Feasibility of using rideshare transportation to reduce barriers to participating in a clinic-based food insecurity intervention

Betty T. Izumi, Lourdes A. Gonzalez, Sylvia Ness, Lynne C. Messer

Betty T. Izumi, Ph.D., MPH, RD[1], Lourdes A. Gonzalez, MPH[1], Sylvia Ness, MPH[2], and Lynne C. Messer, Ph.D.[1]

(1) Oregon Health & Science University-Portland State University School of Public Health, Portland, OR, (2) Multnomah County Health Department, Portland, OR

Corresponding author:
Betty Izumi, Ph.D., MPH, RD
PSU Mail code: SCH
1805 SW 4th Avenue
Portland, OR 97201
Izumibet@pdx.edu

Submitted 15 September 2021, revised 2 June 2022, accepted 6 July 2022.

Izumi, B.T., Gonzalez, L.A., Ness, S., Messer, L.C. (2022) Feasibility of using rideshare transportation to reduce barriers to participating in a clinic-based food insecurity intervention. *Progress in Community Health Partnerships*. (Forthcoming.) 15 August 2022.

ABSTRACT

Background

Few clinic-based food insecurity interventions address transportation barriers to utilizing food resources.

Objectives

We assessed the feasibility of using free rideshare-based transportation to reduce barriers to participating in an ongoing clinic-based food insecurity intervention.

Methods

Our multi-methods pilot study used patient surveys (n=155), focus groups with clinic and program staff (n=10), and rideshare usage data.

Results

Of the 95 (61.2%) survey respondents who reported transportation barriers, only 34 (21.9%) used rideshare. More than 80% of rideshare users rated their experience as "good" or "excellent." Clinic and program staff reported that the service allowed patients a greater sense of control over their time and health and emphasized the need for staffing and program-level infrastructure.

Conclusion

Free rideshare may address transportation barriers for some patients but multiple options for support and adjustments to how we offer transportation solutions are needed to successfully meet the needs of all program participants experiencing transportation barriers.

KEYWORDS: Transportation, Food Insecurity, Rideshare, Community Health Workers, Focus Groups

Introduction

Food insecurity is associated with poor diet quality and negative health outcomes.[1] Recent studies have documented a high prevalence of food insecurity among safety-net clinic patients.[2-3] Given its adverse health impacts, health systems across the nation are now screening for food insecurity among patients and attempting to address issues related to food access.[4] Clinic-based interventions to reduce food insecurity typically fall into the following categories: referrals to food assistance (e.g., food bank), helping patients complete SNAP or other benefit applications, and providing patients with produce vouchers that can be redeemed at farmers' markets.[5] Although transportation is a critical social determinant of health, [6] few clinic-based food insecurity interventions address transportation barriers that may prevent patients from accessing such food resources.

The purpose of this pilot study was to explore the feasibility of using rideshare to reduce barriers to participating in CSA Partnerships for Health, a seasonal, clinic-based food security project that connects community supported agriculture (CSA) farms with safety-net clinics during the harvest season.[7] Findings from our outcome evaluation conducted in 2017 showed that CSA Partnerships for Health has a positive effect on dietary behaviors, food insecurity, and overall health,[7] however, the dropout rate was 47%. One of the primary reasons that patients stated for dropping out of the program was lack of reliable transportation to get to and from their clinics where they pick up their weekly produce shares.

A small number of studies have used free rideshare-based transportation (herein referred to as rideshare) provided by companies such as Uber and Lyft to address transportation barriers

related to accessing healthcare services, with mixed results on the effect on missed appointment rates.[8-10] Chaiyachati et al. (2018) reported that Medicaid beneficiaries offered rideshare to follow-up appointments with their primary care physicians in a pilot study experienced a significant improvement in show rates. Later, in a prospective clinical trial by the same authors, the missed primary care appointment rate was not significantly different between patients offered rideshare compared to those who were not.[10] Non-significant results in missed MRI appointment rates before and after implementation of a rideshare program were also reported by Whorms et al. (2020). Uptake of rideshare was low across all three studies; comfort with technology, limited interest in ridesharing, and communication barriers were cited as potential reasons. [8-10]

In 2019, our partnership submitted a grant application to the Uber NW Community Impact Initiative using the literature[9,10] and findings from our outcome study[7] as the basis for our proposal and received $8,000 in rideshare credits to provide patients with free rides to pick up their produce. We later received a small internal grant from Portland State University to assess the feasibility of this strategy to address transportation barriers to participating in CSA Partnerships for Health. In this article, we describe the extent to which patients experienced transportation barriers, explore the acceptability of the rideshare service, and assess the practicality of offering it as a component of CSA Partnerships for Health. We also share lessons learned as it relates to the community-based participatory research (CBPR) process. CBPR is a partnership approach to research that equitably involves, for example, representatives from local organizations or institutions, members of the community, and researchers in all aspects of the research process.[11] CBPR is guided by key principles including building on strengths and

resources within the community, promoting co-learning, and engaging in a cyclical and iterative process.[11]

Project and Partnership

CSA Partnership for Health is the work of a CBPR partnership that involves health clinics, farms, businesses, and academic institutions (see Acknowledgements for a list of partners). CSA is a direct-to-consumer model in which participants commit to purchasing from a farmer for an entire harvest season by paying upfront or signing a contract for a share of produce to pick up weekly at a set location. Some programs reduce financial barriers to CSA participation by offering payment plans, allowing their members to pay for their share using SNAP benefits, or providing subsidies.[7,12-18]

CSA Partnerships for Health was created in 2014 by the Multnomah County Health Center's Patient Self-Management Collaborative and Zenger Farm, a nonprofit urban farm, in response to an identified lack of access to fruits and vegetables as a major barrier for patients in managing their chronic diseases. A year later, Portland State University was recruited to support a pilot study of CSA Partnerships for Health with 25 patients at one of the county's community health centers.[16] The program has been offered annually since then and has grown to include eight clinics and four farm partners operating at five sites.

Patients are recruited to take part in CSA Partnerships for Health primarily by community health workers employed at each of the participating clinics. Community health workers are trusted members of the community and/or have a deep understanding of the community and serve as a

liaison between patients and the healthcare system.[19] The cost to participate in the program is about $20 per month (payable using cash or SNAP benefits) for a produce share valued at approximately $100. The length of the program varies by site and ranges from 18 to 22 weeks with start and end dates determined by farmer partners. During the harvest season, patients pick up their weekly produce shares at their clinics. The pickups are staffed by farmers, community health workers, and program interns who answer questions about the produce and engage patients in conversation. Additionally, members receive weekly newsletters containing recipes for the produce in their shares and skill sheets with written and pictorial instructions for preparing, preserving, and storing vegetables. The newsletter is available in English and Spanish. Throughout the harvest season, program staff also conduct cooking demonstrations and tastings of lesser-known vegetables.

CSA Partnerships for Health is led by a team that includes representatives from Zenger Farm, the Multnomah County Health Center, OHSU Family Medicine at Richmond, and Portland State University. Zenger Farm is the fiscal sponsor for CSA Partnerships for Health. The organization also employs a program manager, provides produce shares, and serves as the liaison between the leadership team and farm partners. The program manager supervises interns who provide farmers and community health workers with support during weekly pickups. The Multnomah County Health Center oversees implementation of CSA Partnerships for Health for county health center patients and serves as the liaison between the leadership team and community health workers employed by the county who recruit patients and support their participation in the program. OHSU Family Medicine at Richmond, a Federally Qualified Health Center, joined the partnership in 2016 and oversees program implementation for their patients and serves as the

liaison between the leadership team and their clinic staff, including a community health worker. Portland State University oversees evaluation activities for CSA Partnerships for Health.

Since 2015, the leadership team has met at least monthly to plan program activities, ensure delivery of program outputs and achievement of program outcomes, and troubleshoot challenges. The leadership team makes all program planning, implementation, and evaluation decisions through collaboration (i.e., interactive discussion engaging all leadership team members) and consensus and the dissemination of program results adhere to guidelines established by the partnership. Due to limited capacity of community health workers to engage in leadership team meetings, representatives from the Multnomah County Health Center and OHSU Family Medicine at Richmond actively engage their community health workers in decision making processes during already scheduled clinic meetings. The current pilot study was designed by the leadership team and community health workers.

Rideshare Intervention

The $8,000 in rideshare credits provided by the Uber Northwest Community Impact Initiative were shared among four of five CSA Partnerships for Health pickup sites. (One clinic did not offer this service because their patients lived on-site.) Community health workers at the four clinics elected to share the rideshare credits on a first-come, first-served basis due to the varying needs of patients participating in the program.

Patients learned about the rideshare service at CSA Partnerships for Health information and sign-up sessions held at their clinics in May 2019 or during one-on-one meetings with their

community health workers who were instructed to offer this service to patients with known transportation barriers. Community health workers walked interested patients through the process of receiving and accepting rides, which is described below.

Each week, program staff ordered rides for patients on their produce pickup day using Uber Central, a web-based application that allows individuals to order rides for others.

Once a ride was ordered, the patient received two SMS text messages from Uber. The first message included instructions for how to trigger the ride when ready. The second message included trip details, such as car type, driver name, pickup location, and estimated time of arrival. Once the patient arrived at their pickup site, program staff ordered their ride back home. The patient again received two SMS text messages from Uber, including a message for how to initiate the ride home when ready.

Study Design and Sample

This multi-method pilot study used interviewer-administered surveys with patients, focus groups with clinic and program staff, and rideshare usage data for each site. Survey questions are available in Appendix 1.

During the final pickup in October or November 2019, we recruited English and Spanish-speaking patients (n=221) from the four CSA Partnerships for Health sites offering rideshare to participate in interviewer-administered surveys. The surveys were conducted in English or Spanish in person at the pickup or over the telephone. The survey was developed with

community health works at the participating clinics and assessed patient demographics, whether lack of transportation kept patients from medical appointments, meetings, or obtaining basic necessities,[20] and whether patients used rideshare to get to and from their weekly produce pickup. The survey also asked patients who used the service to rate their experience using a 5-point Likert-type scale from 5=excellent to 1=poor and included space to provide additional feedback. Patients who did not use the service were asked to share their reasons why. Patients who completed the survey received a $5 grocery store gift card.

We used email to recruit clinic staff (n=8), the program manager (n=1), and program interns (n=4) to participate in one of two in-person focus groups to assess the practicality of offering rideshare to CSA Partnerships for Health participants. The focus groups were held in a meeting room at Zenger Farm in November 2019, after the season ended. Focus group questions focused on the logistics of offering the service to patients (e.g., how patients were informed about the rideshare service, how rides were ordered, what resources were used to make the service possible). Additionally, we asked participants the extent to which they thought rideshare helped to meet the transportation needs of patients. The focus groups lasted approximately 90 minutes and were transcribed verbatim by an on-site transcriber.

We used the Uber Central dashboard to determine the total number of rides ordered by each site and the number of patients at each site who used the service.

We used descriptive statistics to describe survey and dashboard data. We used Atlas.ti (version 8.0, Atlas.ti Scientific Software Development GmbH, Berlin, Germany) and applied thematic

analysis[21] to manage and analyze focus group data. Two researchers independently coded the focus group transcripts through an iterative process and created data displays to determine themes within and across the four participating sites. Focus group findings were presented to the leadership team, community health workers, the program manager, and program interns during a member-checking process to ensure findings resonated with their experiences.

All study procedures were reviewed by the Portland State University Human Research Protection Program and determined exempt.

Results

Of the 221 patients who picked up their produce at the four sites, approximately 70% (n=155) completed the survey. As shown in Table 1, over 45% of survey respondents were aged 51 years or older. Most (52.3%) respondents identified as White, 2.6% as Black, 1.3% as Asian or American Indian/Alaska Native; 40% identified as Other, indicating more than one race or uncertainty about racial identity. Almost 44% of respondents identified as Hispanic or Latino. Approximately 29% of respondents had less than 12 years of education while 34.8% earned a high school diploma or passed the General Educational Development test. Almost half (48.4%) of respondents received benefits through Supplemental Nutrition Assistance Program (SNAP) or the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC). Three-fourths (75.5%) of respondents reported an annual household income of less than $30,000.

Approximately 61% (n=95) of survey respondents reported transportation barriers (i.e., lack of transportation kept them from medical appointments, meetings, work, or from getting things they

need for daily living) (Table 2). Approximately 22% (n=34) of survey respondents reported using the rideshare service to get to and from their weekly produce pickups, including approximately 30% (n=28) of those who previously reported transportation barriers. Most rideshare users rated their experience as good to excellent due to "friendly," "on time," and "reliable" service from their drivers. One respondent shared that her driver was "quick to respond and boom, they got me there." Fair or poor ratings were given when patients had an unpleasant incident with the rideshare driver (e.g., "the experience depended on the driver," "they weren't very friendly or helpful") or had difficulty using the technology. Among the survey respondents who reported transportation barriers and who did not use rideshare (n=67), the reasons for not using this service included: used a private vehicle, unaware that the service was available, walked to and from the pickup site, took public transportation, rode a bicycle, and lacked trust in Uber.

Across the four sites, 48 patients (21.7%) used the rideshare service (Table 3). Site A, had the highest number of users (n=28) while Site C, the site with the shortest program length and the fewest number of program participants, had the lowest (n=3). The number of trips taken across the clinics was highest during July and August after all four clinics started their programs and began to decrease sharply in September, coinciding with the rapidly dwindling supply of rideshare credits (data not shown).

Of the 13 individuals recruited, 10 (77%) participated in the focus groups, including representatives from each of the four sites. Nearly all clinic staff were community health workers. We identified three major themes from the focus groups. First, across all four sites,

focus group participants reported that the rideshare service gave patients who did not own a personal vehicle a sense of control over their time and health. Unlike Ride-to-Care, a non-emergency medical transport service offered to Oregon Medicaid recipients, participants could receive on-demand transportation without having to schedule a ride far in advance and without a standing medical appointment. One community health worker said,

> *With Ride-to-Care, you're not getting anything under four hours in advance. And under four hours is not a guaranteed ride.*

Instead of planning their day around bus, carpool, or Ride-to-Care requirements, patients could use the rideshare service to pick up their produce when convenient. Focus group participants also shared that some patients scheduled appointments with their healthcare providers or picked up their prescription medication before or after picking up their produce shares, thereby enabling them to better manage their health.

Second, focus group participants across all four sites emphasized the need for dedicated personnel to organize rides for patients, teach patients how to navigate the rideshare technology, and troubleshoot problems. In addition to ordering rides for patients, focus group participants communicated patient needs (e.g., booster seat for children, room for a wheelchair) to drivers and provided additional coordination for patients who lived in rural parts of the county or in non-traditional homes (e.g., mobile homes, apartment complexes). Patients who were elderly, who did not own a smartphone or text-message-enabled phone, or who had limited English proficiency also needed help to use the rideshare technology. For example, one focus group participant said,

> *People were having trouble if they were Spanish speakers with understanding the text they were receiving [from Uber] because they were in English. Or understanding the Uber app because their phone is in English. One of our community health workers put together a sheet for people on how to change the language settings on their phone to Spanish so that their Uber app would appear in Spanish.*

At times, program interns received rideshare links on behalf of patients without internet access or text-message compatible phones to communicate the pickup location and time to community health workers who shared the information with patients. Given that coordinating rides and troubleshooting technology barriers required clinic staff to go above and beyond their permissible job duties, focus group participants across the four sites said that program interns or other dedicated personnel were essential for offering the rideshare service.

Third, limited rideshare credits and inconsistent promotion of the service across the sites influenced the program's ability to reduce transportation barriers for patients. While staff at Clinic A actively promoted the service to all of their patients, due to the limited amount of rideshare credits available, staff at clinics B through D only offered the service to patients with a known history of transportation barriers or to those who lived far away from their pickup sites. As one community health worker explained, the limited amount of rideshare credits available contributed to a more targeted approach,

> *I feel like because I knew there was minimal [funds]— we didn't have sufficient [rideshare credit] for everyone — I targeted the folks that I knew lived further and had*

no transportation… Most of the clients lived within a half a mile radius of the clinic so that is the reason why I didn't present it to everybody.

Focus group participants also said that patients were aware that rideshare credits were limited and some patients turned down offers for rides to allow others who needed the service to use it.

Discussion

This pilot study was designed to assess the feasibility of using free rideshare to reduce barriers to participating in CSA Partnerships for Health. Results from our study extend prior limited research [6, 8-10] on using rideshare to address transportation barriers to accessing clinic-based health services. Although we aimed to address known barriers to using rideshare (e.g., low digital literacy, limited English proficiency[8-10]) by engaging community health workers in promoting and implementing the service, uptake of the rideshare service was low; fewer than 30% of survey respondents reporting transportation barriers used the free Uber rides to get to and from their pickup sites. The low uptake of the rideshare service that we observed is consistent with previous studies. [6, 8-10]

There are several reasons why uptake of the rideshare service may have been low. First, using rideshare to provide free transportation to and from program pickups may not be an acceptable strategy for reducing barriers to participating in CSA Partnerships for Health. In addition to the barriers identified in previous studies,[6, 8-10] survey respondents indicated a preference for other modes of transportation (e.g., bus, bicycle). A lack of trust in Uber may also have contributed to the low rideshare uptake. Second, promotion of the rideshare service differed across sites and some patients did not know that it was available. To ensure consistent delivery across sites and

patients, community health workers should be trained to use a script for screening patients for transportation barriers and for promoting this service. Third, the limited supply of rideshare credits influenced how and to whom the service was promoted and may also have deterred some patients with transportation barriers from using the service.

Consistent with previous studies,[10] providing rideshare required program-level resources, including staff — program interns and community health workers — who could support patients to use the technology and tailor rides for patients with diverse needs. The need for dedicated staff to facilitate the service negatively impacts the sustainability and scalability of using rideshare to address transportation barriers to participating in CSA Partnerships for Health. Applying for rideshare credits from Uber also required the partnership to forecast patient transportation needs, which is difficult to do with a high level of accuracy and resulted in too few credits to meet the demand.

Our study has several limitations. First, this was a pilot study carried out with one program. Therefore, our findings may not represent the experiences of patients and clinic and program staff engaged in other food insecurity interventions that may use rideshare to address transportation barriers to accessing food resources. Second, because we received funding for this pilot study after CSA Partnerships for Health began offering the rideshare service, we were not able to collect baseline survey data for patients or track the different ways they traveled to and from their clinics to pick up their produce shares. Future studies should collect these data to better understand patient transportation patterns and contextual factors (e.g., geography, seasonality) as it relates to accessing food resources. Third, we did not collect qualitative data

from survey patients. To better understand the nature of transportation barriers among safety net clinic patients, future studies should explore patient comfort with rideshare services, their preferred modes of transportation, and the reasons why patients who own a vehicle may still experience transportation barriers. Finally, our findings do not reflect the experiences of patients who dropped out of the program, including those who used and did not use the rideshare service. Despite these limitations, there are a number of lessons learned related to the CBPR process that are associated with our study and that may be useful for others. First, the structure of our leadership team, with representation from community and academic partners who have met at least monthly over the past six years, has enabled us to strengthen on-going collaboration among partners and continue sustaining our collective effort to address food insecurity among safety net clinic patients even when funding for evaluating those efforts was limited. The grant from the Uber NW Community Impact Initiative provided a unique opportunity to offer rideshare to patients but it did not include funding to evaluate the effort. Our long-term partnership allowed us to quickly and successfully respond to an internal grant opportunity at Portland State to assess the feasibility of this strategy to address transportation barriers to participating in the program.

Second, CSA Partnerships for Health builds on the strengths and resources within the community by actively engaging community health workers who play a key role in program planning, implementation, evaluation, and dissemination. To date, however, community health worker engagement in decision-making processes has largely occurred through an intermediary. Had community health workers been represented on the leadership team, we may have been able to make systematic mid-course corrections to our rideshare service. Findings from the current study

have helped to build the evidence needed to advocate for community health worker representation on the leadership team, which has led to greater power-sharing among partners.

Third, our partnership is guided by the CBPR principle that the research process is cyclical and iterative. Rather than research generation being an end result, our study findings have been used to make changes to our project in ways that promote the health and wellbeing of the patients we serve. Based on the information about transportation barriers revealed through the current study, our leadership team has committed to screening patients for transportation barriers when they sign up to participate in CSA Partnerships for Health, providing them with a menu of grant- and clinic-funded options (e.g., produce delivery, bus tickets, carpooling, rideshare, other non-emergency medical transport) for traveling to pickup their produce shares, and exploring scalable and sustainable options for addressing transportation barriers to participating in the program.

Conclusion

Addressing food insecurity among safety-net clinic patients is a critical public health issue. Our study suggests that providing free rideshare may address transportation barriers for some patients participating in CSA Partnerships for Health but that additional options may be needed for those who choose not to use this service. Furthermore, adjustments to how we offer rideshare — and other transportation solutions — is required in order to successfully meet the needs of patients. Our study provides an example of a CBPR approach to exploring rideshare as a potential solution to addressing transportation barriers to accessing clinic-based food resources.

Acknowledgments

We thank the patients, clinic, and program staff who participated in this study for their time and insights. We also thank CSA Partnerships for Health for their contributions to the work presented here, including representatives from Zenger Farm, the Multnomah County Health Center, OHSU Family Medicine at Richmond, OHSU-PSU School of Public Health, Kaiser Permanente Rockwood Medical Office, The Wallace Medical Concern, Full Cellar Farm, Bob's Red Mill, Flying Dogheart Farm, 47th Avenue Farm, and Cook with What you Have. Support for the 2019 CSA Partnerships for Health season was provided by Uber Northwest, CareOregon Community Giving, Kaiser Permanente Special Initiative Grants, Providence Health and Services Grants and Sponsorships, USDA National Institution of Food and Agriculture Community Food Project Grant (no. 215-33899-24194/Project Accession no.1006979). This feasibility study was funded by a Portland State University faculty development grant.

References

1. Gundersen C, Ziliak JP. Food Insecurity and Health Outcomes. Health Aff (Millwood). 2015; 34(11):1830-1839.

2. Seligman HK, Jacobs EA, Lopez A, Sarkar U, Tschann J, Fernandez A. Food insecurity and hypoglycemia among safety net patients with diabetes. Arch Intern Med. 2011;171(13):1204-6.

3. Mayer VL, McDonough K, Seligman H, Mitra N, Long JA. Food insecurity, coping strategies and glucose control in low-income patients with diabetes. Public Health Nutr. 2016;19(6):1103-1111.

4. De Marchis EH, Torres JM, Benesch T, Fichtenberg C, Allen IE, Whitaker EM, Gottlieb LM. Interventions addressing food insecurity in health care settings: a systematic review. Ann Fam Med. 2019;17(5):436-447.

5. Lundeen EA, Siegel KR, Calhoun H, Kim SA, Garcia SP, Hoeting NM, et al. Clinical-community partnerships to identify patients with food insecurity and address food needs. Prev Chronic Dis. 2017;14: E113.

6. Solomon E, Wing H, Steiner J, Gottlieb L. Impact of Transportation Interventions on Health Care Outcomes. Medical Care. 2020;58(4): 384-391. doi: 10.1097/MLR.0000000000001292.

7. Izumi BT, Martin A, Garvin T, Higgins Tejera C, Ness S, Pranian K, Lubowicki L. CSA Partnerships for Health: outcome evaluation results from a subsidized community-supported agriculture program to connect safety-net clinic patients with farms to improve dietary behaviors, food security, and overall health. Transl Behav Med. 2020;10(6):1277-1285.

8. Whorms DS, Narayan AK, Pourvaziri A, et al. Analysis of the effects of a patient-centered rideshare program on missed appointments and timeliness for MRI appointments at an academic medical center. J Am Coll Radiol. 2021;18(2):240-247. doi: 10.1016/j.jacr.2020.05.037

9. Chaiyachati KH, Hubbard RA, Yeager A, Mugo B, Lopez S, Asch E, Shi C, Shea JA, Rosin R, Grande D. Association of rideshare-based transportation services and missed primary care Appointments: A Clinical Trial. JAMA Intern Med. 2018. 1;178(3):383-389.

10. Chaiyachati KH, Hubbard RA, Yeager A, Mugo B, Shea JA, Rosin R, Grande D. Rideshare-based medical transportation for Medicaid patients and primary care show rates: A difference-in-difference analysis of a pilot program. J Gen Intern Med. 2018. 33(6):863-868.

11. Israel BA, Schulz AJ, Parker EA, Becker AB. Review of community-based research: assessing partnership approaches to improve public health. Annu Rev Public Health. 1998;19:173-202. Doi: 10.1146/annurev.publhealth.19.1.173.

12. Andreatta S, Rhyne M, Dery N. Lessons learned from advocating CSAs for low-income and food insecure households. South Rural Sociol. 2008;23(1):116–148.

13. Hoffman JA, Agrawal T, Wirth C, et al. Farm to family: Increasing access to affordable fruits and vegetables among urban head start families. J Hunger Environ Nutr. 2012;7(2–3):165–177.

14. Seguin RA, Morgan EH, Hanson KL, et al. Farm Fresh Foods for Healthy Kids (F3HK): An innovative community supported agriculture intervention to prevent childhood obesity in low-income families and strengthen local agricultural economies. BMC Public Health. 2017;17(1):306.

15. Hanson KL, Kolodinsky J, Wang W, Morgan EH, Pitts SBJ, Ammerman AS, Sitaker M, Seguin RA. Adults and children in low-income households that participate in cost-offset community supported agriculture have high fruit and vegetable consumption. Nutrients. 2017; 9(7):726.

16. Rossi JJ, Woods TA, Allen JE IV. Impacts of a community supported agriculture (CSA) voucher program on food lifestyle behaviors: evidence from an employer-sponsored pilot program. Sustainability. 2017; 9(9):1543.

17. Izumi BT, Higgins CE, Baron A, et al. (2018). Feasibility of Using a Community-Supported Agriculture Program to Increase Access to and Intake of Vegetables among Federally Qualified Health Center Patients. J Nutr Educ Behav, 50(3):289-296 e281.

18. Berkowitz SA, O'Neill J, Sayer E, Shahid NN, Petrie M, Schouboe S, Saraceno M, Bellin R. Health center–based community-supported agriculture: an RCT. Am J Prev Med. 2019; 57(6), S55-S64

19. Hartzler AL, Tuzzio L, Hsu C, Wagner EH. Roles of Community Health Workers in primary care. Ann Fam Med 2018; 16:240-245. https://doi.org/10.1370/afm.2208.

20. Silver D, Blustein J, Weitzman BC. Transportation to clinic: findings from a pilot clinic-based survey of low-income suburbanites. J Immigr Minor Health. 2012 ;14(2):350-5.

21. Guest G, MacQueen KM, Namey EE. Applied Thematic Analysis.1st ed. Oaks, CA: SAGE; 2012.

APPENDIX 1

Survey Instrument

1. Did you ever use Uber to get to or from [site] for the weekly vegetable pickup?
    a. Yes [continue to next question]
    b. No [skip to Question 4]
    c. Don't know/Refuse

2. How would you rate your experience using Uber on a scale of 1-5 with 5 being excellent and 1 being poor?
    a. 5 = Excellent
    b. 4 = Very good
    c. 3 = Good
    d. 2 = Fair
    e. 1 = Poor

3. Can you tell me why you rated your experience as [rating]?

4. Can you tell me why you didn't use Uber to get to or from the weekly vegetable pickup?

5.. Has lack of transportation kept you from medical appointments, meetings, work, or from getting things needed for daily living?
    a. Yes, it has kept me from medical appointments or from getting my medications
    b. Yes, it has kept me from non-medical meetings, appointments, work or from getting things that I need
    c. Yes, (a+b) it has kept me from medical appointments, meetings, work, or from getting things that I need
    d. No
    e. Don't know/ Refuse

6. What is your age? _____

7. Are you of Hispanic, Latino, or Spanish origin?
    a. Yes
    b. No
    c. Don't know/Refuse

8. What is your race?
    a. White
    b. Black, African American
    c. American Indian or Alaska Native
    d. Asian
    e. Native Hawaiian
    f. Other

g. Don't know/Refuse

9. What is the highest level of school you have completed?
   a. Less than a high school degree
   b. High school degree or GED
   c. Associate degree or technical certificate
   d. Bachelor's degree
   e. Other
   f. Don't know/Refuse

10. Do you currently receive SNAP (or EBT or Food Stamps) benefits?
   a. Yes
   b. No
   c. Don't know/Refuse

11. During the past year, what was the total combined income for you and the family members you live with?
   a. Less than $10,000
   b. $10,000-$19,999
   c. $20,000-$29,000
   d. More than $30,000
   e. Don't know/Refuse

12. [For participants who complete the survey after the last pick-up] Thank you for participating in the survey. We will be mailing you your $5 grocery store gift card. What is your mailing address?

Focus Group Questionnaire

1. How did you let members know about the option to use Uber to pick up their produce shares?
2. How did you order rides? What steps were involved?
3. How easy or difficult was it to order rides?
4. What resources did you use to order rides?
5. To what extent do you think that offering Uber impacted your workload?
6. To what extent do you think Uber met the transportation needs of our members?
7. To what extent do you think Uber can be integrated into the health clinic beyond the CSA program?

Table 1. Demographic characteristics for CSA Partnerships for Health rideshare survey respondents (N=155)

Demographic characteristics	n (%)
Age	
≤20	1 (0.6)
21-30	5 (3.2)
31-40	33 (21.3)
41-50	44 (28.4)
≥ 51	71 (45.8)
No response	1 (0.6)
Race	
White	81 (52.3)
Black, African American	4 (2.6)
American Indian or Alaska Native	2 (1.3)
Asian	2 (1.3)
Native Hawaiian or Pacific Islander	0
Other	62 (40.0)
Don't Know/Refused	4 (2.6)
Ethnicity	
Hispanic or Latino*	68 (43.9)
Non-Hispanic or Latino	86 (55.5)
Don't Know/Refuse	1 (0.6)
Education	
Less than HS degree	45 (29.0)
HS degree or GED	54 (34.8)
Associates degree or technical certificate	18 (11.6)
Bachelor's Degree	20 (12.9)
Other	17 (11.0)
Don't know/Refused	1 (0.6)
Food Assistance	
SNAP or WIC	75 (48.4)
Don't Know/Refused	1 (0.6)
None	79 (51.0)
Income	
< $10,000	35 (22.6)
$10,000 - $19,999	49 (31.6)
$20,000 - $29,999	33 (21.3)
$30,000	23 (14.8)
Don't know/Refused	15 (9.7)

Table 2. Rideshare usage and experience with lack of transportation among CSA Partnerships for Health rideshare survey respondents (N=155)

Used Uber	**n (%)**
Yes	34 (21.9)
No	120 (77.4)
Don't Know/Refused	1(0.7)
Uber experience rating	
Poor	1 (2.9)
Fair	5 (14.7)
Good	7 (20.6)
Very Good	4 (11.8)
Excellent	17 (50.0)
Lack of transportation	
Yes	95 (61.2)
No	59 (38.1)
Don't Know/Refuse	1 (0.7)

Table 3. Rideshare usage among CSA Partnerships for Health participants, by site (N=201)

Pickup site	Program dates	Program participants, n	Rideshare users, n (%)
A	6/13/19 – 10/24/19	51	28 (58.3)
B	6/11/19 – 11/5/19	70	12 (25.0)
C	7/2/19 – 10//29/19	20	3 (6.3)
D	6/4/19 – 10/29/19	60	5 (10.4)
Total		201	48 (100.0)