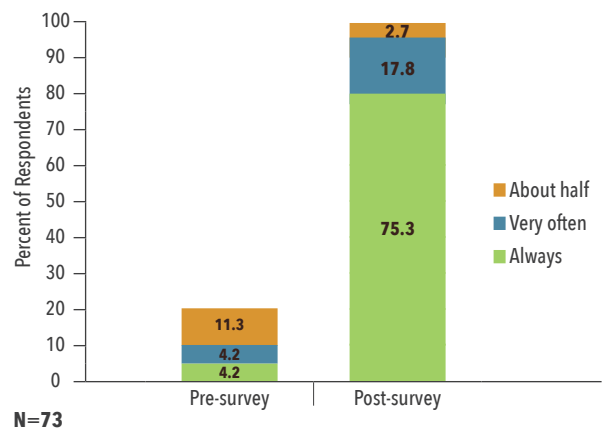
out post-surveys reported that they purchased most or all of their fresh produce at the farmers markets during the market season.

Amount of Fresh Produce Purchased at Farmers Market During Season



Results indicate that FVRx patients purchased fresh fruits and vegetables at farmers markets during the season at a much higher rate than before the season started.<sup>4</sup> When asked about the importance of the prescription in the family's decision to shop at the farmers market, the vast majority (**85%**) strongly agreed that it was important.

How often fresh fruits/vegetables were recently purchased at farmers markets



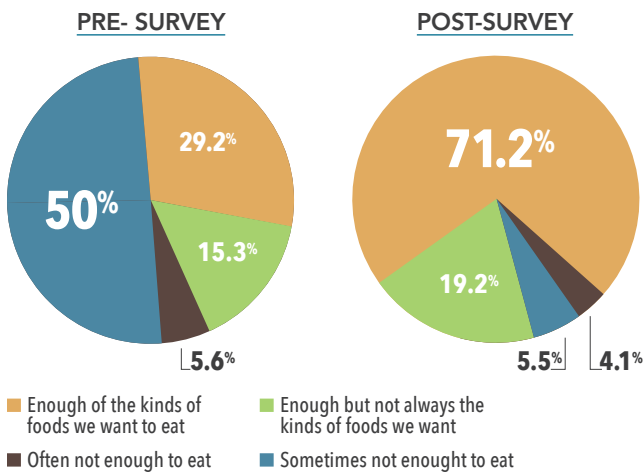
<sup>2</sup> A McNemar chi-square test showed a significant increase (at  $P < .0001$ ) in the number of households reporting that they were frequent visitors (2 or more times per month) to farmers markets from pre- to post-survey ( $N=79$ ).

<sup>3</sup> Categories included never, rarely, about half the time, very often, and always. For ease of exposition, only the latter three are reported here. A Wilcoxon signed-rank test showed a significant increase in households' use of farmers markets to purchase fresh fruits and vegetables from pre- to post-survey ( $Z = -7.058$ ,  $p < .001$ ); 89% purchased fresh fruits and vegetables at farmers markets more often.

## 5. MEASURE CHANGE IN FOOD SECURITY INDICATORS ON THE PART OF FVRx HOUSEHOLDS

To examine household food security, we asked respondents about the types and amounts of food that household members had eaten over the last three months.<sup>4</sup> From pre- to post-survey, indicators of food insecurity decreased for these households. Over the course of the FVRx program, **59.7% of households** reported increasing the types and amount of foods they desired.<sup>5</sup>

Describes Food Eaten in Household in Last 3 Months



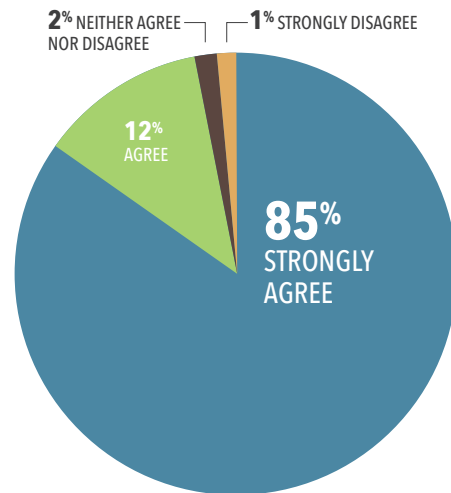
**“Overall patient retention for scheduled visits is higher among FVRx patients than other patients. There is a better understanding of fresh foods available to patients and an increased willingness for some families to try new foods.”** – Dr. Szema, Provider Champion, HHC, Lincoln Medical Center

## 6. PATIENT AND PROVIDER SATISFACTION

In the post-survey, patients were asked about their satisfaction with their healthy weight program related to their participation with FVRx. The vast majority (**85%**) strongly agreed that they were happier with their healthy weight program because of their participation in FVRx.

Providers also reported that they felt successful at improving patient knowledge about the importance of fruits and vegetables in a healthy diet.

SATISFACTION WITH FVRx PROGRAM



<sup>4</sup> The food security questions used were from the Current Population Survey, Food Security Supplement Questionnaire (see [http://www.ers.usda.gov/data-products/food-security-in-the-united-states.aspx#.utat8\\_10buy](http://www.ers.usda.gov/data-products/food-security-in-the-united-states.aspx#.utat8_10buy)).

<sup>5</sup> A Wilcoxon signed-rank test also showed a significant increase in FVRx households’ food security indicators from pre- to post-survey (Z = -5.017, p = <.001).

# CONCLUSIONS

Overall, the data shows that the FVRx NYC pilot achieved its goal of improving healthy food access for vulnerable overweight and obese children and their families. The program was successful in its efforts to increase consumption of fruits and vegetables, and to increase knowledge about the importance of fruits and vegetables in the diet, as well as practical knowledge such as food preparation and familiarity with farmers markets. These results are consistent with national data.

Participating families increased the frequency of visits to farmers markets significantly from the beginning to the end of the FVRx program, with the majority of families purchasing most or all of their fruits and vegetables at farmers markets by the end of the program. Families considered FVRx to be important in their decisions to shop at farmers markets. This underscored the program's ability to forge vital links between health providers and healthy food retailers to improve social and environmental factors that have a profound impact on community members' health.

FVRx also promoted patient-centered care for vulnerable populations. Patients received monthly nutrition counseling, above the national average for healthy weight programs. This nutrition counseling enabled patients and families to discuss their ability to afford healthy food. In turn, patients were given the tools to act on the doctor's recommendations with increased knowledge and fruit and vegetable prescriptions to spend at nearby farmers markets.

After 4 months of FVRx programming, the impact of the program is seen not only in positive health-related outcomes, but also in a higher retention rate for return visits, and an increase in the patients' satisfaction with the clinical obesity care received.

Learnings from the 2013 FVRx NYC pilot have informed plans for Year 2, with continued programming in New York City aligned with Wholesome Wave's long-term vision for health systems and policy change.

For more information visit [www.wholesomewave.org](http://www.wholesomewave.org), call (203) 226-1112 or email [fvr@wholesomewave.org](mailto:fvr@wholesomewave.org).

