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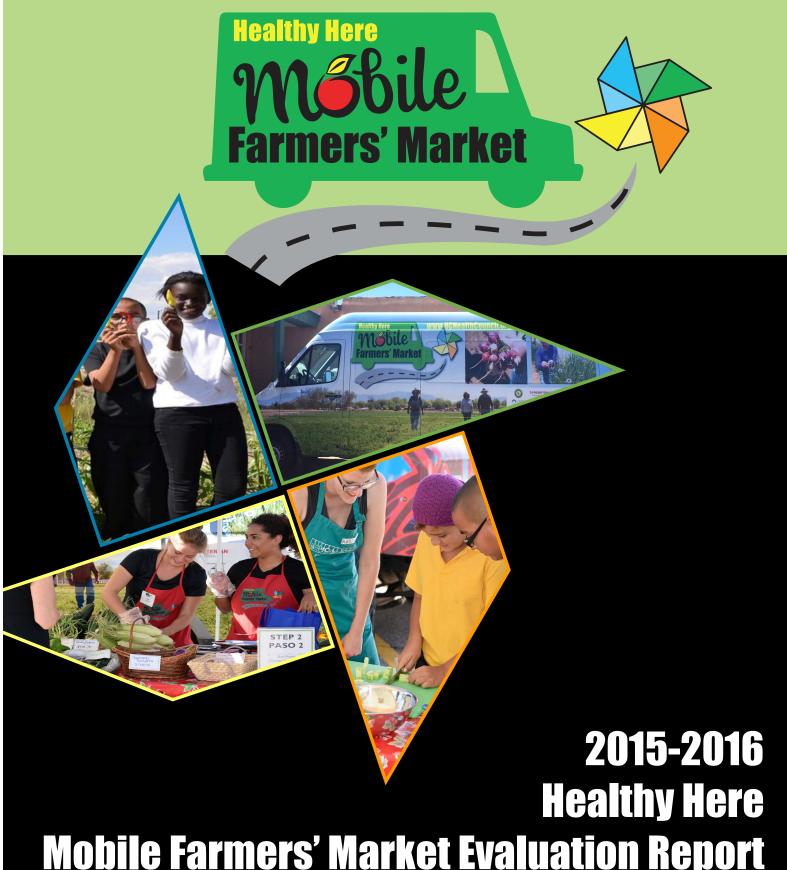
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Mobile Farmers' Market Evaluation Report

Acknowledgments

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Thank you to all of the *Healthy Here* initiative partners for their continued support and commitment to improving access to healthy food. Special thanks to Adelante Development Center, Inc. and Perigee Labs for data collection and management.



























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Executive Summary

Purpose

The purpose of the *Healthy Here* Mobile Farmers' Market (MFM) evaluation was to assess whether the market expanded access to fresh, local produce in the South Valley and International District of Bernalillo County, particularly by the Hispanic and American Indian populations living in those communities. The evaluation was designed to measure actual use of the MFM and fruit and vegetable consumption, as well as the extent to which these changed from the pilot season in 2015 to the 2016 MFM season.



Participation

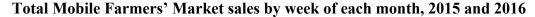
- A total of 947 people registered in 2016, an increase of 143% from the 2015 pilot season.
- The 2016 MFM reached households with 2,795 members, an increase of 65.3% from 2015.
- The 2016 MFM reached households with 889 children, an increase of 71.6% from 2015.
- Nearly two-thirds (63.5%) identified as Hispanic in 2016 compared to 55.3% in 2015.
- 14.8% identified as American Indian or Alaska Native in 2016, compared to 18.6% in 2015.
- 65.4% lived within *Healthy Here's* focus ZIP codes, an increase of 12.2% from 2015.

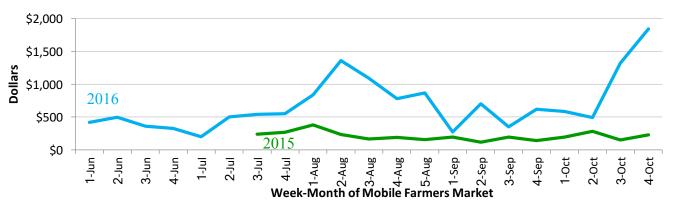
Mobile Farmers' Market participant demographics, by year

	2015	2016
Total number of registrants	659	947
Total visitor check-ins	986	1,561
Total number of people living in households served	1,692	2,795
Total number of children living in households served	518	889
Proportion of visitors who identified as Hispanic/Latino	55.3%	63.5%
Proportion of visitors who identified as American Indian/Alaska Native	18.6%	14.8%
Proportion of visitors who lived in focus ZIP codes	58.3%	65.4%

Market Sales

- The 2016 MFM season started one month earlier than in 2015.
- Overall sales during the 2016 season (\$14,498.72) were 3 $\frac{1}{2}$ times higher than sales in 2015 (\$3,112.62).





Market Sales by Payment Type

- The number of transactions in 2016 (1,816) were more than double those in 2015 (566).
- The average transaction amount in 2016 (\$7.98) was 40% higher than in 2015 (\$5.60).
- In 2016, more than half (58.8%) of MFM sales were from assistance programs such as SNAP/EBT and WIC.
- In 2016, people who paid using Fresh Rx spent an average of \$28.90 per transaction compared with people who paid with cash who spent an average of \$5.34 per transaction.

Fruit and Vegetable Consumption

- Reported consumption of fruits and vegetables did not significantly differ between 2015 and 2016.
- White, non-Hispanic participants consistently reported higher fruit and vegetable consumption than Hispanic or American Indian participants.
- As reported income increased, reported fruit and vegetable consumption increased.
- Participants in focus ZIP codes reported eating fewer servings of fruits and vegetables compared with participants from other ZIP codes.





Mobile Farmers' Market

Introduction

The Mobile Farmer's Market (MFM) is part of the *Healthy Here* initiative, a collaborative led by Presbyterian Healthcare Services and the Bernalillo County Health Council in partnership with community organizations interested in increasing access to healthful foods. The initiative is funded through a U.S. Centers for Disease Control and Prevention (CDC) Racial and Ethnic Approaches to Community Health (REACH) cooperative agreement. *Healthy Here* aims to reduce racial and ethnic health disparities



in two under-resourced communities in Bernalillo County, New Mexico: the International District and the South Valley. *Healthy Here* strategies include policy, system, and environmental changes that promote health and prevent chronic disease. The MFM was developed and pilot-tested in 2015 as a strategy to address access to healthy food options by bringing locally grown produce into communities with limited access to fresh fruits and vegetables. The MFM increased its presence and efforts in the focus communities during 2016. This report examines data from the 2016 MFM season with comparisons to the 2015 pilot season.

Background

The Hispanic and American
Indian populations in the
International District and South
Valley communities of Bernalillo
County experience both health
disparities and limited access to
healthy foods

People who live in under-resourced communities face barriers to accessing healthy foods (Walker et al., 2010). Mobile farmers' markets can address these challenges by bringing produce to areas without ready access (Larson & Gilliland, 2009; Widener et al., 2012). They can also provide an alternative to grocery stores by promoting fresh, locally grown foods. In addition, mobile farmers' markets have the ability to serve multiple communities.

The Hispanic and American Indian populations in the International District and South Valley communities of Bernalillo County experience both health disparities and limited access to healthy foods. To address these inequities, the *Healthy Here* initiative piloted the *Healthy Here* Mobile Farmers' Market (MFM) with the goal of increasing access to affordable, high-quality, healthy foods within these communities.

Healthy Here MFM partners, include Adelante, the Agri-Cultura Network, Bernalillo County, First Choice Community Healthcare, First Nations Community Healthsource, International District Healthy Communities Coalition, La Cosecha, Perigee Labs, Presbyterian Community Health, Presbyterian Medical Group, the Street Food Institute, UNM Community Health Worker Initiative, UNM SE Heights Clinic, and the UNM Prevention Research Center. These partners collaborated in 2016 to build on efforts initiated during the 2015 MFM pilot season.

MFM Site Visits

2015
2016
120

During the 2015 pilot season, the MFM visited two International District and two South Valley locations every Tuesday from July 14 through October 20. The MFM alternated weeks between the two communities for a total of 30 site visits in the community. In 2016 the MFM expanded to six sites – three in the International District and three in the

South Valley – with weekly visits to each site between June 6 and October 25. The MFM visited the International District on Mondays (except on Independence Day and Labor Day) and the South Valley on Tuesdays. MFM locations and times for the 2016 season are detailed below. In 2016, the MFM had a total of **120** site visits.

International District – *Mondays*

9:30 – 11:00 a.m. UNM SE Heights Clinic 8200 Central SE

Noon – 1:30 p.m. First Nations Community Healthsource 5608 Zuni Rd. SE

> 2:30 – 4:00 p.m. Van Buren Middle School 700 Louisiana Blvd. SE

South Valley – *Tuesdays*

9:30 – 11:00 a.m. Presbyterian Medical Group 3436 Isleta Blvd. SW

Noon – 1:30 p.m. Los Padillas Community Center 2117 Los Padillas Rd. SW

3:00 – 4:30 p.m. First Choice Community Healthcare 2001 El Centro Familiar Blvd. SW Flyers advertising MFM times, dates, and locations were developed in multiple languages. Three examples (English, Spanish, & Vietnamese) from the 2016 season are included below.



The purpose of the MFM evaluation was to assess whether the market expanded access to fresh local produce overall and to the Hispanic and American Indian populations living within the South Valley and International District of Bernalillo County. The evaluation was specifically designed to measure actual use of the MFM, fruit and vegetable consumption, and the extent to which these changed over time. The evaluation questions were:

- 1. To what extent are people in general, and specifically Hispanic and American Indian individuals, using the Mobile Farmers' Market?
- **2.** To what extent do purchases from the Mobile Farmers' Market increase over time?
- **3.** To what extent are individuals consuming fruits and vegetables in a manner more closely aligned with Dietary Guidelines for Americans' recommendations following the implementation of the Mobile Farmers' Market intervention?

This report includes information about 2016 MFM participants and sales, and compares data from the 2016 season to data from the 2015 pilot season.



Methods

The UNM PRC evaluation team collaborated with partners to develop evaluation instruments for the 2015 pilot season, and to refine evaluation instruments and to develop enhanced methods for data collection for the 2016 season. The evaluation team analyzed de-identified data collected and entered by staff from partner organizations that implemented the MFM.

Survey instrument development

During the 2015 pilot season, the Healthy Eating/MFM team developed two paper surveys for market attendees. Attendees completed an initial baseline 'registration' survey on their first visit to the MFM. The 11-item survey measured demographic characteristics (race/ethnicity, ZIP code, household size, annual household income, and sex), fruit and vegetable consumption, and process measures for use in improving MFM operations. The UNM PRC used the CDC's 2014 Behavioral Risk Factor Surveillance System (BRFSS) questionnaire, a food behavior checklist (Murphy, Kaiser, Townsend, & Allen, 2001), two Farmers' Market Customer surveys (e.g., Green Carts and Community Food Security Coalition), and input from MFM partners to create the initial surveys in 2015.

The team also developed a follow-up survey to collect similar information at the end of the 2015 pilot season. The follow-up survey included fruit and vegetable consumption questions as well as process evaluation questions designed to gather data for program improvement (e.g., barriers and facilitators). Both the baseline and follow-up surveys were available as paper-and-pencil surveys during the 2015 pilot season. The 2015 follow-up survey was also emailed to participants at the end of the pilot season. All surveys were available in both English and Spanish.

In preparation for the 2016 season, the Healthy Eating/MFM team reviewed the instruments that were used during the pilot season and made modifications. In order to ensure comparability of data from year to year, most questions remained the same. The following changes were made:

Changes to the baseline survey

- 1. The 2016 baseline survey at registration did not include a question about the sex of participants, as MFM team members did not consider it necessary and wanted to reduce registration time where possible.
- 2. A second, shorter registration survey was developed for use with returning participants from the 2015 pilot season. The instrument was shortened to eight items, removing questions about race and ethnicity, which were not expected to change from 2015 to 2016.

Changes to the follow-up survey

- 1. A question about whether participants learned any new cooking skills was changed from a Likert scale question to a yes/no question.
- 2. A new question asked participants how many MFM recipes they had prepared.
- 3. A new question asked participants which hands-on activities they would like to see at the Mobile Farmers' Market.
- 4. "Did you go to the Mobile Market after getting an email or text reminder?" changed to "What is the best way for you to get information about the Mobile Farmers' Market?"

Follow-up surveys began on September 12, 2016, and continued through the end of the MFM season on October 25th. Market participants who had attended at least once previously during the 2016 season were asked to take the follow-up survey when they checked-in for a visit to the MFM on or after September 12, 2016.

Data Collection

While paper surveys were used in 2015, the MFM team determined electronic data capture would be more efficient and switched to iPads for data collection during the 2016 season. Perigee Labs developed two applications (apps) for *Healthy Here*. The first, *Farmer's Register*,

was initially developed by Perigee as a point-of-sale system for Arcadia, a mobile market in the Washington, DC area. It was modified for the *Healthy Here* MFM. A second application, *Farmer's Member Manager*, was developed exclusively for *Healthy Here* to collect participant survey data using questions at the time of registration and follow-up.

Farmer's Member Manager

At each MFM event, a staff member was responsible for either registering participants or checking in participants who were already registered. Each staff member was assigned a unique four-digit number that allowed her or him to log into the *Farmer's Member Manager* dashboard. For first-time visitors to the MFM, the staff member entered the person's name and contact information, then asked the participant to answer the survey questions on the iPad. For returning visitors, staff members asked participants to verify their name or phone number, then touched an icon to check-in the person. The MFM provided a \$5 voucher



upon the third visit as an incentive for people to check-in each time they attended. De-identified data collected using *Farmer's Member Manager* were provided to the UNM PRC on a quarterly basis for analysis.

Farmer's Register

MFM staff used the *Farmer's Register* app at the point of sale. The app allowed the MFM manager to enter prices for available produce in advance. When a participant wanted to purchase produce, the staff member could select each item from a list of options, enter the amount or weight of the item, and the app would calculate the cost. The app allowed various payment options, including public assistance programs such as WIC and SNAP benefits. The MFM manager uploaded the purchase data to an online database at the end of each day. Data collected by the app included type of produce sold, amount sold, and amount spent. Data from the *Farmer's Register* were accessible to the MFM manager and the UNM PRC staff through a secured online database.



Results

Participants

More than 1,000 unique visitors attended the Mobile Farmers' Market during the 2016 season, an increase from an estimated 659 in 2015. 947 individuals registered at the Market, for a total of 1,561 visits (check-ins) during 2016. An additional 135 people purchased food at the market, but chose not to register. Among registrants, the Market served households with 2,795 members, including 889 children in 2016. Table 1 below provides a comparison of participants between 2015 and 2016 seasons.

Table 1. Visitor information from 2015 and 2016 Mobile Farmers' Market seasons.

	2015	2016
Total number of registrants	659	947
Total visitor check-ins	986	1,561
Total number of people living in households served	1,692	2,795
Total number of children living in households served	518	889
Proportion of visitors who identified as Hispanic/Latino	55.3%	63.5%
Proportion of visitors who identified as American Indian/Alaska Native	18.6%	14.8%

A majority (65.4%) of MFM registrants resided within focus ZIP codes (87108 and 87123 in the International District and 87105 and 87121 in the South Valley; Figure 1). This is an increase from 2015, when 58.3% of Market attendees were from focus ZIP codes.

Figure 2 shows *Healthy Here's* focus areas (outlined census tracts) with focus ZIP codes highlighted in colors that correspond to the bars in Figure 1.

Figure 1: Number (percentage) of Mobile Farmers' Market participants, by ZIP code and year

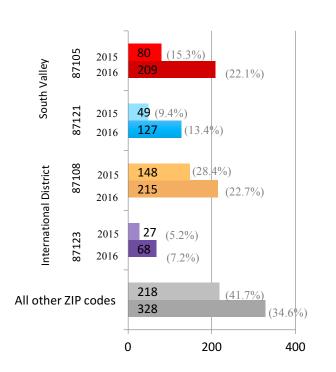
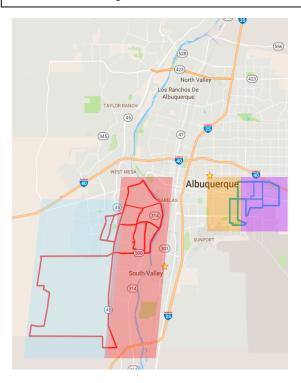


Figure 2: *Healthy Here* focus areas outlined within shaded Zip codes



During both the 2015 and 2016 seasons, participants were asked how they found out about the MFM. Participants could select more than one response. The largest number of registrants during both years indicated that they heard about the MFM when they walked or drove by it. The proportion of participants reporting each mechanism was similar from 2015 to 2016 with a few notable exceptions. A smaller proportion of participants learned about the MFM from friends and family in 2016 compared with 2015. Additionally, in 2016 participants reported learning about

the MFM from electronic means (e.g., website, Facebook) and from the Wellness Referral Center, which hadn't been established in 2015. Figure 3 shows the number and proportion of respondents that selected each response.



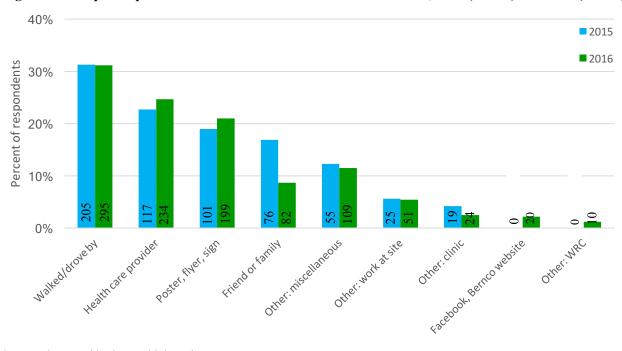


Figure 3: How participants heard about the Mobile Farmers' Market, 2015 (n=448) and 2016 (n=947)

Because the MFM aimed to increase access to healthy foods for low-income residents, the registration survey included a question about annual household income. During both the 2015 pilot season and the 2016 season, the majority of MFM customers had annual household incomes of less than \$25,000 (Figure 4).

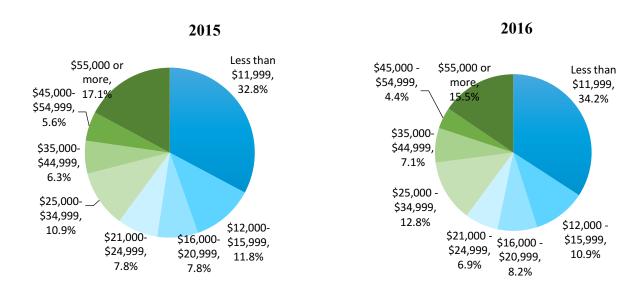


Figure 4. Mobile Farmers' Market registrant household income distribution, 2015 and 2016

^{*}Respondents could select multiple options.

The majority of MFM registrants reported receiving benefits from government assistance programs during 2015 (59.6%) and 2016 (51.4%; Figure 5). In 2016, more than three times as many WIC recipients and twice as many SNAP recipients attended the MFM than in the 2015 pilot season.

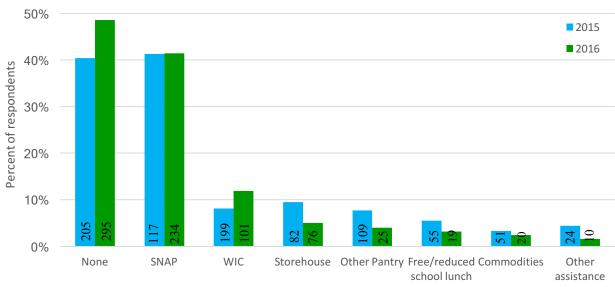


Figure 5. Benefits received in the past 12 months from government assistance programs by MFM registrants, 2015 (n=455) and 2016 (n=947)

Sales

Overall sales during the 2016 season totaled \$14,498.72, exceeding 2015 pilot Market sales (\$3,112.64) by 366%. The MFM was open one month longer in 2016 than in 2015, but did not operate on Monday, July 4th or Monday, September 5th due to Federal holidays during the 2016 season. Average sales per MFM site visit in 2016 were \$120.82 compared with \$103.75 in 2015. Sales data for 2015 and 2016 are shown by week of the month in Figure 6.

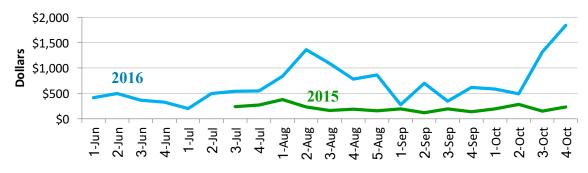


Figure 6. Total MFM sales for all sites, by week of each month, 2015 and 2016

Week-Month of Mobile Farmers Market

^{*}Respondents could select multiple options.

A total of 1,816 transactions were recorded at the MFM during the 2016 season, compared to 566 in 2015. The average transaction amount in 2016 was \$7.98, which was 40% higher than the average sale amount of \$5.60 in 2015.



In 2016, the sales tracking application was able to capture sales by payment type. This was not an option in 2015. While cash or credit/debit cards were used for 41.2% of sales, the majority (58.8%) of purchase funds were from assistance programs. These included the Supplemental Nutrition Assistance Program (SNAP/EBT) which was matched during the 2016 season with Double-Up Food Bucks (DUFBs), New Mexico Farmers' Market Association's \$10 vouchers (NMFMA-\$10), the Women, Infants and Children Farmers' Market Nutrition Program checks (WIC checks), Senior Farmers' Market Nutrition Program checks (Senior Checks), and vouchers (Table 2; Figure 7).

NMFMA-\$10 coupons were the largest single source of assistance funds used at the MFM with \$2,331.51 in sales, followed by WIC checks at \$1,680.20. NMFMA-\$10 coupons were made available through a grant that provided for \$10 in free produce for every person who shopped at the MFM during the last two weeks of the 2016 season. The NMFMA-\$10 assistance program accounted for 16% of total MFM sales during 2016.

Table 2. Total Mobile Farmers' Market sales by payment type, 2016

	Number of	
Payment Type	transactions	Total sales
Cash	783	\$4,179.05
NM Farmers Market Association \$10 assistance*	259	\$2,331.51
Credit/Debit card	190	\$1,798.56
WIC Farmers' Market Nutrition Program checks	115	\$1,680.20
SNAP/EBT + Double Up Food Bucks**	151	\$1,604.55
Senior Farmers' Market Nutrition Program checks	80	\$997.18
Wellness Referral Center \$5 voucher	94	\$896.72
Miscellaneous \$5 voucher	76	\$410.13
Repeat visitor \$5 voucher (3rd visit)	57	\$282.97
Fresh Rx food prescription \$30	11	\$317.85

Total Sales: \$14,498.72

^{*}This assistance was available to all Market attendees during the last two weeks of the Mobile Farmers' Market

^{**}Double Up Food Bucks was a SNAP matching program for Farmers' Market produce purchases

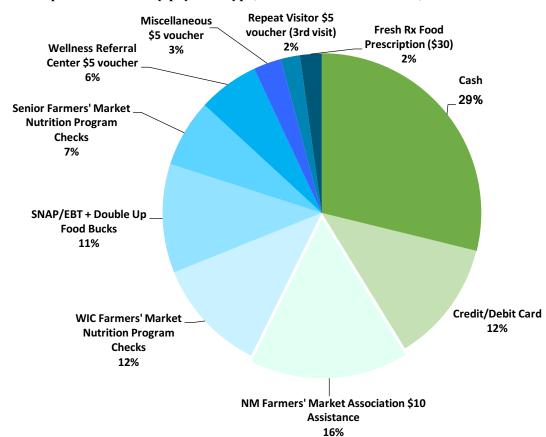


Figure 7: Proportion of sales by payment type, Mobile Farmers' Market, 2016

In 2016, the types of assistance used to purchase produce varied by site. For example, \$5 vouchers (misc.) were used to purchase \$255.81 of produce at the UNM SE Heights Clinic, but were not used at all at Van Buren Middle School. The \$30 Fresh Rx vouchers were used at UNM SE Heights Clinic, Los Padillas Community Center, and Presbyterian Medical Group (PMG) Isleta Clinic, but not used at First Nations, Van Buren Middle School, or First Choice (Table 3).

Table 3. Purchase amounts by payment type by site, Mobile Farmers' Market, 2016

	Credit/Debit /Cash	SNAP/ DUFBs	WIC Checks	Senior Checks	\$5 Voucher - 3rd visit	\$5 Voucher - misc.	\$30 Fresh RX	\$5 - WRC	NMFMA \$10	Total Sales
UNM SE Heights	\$1,227.67	\$443.46	\$228.85	\$257.61	\$68.94	\$255.81	\$118.35	\$223.40	\$533.85	\$3,357.94
First Nations	\$614.38	\$250.81	\$445.83	\$143.83	\$34.95	\$5.00	\$0.00	\$49.38	\$478.98	\$2,023.16
Van Buren Middle School	\$609.23	\$104.16	\$179.50	\$149.20	\$15.00	\$0.00	\$0.00	\$20.00	\$221.50	\$1,298.59
PMG Isleta	\$1,368.56	\$398.53	\$213.67	\$233.66	\$79.83	\$44.32	\$170.00	\$243.00	\$273.40	\$3,024.97
Los Padillas Community Center	\$497.79	\$80.78	\$55.00	\$19.50	\$15.00	\$40.00	\$29.50	\$98.51	\$160.14	\$996.22
First Choice	\$1,659.98	\$326.81	\$557.35	\$193.38	\$69.25	\$65.00	\$0.00	\$262.43	\$663.64	\$3,797.84
									Total:	\$14,498.72

During the 2015 MFM season, unsold produce was donated to local food pantries and kitchens. In 2016, in addition to making donations of unsold food, the MFM also sold \$1,002.23 in produce to the Street Food Institute, a partner that was able to cook and serve the food.



Follow-up Surveys

Follow-up surveys were administered at the end of each MFM season. In 2015, participants were asked to complete a paper survey during the last two weeks of the market, and a link to an online survey was delivered via email. In 2016, participants who had already completed a registration survey (e.g., anyone who had previously been to the MFM at least one time and who had registered) were invited to complete a follow-up survey on iPads at the market starting in mid-September.

Market staff collected follow-up survey data from 42 participants in 2015 and from 84 participants in 2016. Follow-up surveys collected information about fruit and vegetable consumption as well as participant feedback about the MFM for process evaluation purposes.

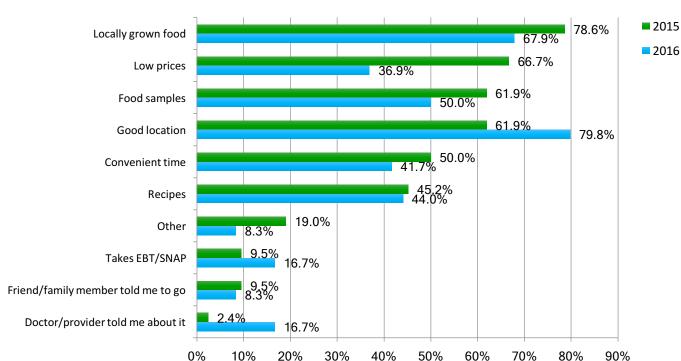


Figure 8. Reasons why people attended the Mobile Farmers' Market, 2015 (n=41) and 2016 (n=84)

When asked why they came to the MFM, the most popular response from survey participants in 2015 was "Locally grown food." The most popular response in 2016 was "Good location." A larger proportion of survey participants reported that their healthcare provider told them about the MFM in 2016 (16.7%) compared with 2015 (2.4%). A larger proportion selected "Low prices" in 2015 (66.7%) than in 2016 (36.9%).

When asked what makes it difficult to shop at the MFM, responses differed in 2015 and 2016. In 2015, people said that the MFM ran out of food they wanted (34.2%) and that there were not enough fruit and vegetable choices (34.2%). In 2015, one-quarter of respondents reported no barriers to shopping at the MFM while in 2016, nearly half (48.8%) of the respondents reported no barriers.

Among those who reported challenges to shopping at the MFM in 2016, the most common response (n=20, 23.8%) was that the MFM doesn't come often enough. Some participants (2.6% in 2015 and 15.5% in 2016) cited cost as a barrier. One person wrote in 2016, "sometimes the prices are high, but the quality is much better." Nine respondents said that the MFM didn't have enough choices of fruits and vegetables, and five said that the MFM runs out of the foods they want. Seven people said that the MFM doesn't come at a good time.

When asked how the MFM could improve, the majority of survey respondents (53.7%) in 2015 wanted the MFM to come more often. The most common recommendation in 2016 (38.1%) was for lower prices (Figure 9).

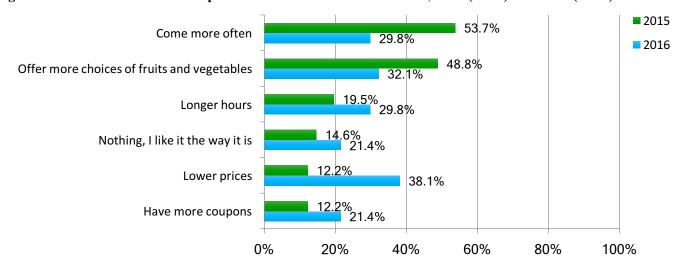


Figure 9: Recommendations to improve the Mobile Farmers' Market, 2015 (n=41) and 2016 (n=84)

Other feedback about the 2016 Mobile Farmers' Market

In 2016, half of the follow-up survey respondents said that the best way for them to get information and reminders about the MFM was by text message (n=42). An additional 31 people said that email was best, and 15 said Facebook. Other responses included the Bernalillo County Health Council website (n=2) and Instagram (n=1). Most (82.1%) of 2016 follow-up survey respondents reported that they learned something new at the MFM and nearly half (48.8%) reported that they learned a new cooking skill. Nearly three-

quarters of follow-up survey respondents (70.2%) said that they tried a food for the first time at the MFM, and two-thirds (67.9%) said that they tried at least one of the recipes from the MFM. Most people (90.0% in 2015 and 87.8% in 2016) said that the MFM was "very important" for getting healthy food in their community.



Fruit and vegetable consumption

The study team measured year-over-year changes in consumption among all respondents who completed a survey during registration. In 2015, 610 respondents completed survey questions asking about their fruit and vegetable consumption at the time of registration. Their reported consumption of vegetables differed little from 2015 to 2016, with respondents in 2015 reporting that they consumed 9.1 servings per week, on average, compared to an average of 8.9 servings per week reported in 2016. Similarly, average weekly fruit consumption did not see a change from 2015 (8.8 servings) to 2016 (8.6 servings; Table 4).

Table 4. Average reported consumption of fruits and vegetables in a typical week in 2015 and 2016 among respondents at registration.

	2015 Consumption, mean	2016 Consumption, mean	Difference, (p-value)*
Number of respondents	610	947	
Servings of Vegetables	9.1	8.9	0.2 (p=0.64)
Servings of Fruit	8.8	8.6	0.2 (p=0.60)

^{*} Unpaired two-sample t-test, testing the equality of means

Additionally, the team examined demographic variables for association with fruit and vegetable consumption. White, non-Hispanic respondents reported both higher vegetable consumption, with 3.2 servings more per week, on average, in 2015 and 2.5 servings more per week in 2016, compared with Hispanic respondents (p<0.005; Table 5). Other races also reported significantly more vegetable consumption compared with Hispanics in 2016.

There was also a strong relationship between income and vegetable consumption, with those in the higher income categories in both years reporting 2 to 4 more servings per week compared to those with household incomes less than \$12,000 a year. Similar relationships to that seen with vegetables held for race and income average servings of fruit per week. Respondents from focus ZIP codes reported fewer servings a vegetables per week compared with respondents from non-focus ZIP codes, although the difference was only significant in 2015. There was little relationship between family size and number of children in the household and fruit and vegetable consumption. There were not significant changes in vegetable consumption from 2015 to 2016 in any of the subgroups within race/ethnicity, income, or focus ZIP codes.

Table 5: The relationship between mean vegetable consumption and the demographic variables of race, income and focus ZIP code status, Mobile Farmers' Market, 2015 and 2016

	2015		2016		
		Mean		Mean	
	Sample	Vegetable	Sample Size	Vegetable	
	Size (%)	Consumption	(%)	Consumption	
Race					
Hispanic	282 (47.9)	8.1	511 (60.3)	8.1	
White (Non-Hispanic)	138 (23.4)	11.1*	158 (18.6)	10.5*	
American Indian/Alaska Native	111 (18.9)	9.6	113 (13.3)	9.0	
Other (AA, API, Mixed)	58 (9.9)	8.9	56 (6.6)	11.3*	
Income					
Less than \$11,999	164 (33.9)	7.2 (ref)	234 (36.3)	7.6 (ref)	
\$12,000 - \$24,999	126 (26.0)	9.6*	187 (29.0)	8.7	
\$25,000 - \$44,999	119 (24.6)	9.8*	129 (20.0)	10.6*	
\$55,000+	75 (15.5)	11.5*	95 (14.7)	10.5*	
ZIP code					
Non-Focus	219 (41.2)	10.2 (ref)	286 (33.7)	9.4 (ref)	
Focus	313 (58.8)	8.6*	562 (66.3)	8.6	

^{*}Significantly different than the reference category at the p<0.05 using the Wald test for significance in ordinary linear regression

Discussion

2016 MFM sales and attendance surpassed total sales and attendance for the pilot MFM season in 2015. A longer MFM season, the addition of two new sites – one in the South Valley and one in the International District – and holding the MFM weekly at all sites rather than alternating weeks were likely responsible for at least a portion of the increase in attendance and sales. The addition of a dedicated staff person to serve as the MFM coordinator may have contributed to



increased attendance through improved coordination among partners and overall operations. Additionally, participants familiar with the MFM from the 2015 season may have returned and informed others of the MFM. Finally, the addition of new partners that conducted activities at the Market may have contributed to the increase in participation.

The MFM was successful at reaching the *Healthy Here* focus demographic groups – low-income, Hispanic and Native American populations in the International District and South Valley. During both 2015 and 2016, the majority of MFM registrants reported living in

the focus ZIP codes with limited access to fresh produce. Between 2015 and 2016, an increase in the proportion of Hispanic visitors and a decrease in the proportion who identified as Native American or Alaska Native may have been the result of the addition of new sites during the 2016 MFM season. The MFM continues to reach a low-income population. During both seasons, the majority of registrants reported household incomes of less than \$25,000 per year.

The amount of weekly sales varied more during 2016 than during 2015. During the 2016 season, overall MFM sales increased during the summer, peaked in early August, and decreased in late August. The decrease in sales corresponds to the start of the school year in Albuquerque. Although sales decreased, they did not drop below sales from the first weeks of the MFM season. The last two weeks of the 2016 MFM saw a dramatic spike in sales, which was associated with a grant from the NM Farmers Market Association which made \$10 in free produce available to every person who shopped at the MFM during those two weeks.

Utilization of a mobile app to capture both sales and participant demographic and fruit and vegetable consumption data may have improved the ease of participant registration and the efficiency of transactions at the 2016 MFM. At the end of the 2015 season, follow-up survey data were collected from only 42 participants, compared to 84 in 2016. In addition, the app allowed for more detailed data about sales, including payment type.

A limitation in our evaluation is that not every person who attended the MFM provided demographic data or information about their fruit and vegetable consumption. There is a possibility that those people who chose to register are somehow different from those who did not. Therefore, the subset of participants who registered may not be representative of MFM participants as a whole. The *Healthy Here* team offered vouchers to help encourage people to register for and check in at the MFM. Additionally, survey data are self-reported and may be prone to recall bias.

Conclusion

The *Healthy Here* Mobile Farmers' Market provided Hispanic and Native American individuals living in low-income communities with limited access to fresh produce an opportunity to buy fresh, local fruits and vegetables. The number of participants increased from 2015 to 2016 as did the amount of sales and the number of partners participating and offering activities (e.g., cooking lessons, taste-testing). The challenge ahead will be sustainability as interest in continuing and scaling-up the MFM grows.

References

Larsen K, Gilliland J. A farmers' market in a food desert: Evaluating impacts on the price and availability of healthy food. *Health & Place*. 2009;15(4):1158-62.

Murphy SP, Kaiser LL, Townsend MS, Allen LH. Evaluation of validity of items for a food behavior checklist. *Journal of the American Dietetic Association*. 2001 Jul 31;101(7):751-61.

Walker RE, Keane CR, Burke JG. Disparities and access to healthy food in the United States: A review of food deserts literature. *Health & Place*. 2010;16(5):876-84.

Widener MJ, Metcalf SS, Bar-Yam Y. Developing a mobile produce distribution system for low-income urban residents in food deserts. *Journal of Urban Health*. 2012;89(5):733-45.