



Produce Prescription Programs: 2017–2021

Descriptive Assessment and Cost Analysis of Michigan's
Programs

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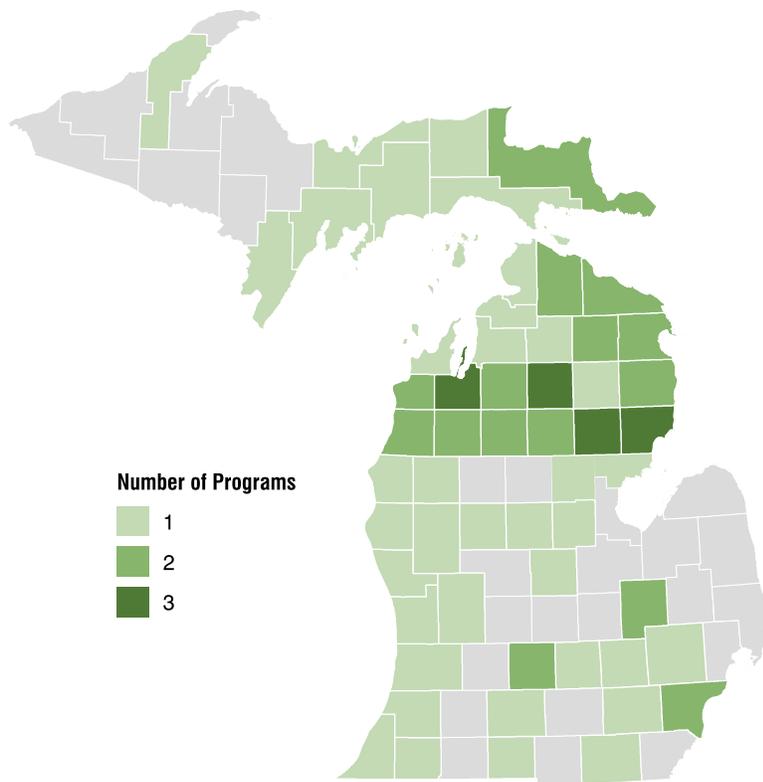
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Introduction

The Michigan Farmers Market Association (MIFMA) is working to build and strengthen a statewide network of individuals and organizations implementing Produce Prescription Programs through shared strategies for engagement, metrics and evaluation, and finance and program sustainability.¹ As part of this work, MIFMA collected financial data from 25 of its partner Produce Prescription Programs and engaged Public Sector Consultants (PSC) to do a descriptive assessment and cost analysis of this data.² The descriptive assessment and cost analysis presented here are meant to complement another forthcoming report, *A Landscape of Produce Prescription Programs in Michigan*, that features many of these same programs.

These programs operate in various areas of the state, with programs covering 56 of Michigan's 83 counties. As illustrated in Exhibit 1, there are many programs in the upper part of the lower peninsula, in western Michigan, and in the eastern part of the Upper Peninsula.

EXHIBIT 1. Counties with Past or Current Produce Prescription Programs



N = 25
Source: Data provided by MIFMA and analyzed by PSC.

¹ For more on MIFMA Produce Prescription Programs, see <https://mifma.org/for-markets/produce-prescription/>.

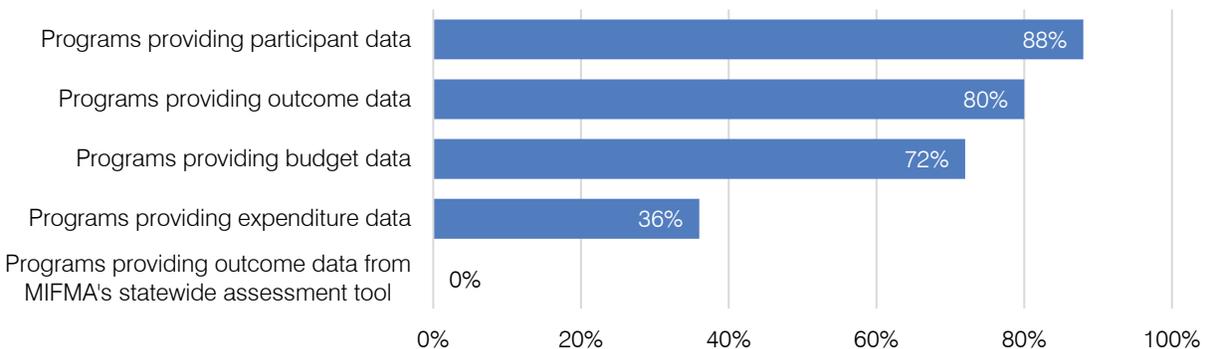
² See Appendix A for a list of programs.

Programs began as early as 2008, although most started in 2016 or later, and three programs are scheduled to start in 2022. Most programs (72 percent) are currently operating. Of the 25 programs, 14 have received grant funding from the Michigan Health Endowment Fund (Health Fund) to support their work in this area. In addition, programs received funding from 25 other sources, including foundations, public health departments, and health systems.³

Data Limitations

As Exhibit 2 illustrates, a diverse but limited data set was available for this analysis. Roughly three-quarters (72 percent) of programs provided budget data, while 36 percent provided expenditure data. Most programs (88 percent) provided participation data, while 80 percent of programs provided some type of outcome data. Three programs used the MIFMA statewide evaluation tool in a modified form; however, no data was received from these programs. It is not possible to aggregate available outcome data at this time.⁴

EXHIBIT 2. Program Data Availability



N = 25

Note: Categories total more than 100 percent because programs could provide more than one kind of data.

Source: Data provided by MIFMA and analyzed by PSC.

Two caveats are important for the analysis that follows:

First, too few programs reported actual expenses to warrant using these data. Instead, and to ensure consistency, PSC used budget data to calculate program costs for all programs that provided it. These data may or may not correspond to actual program expenses. As a result, actual cost per participant could be higher or lower than reported here.

Second, while roughly half (48 percent) of reporting Produce Prescription Programs were funded through the Health Fund and approximately half (52 percent) through other sources, few non-Health Fund programs provided budget information. Because a disproportionate number of programs reporting budgets received their operational funding from the Health Fund (80 percent), its grantmaking practices

³ See Appendix B for a list of funders.

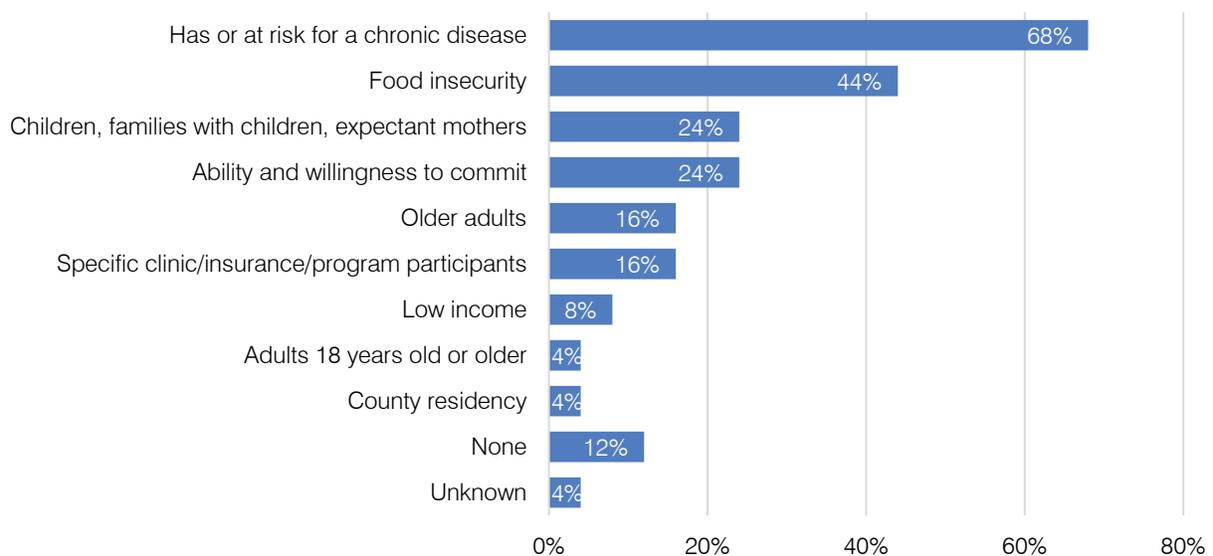
⁴ A standardized pre/post program evaluation tool for adults participating in a Produce Prescription Program is available through MIFMA. Contact office@mifma.org for more information.

and award amounts have significant bearing on program implementation and resulting findings. For example, many programs cost up to \$500,000 total over three years, corresponding to the maximum Health Fund grant award and performance period. Health Fund policies and practices—including request for proposal requirements and grant management—also influence program design, implementation, and evaluation to some degree that cannot be determined here. Finally, because programs funded by the Health Fund represented 80 percent of all reported program budgets, they are also overrepresented in statewide average calculations, such as cost per participant relative to other types of Produce Prescription Programs statewide. The degree to which these data would differ, if at all, with inclusion of additional program budgets is uncertain.

Program Eligibility

Most of MIFMA’s partner Produce Prescription Programs had some eligibility criteria; however, three were open to anyone who wanted to participate. Around two-thirds of the programs (68 percent) required participants to have or be at risk for a chronic disease, such as obesity, diabetes, heart disease, or hypertension (Exhibit 3). Nearly half (44 percent) required participants to be food insecure—that is, to have limited or uncertain access to adequate food. Nearly one-quarter of programs (24 percent) required participants to be able and willing to commit to program participation, and around one-quarter were targeted toward children, families, and/or expectant mothers. Additionally, 16 percent of programs required participants to be older adults, and 16 percent required that participants be a patient of a specific clinic or program or have a certain type of insurance. Other programs had specific income, age, or residency requirements for eligibility. The three programs that did not have program eligibility requirements did give preference to participants who had low income. In addition, one gave preference to participants with a chronic disease, and another gave preference to those experiencing food insecurity.

EXHIBIT 3. Program Eligibility Requirements



N = 25

Note: Categories total more than 100 percent because programs could have multiple eligibility requirements.

Source: Data provided by MIFMA and analyzed by PSC.

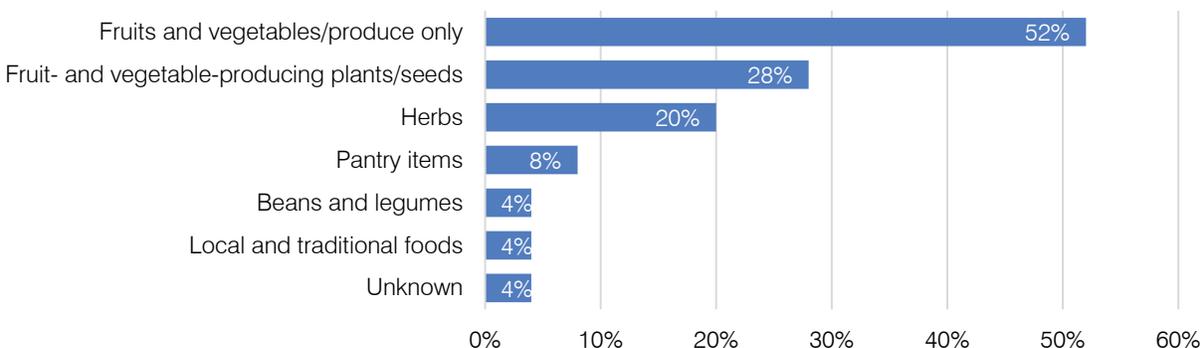
Prescription Description

MIFMA gathered information on allowable prescription purchases, the value of the prescription, and the location at which each program's prescription could be redeemed.

Purchases

All of the programs with known prescription use allowed participants to purchase produce with their program funds. Over half of programs (52 percent) *only* allowed the prescription to be used to purchase these items. More than one quarter (28 percent) allowed purchase of fruit- and vegetable-producing plants or seeds, and 20 percent allowed for the purchase of herbs (Exhibit 4). Two programs allowed the prescription to be used on pantry items. One program specified that the prescription could be used on any local and traditional foods, and another required the purchased produce to be Michigan grown.⁵ Another program allowed the purchase of dried or canned beans and legumes. While many programs allowed for the purchase of frozen, canned, or dried fruits and vegetables, 12 of the programs required the purchase of fresh fruits and vegetables.

EXHIBIT 4. Prescription Use



N = 25

Note: Categories total more than 100 percent because program prescription use could fall into more than one category.

Source: Data provided by MIFMA and analyzed by PSC.

Value and Distribution

The value of a single produce prescription voucher, the frequency with which vouchers were distributed, and the total number of vouchers distributed varied from program to program.⁶ The value of single vouchers ranged from \$5 to \$100, with total prescription values ranging from \$30 to \$480 per person. The average amount of a single prescription voucher was \$24, and the average per-person total prescription value was \$136 (Exhibit 5). The number of vouchers distributed by each program ranged from one to 16 per participant.

⁵ Local and traditional food for the [Bay Mills Indian Community](#) in Brimley, Michigan.

⁶ Not all programs distribute a physical voucher. "Voucher" is used here as a universal term to represent each unit of distribution for the financial incentive.

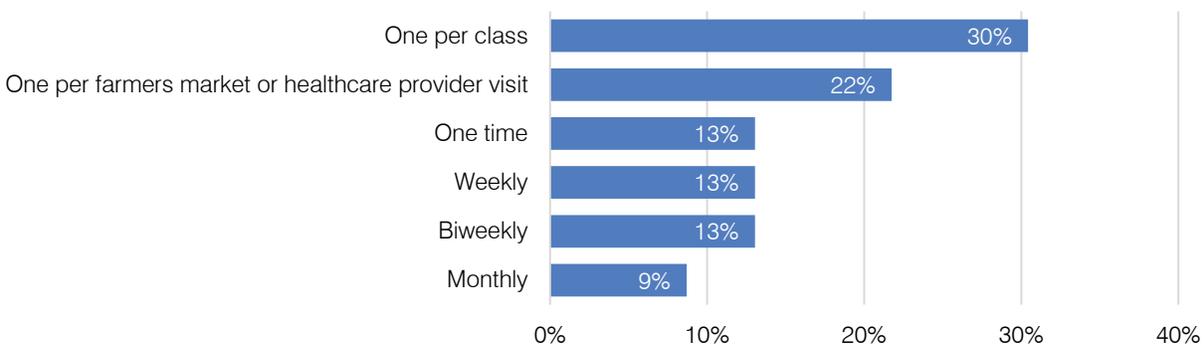
EXHIBIT 5. Prescription Value and Distribution

	Average	Median	Range
Single voucher amount (N = 22)	\$24	\$15	\$5–\$100
Total voucher amount (N = 19)	\$136	\$100	\$30–\$480
Number of vouchers issued (N = 19)	7	6	1–16

Note: Some programs provided different values for different years of programming. In those cases, the data from the most recent year was used in the calculation of average, median, and range.
Source: Data provided by MIFMA and analyzed by PSC.

Some programs included educational sessions for program enrollees, and 30 percent of programs distributed vouchers based on class attendance. More than 20 percent distributed vouchers on a per farmers market or healthcare provider visit basis (22 percent), while others distributed them on a weekly, biweekly, monthly, or one-time basis (Exhibit 6). During COVID-19, some of these programs decreased the number of total visits required which, in effect, increased the dollar value of each individual voucher. The duration of the programs ranged from one day (a single distribution) to six months. Two programs provided food boxes in lieu of vouchers to purchase produce, and one other program provided both a voucher and a food box. Two other programs switched from providing vouchers to delivering food boxes due to COVID-19 challenges. Additionally, one program’s voucher distribution varied based on the needs and program design of each participating partner organization.

EXHIBIT 6. Frequency of Voucher Distribution



N = 23
Source: Data provided by MIFMA and analyzed by PSC.

Redemption

Amount and Rate

Just over half of the programs provided data on the annual voucher redemption amount. The amount ranged from \$3,000 to \$23,516, with an average annual redemption amount of \$9,042 (Exhibit 7). Only three programs provided redemption rate data, meaning, of the vouchers distributed, how many were actually used to purchase produce. The redemption rates of the three programs reporting this data ranged from 22 percent to 91 percent, with an average of 58 percent.

EXHIBIT 7. Annual Redemption Amount and Rate

	Average	Median	Range
Annual redemption amount (N = 13)	\$9,042	\$7,450	\$3,000–\$23,516
Annual redemption rate (N = 3)	58%	61%	22%–91%

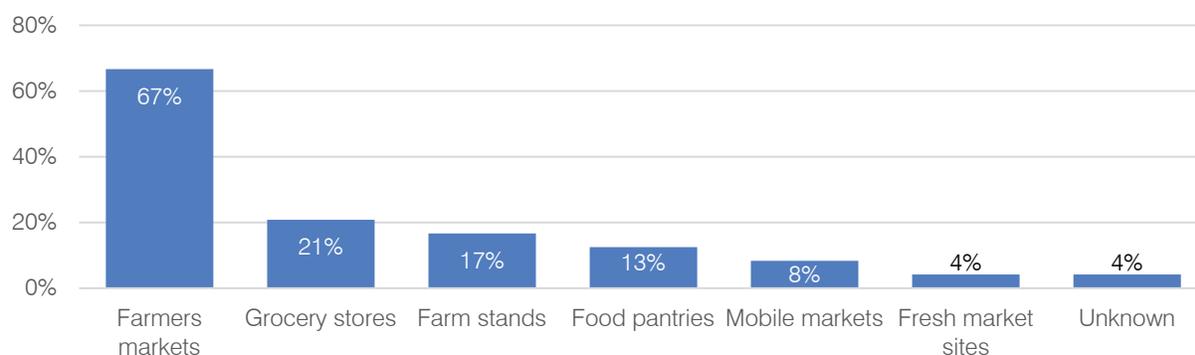
Note: Some programs provided different values for different years of programming. In those cases, the data from the most recent year was used in the calculation of average, median, and range.

Source: Data provided by MIFMA and analyzed by PSC.

Site

Over two-thirds (67 percent) of the Produce Prescription Programs issued vouchers that could be redeemed at a farmers market, with 21 percent of programs allowing voucher redemption at grocery stores (Exhibit 8). Other redemption sites included farm stands, food pantries, mobile markets, and fresh market sites (retail food startups offering local produce).

EXHIBIT 8. Redemption Sites



N = 24

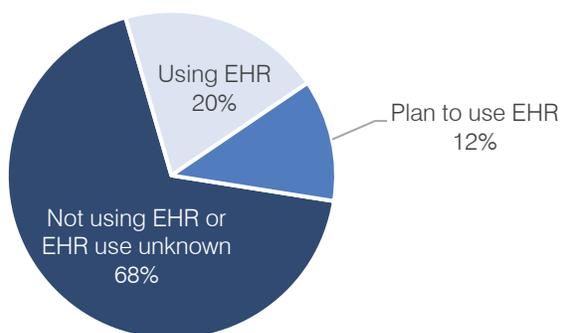
Note: Categories total more than 100 percent because programs could allow voucher redemption at multiple site types.

Source: Data provided by MIFMA and analyzed by PSC.

Electronic Health Record Use

Around one-third (32 percent) of the Produce Prescription Programs use or plan to use electronic health records (EHR) in their program (Exhibit 9). Three of the programs use or plan to use EHRs for participant screening and/or referral purposes; three of the programs use or plan to use EHRs to track metrics such as blood pressure, glycosylated hemoglobin (A1c)—a measure of the amount of glucose in the blood used to detect and help manage diabetes, and weight/body mass index to compare to results at the end of the program; one program uses EHRs to track monthly produce prescription distribution rates among patients; and one program uses EHRs to collect information on participants' health conditions and any food needs, other social assistance, or health education they have received during the intervention period.

EXHIBIT 9. Use of EHR



N = 25

Source: Data provided by MIFMA and analyzed by PSC.

Participation

Most programs also provided some form of participant data, although this data was reported differently across programs (e.g., number of people or households receiving vouchers, number of patients enrolled in educational components, number of patients completing a minimum number of program sessions or all sessions, etc.). Any individual who enrolled in or received vouchers (or voucher substitutes, e.g., food boxes) through a program was deemed a participant for the purposes of this analysis. They did not have to complete the prescribed dose and sequence for a given intervention. Many programs also (or only) reported the number of vouchers distributed or redeemed. Both numbers represent potential duplication (multiple vouchers per individual) and were not used as a proxy for participation.

Individual Participation

Annual participation varied significantly each year, most notably in 2021 during the early months of the novel coronavirus pandemic (Exhibit 10). This drop in participation was expected, both due to public health measures affecting food retailers (e.g., business closures and mandatory shelter-in-place orders) and also due to capacity limitations of health systems and public health organizations operating these programs who were also tasked with responding to pandemic surges. Participation rebounded the following year. Over the course of five years, the number of participants per program ranged from ten to 1,837, with an average of 245 and a median of 100 (Exhibit 10).

EXHIBIT 10. Annual Program Participation

Year(s)	Participants per Program			Total Reported Participants (Statewide)
	Average	Median	Range	
2017	279	90	32–1,345	2,513
2018	291	103	12–1,662	3,198
2019	229	93	13–1,227	2,981
2020*	181	100	15–595	2,175
2021*	257	91	10–1,837	3,088

Year(s)	Participants per Program			Total Reported Participants (Statewide)
	Average	Median	Range	
2017–2021	245	100	10–1,837	N/A

N = 22

Note: *Novel coronavirus pandemic (COVID-19)

Source: Data provided by MIFMA and analyzed by PSC.

Program Outcomes

Twenty of the 25 programs (80 percent) reported some type of outcomes. Many of the outcomes were based on participant self-reporting and compared constructs, such as pre- and post-participation fruit and vegetable consumption, knowledge around safely preparing and storing fruits and vegetables, and changes in feelings of overall health. Many participants reported increased knowledge of nutrition, increased fruit and vegetable consumption, improved eating habits, an increase in knowledge and skills to prepare and store fruits and vegetables, and an improved sense of overall health. Some programs also collected health information before and after program participation, demonstrating health improvement among participants after completing the program. These improvements included weight loss, improved blood pressure readings, and improved A1c. Some programs also found their Produce Prescription Program was positively associated with farmers' market shopping. It is unclear based on current programs' evaluation designs to what degree these reported changes may be causally attributed to the Produce Prescription Program interventions. Since programs did not use a standardized tool to measure these outcomes, findings could not be aggregated at this time.

Cost Analysis

Annual Produce Prescription Program cost per participant ranged from \$64 to \$4,533, with an annual average of \$759 per participant (Exhibit 11).

EXHIBIT 11. Annual Budgeted Program Cost per Participant (2017–2021)

	Average	Median	Range
Cost per participant	\$759	\$323	\$64–\$4,533

Note: Based on 18 data observations from 11 programs that reported both program budget and actual participation data in any year between 2017 and 2021.

Source: Data provided by MIFMA and analyzed by PSC.

The annual average cost per participant for Michigan Produce Prescription Programs was high by comparison to other programs seeking similar outcomes by different means, e.g., 6.9 times the national average cost per program participant in Supplemental Nutrition Assistance Program Nutrition Education (SNAP-Ed), which was \$110.79 in 2018.⁷ However, it is important to note, first, that programs such as SNAP-Ed have operated far longer and do not have the higher costs associated with most new programs, including Produce Prescription Programs. Second, SNAP-Ed does not include direct incentive payments

⁷ PSC data analysis of 2018 U.S. Department of Agriculture Food and Nutrition Services SNAP-Ed [funding allocations](#) and [program participation data](#).

(vouchers) to program participants, a program cost (with commensurate benefits) that increases Produce Prescription Programs’ average cost per participant by comparison. Lastly, it is also important to reiterate that reported Produce Prescription Program participation was relatively low across Michigan and declined for some programs during—and as a result of—COVID-19, contributing to lower total participation and higher per-participant costs.

Under ideal circumstances, this cost per participant should also be benchmarked against more similar programs, e.g., Gus Schumacher Nutrition Incentive Program (GUSNIP)–funded Produce Prescription Programs and other nutrition incentive interventions. Although the United States Department of Agriculture and the Nutrition Incentive Hub are attempting to track individual participant counts for GUSNIP-funded Produce Prescription Programs, sufficient data are not available at this time to determine a comparable national benchmark cost per participant.⁸

Expenditure Analysis

Nine programs provided expenditure data; however, they did not all categorize expenses in the same manner, making it difficult to draw conclusions from the data. Exhibit 12 illustrates the number of programs that provided data in each of 11 different categories. All but one program provided expenditure data for personnel that included salaries and fringe benefits, and all nine programs provided expenditures in supplies category. Five programs provided expenditure data on program incentives.

EXHIBIT 12. Program Expenditure Categories

Program	Supplies	Personnel	Other	Incentive	Contractual	Indirect	Evaluation	Travel	Education	Marketing	Administration
A	*	*	*		*	*	*	*			
B	*	*	*		*	*		*			
C	*	*		*			*		*	*	
D	*	*	*	*	*			*			
E	*	*	*			*	*				
F	*	*		*	*	*					
G	*			*					*	*	*
H	*	*	*	*							
I	*	*	*								
	9	8	6	5	4	4	3	3	2	2	1

Source: Data provided by MIFMA and analyzed by PSC.

⁸ Findings for years one and two of the GUSNIP training, technical assistance, evaluation, and information center can be found at <https://www.nutritionincentivehub.org/news-events/news/gusnip-year-1-impact-findings-releasedgus> and <https://www.nutritionincentivehub.org/news-events/news/improving-community-nutrition-gusnip-year-2-impact-findings-report-released>.

The largest expenditure category was personnel costs, with an average of 47 percent of program dollars being spent on salaries, fringe benefits, and administrative costs (Exhibit 13). An average of 17 percent of expenditures went toward supplies, and an average of 11 percent of expenditures went toward program incentives.

EXHIBIT 13. Percentage of Total Program Expenditures by Category

Category	Average (%)	Range (%)
Personnel/administration	47	16–69
Supplies	17	1–69
Incentives	11	0–42
Other	8	0–43
Education/instruction	7	0–51
Contractual	4	0–20
Indirect	3	0–9
Travel	1	0–9
Evaluation	1	0–5
Marketing	0	0–2

Note: Based on data from nine programs that provided some expenditure data. Categories were not necessarily consistent across programs.

Source: Data provided by MIFMA and analyzed by PSC.

Conclusion

As demonstrated by this analysis and the long and growing list of investors in these programs, Michigan boasts a diverse array of Produce Prescription Programs, generating promising behavioral and health outcomes at affordable prices compared to the costs of the chronic diseases they are intended to prevent.⁹ While data is limited, increased program reach; additional data; and, in particular, statewide use of shared data tools will increase the strength and generalizability of these data to support deeper inferences. In the future, similar studies will be instrumental to shaping and sharing the story of this important work.

⁹ Additional information on this topic is available in MIFMA’s report, [Produce Prescription Programs: Health Impacts of Fruit and Vegetable Consumption](#).

Appendix A: Michigan Produce Prescription Programs

Project Lead	Program Name
Access of West Michigan	Refresh Now
Alcona Health Center	Northeast Michigan Prescription for Health
Bay Mills Health Center	Bay Mills Prescription for Health (Diabetes Coupons)
Beaumont Health	Prescription for Health
Care Free Medical	Capital Area Prescription for Health
Community enCompass	Muskegon Prescribes Food for Health
District Health Department #10	Prescription for Health
Eastern Market	Fresh Prescription
Eaton Rapids Medical Center	Prescription for Health
Food Bank Council of Michigan	Fresh Food Pharmacy Program
Groundwork Center for Resilient Communities	Prescriptions for Produce
Hurley Medical Center	Food FARMacy
Inter-Tribal Council of Michigan	Native American Nutrition Prescription Program
Live Well Gratiot	Prescription for Health
Livingston County Health Department	Prescription for Health
Michigan State University-Hurley Children's Hospital Pediatric Public Health Initiative	Fruit and Vegetable Prescription Program
MyMichigan Health (formerly MidMichigan Health) and Michigan State University Extension	Prescription for Health
Midland Business Alliance and MSU Extension	Prescription for Health
Oakland University	Prescription for a Healthy Oakland
Ottawa County Department of Public Health	Prescription for Health
ProMedica Charles and Virginia Hickman Hospital	Veggie Mobile Voucher
Shape Up North of Munson Healthcare	Pediatric Fruit and Vegetable Prescription Program
Shape Up North of Munson Healthcare	Fruit and Vegetable Prescription Program
Upper Great Lakes Family Health Center—Houghton	Prescription for Health
Washtenaw County Health Department	Prescription for Health

Appendix B: Michigan Produce Prescription Program Funders

- Alcona Health Center
- Allen Foundation
- Amway Corporation
- Beaumont Health
- Blue Cross Blue Shield of Michigan Foundation
- Coverys
- Detroit Community Development Block Grant
- District Health Department #10
- Doug & Maria DeVos Foundation
- Fresh Prescription Partner Sites
- Gratiot-Isabella Regional Education Service District
- Indian Health Service
- Local donors
- Michigan Department of Health and Human Services
- Michigan Health Endowment Fund
- MyMichigan Health (formerly MidMichigan Health)
- Midwest Hunger and Health/WhyHunger
- National Institute of Child Health and Human Development
- Ottawa County Department of Public Health
- Perrigo Company Charitable Foundation
- Portage Health Foundation
- ProMedica Charles and Virginia Hickman Hospital
- Rite Aid Foundation
- Saint Joseph Mercy Health System
- Saint Joseph Mercy Livingston Health System
- Spectrum Health Healthier Communities



**PUBLIC SECTOR
CONSULTANTS**

230 N. Washington Square
Suite 300
Lansing, MI 48933