

A mixed method evaluation of the University of Missouri Mobile Health Unit Health Screening Project, “Local Public Health Disparities Initiative”



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Introduction

This report details the results of an evaluation from the Center for Health Policy (CHP) of the University of Missouri's Office of Health Outreach, Policy, and Education's (HOPE) project: "The Local Public Health Disparity Initiative." This project resulted from a contract between the Office of HOPE and the Missouri Department of Health and Senior Services (DHSS), supported by Center for Disease Control and Prevention (CDC) funds, with the funding pool managed by the Ozarks Public Health Institute (OPHI) at Missouri State University (MSU). Contracted services entailed screening for COVID-19 comorbidities at events in underserved rural communities in Missouri.

Underserved communities were defined as communities in counties within Missouri highway patrol regions D, G, and E. A needs assessment identified the neediest counties within those regions. Project administrators accomplished services by organizing screening events with local partners and sending a staffed and managed mobile health unit into rural Missouri communities to screen participants for high blood pressure/hypertension and type-II diabetes indicators while providing information on screening results, vaccine referrals (specifically COVID-19 and influenza vaccines), and MO HealthNet (Medicaid) enrollment referrals.

The mobile health unit (MHU) is a University of Missouri School of Medicine program housed and managed by the Shelden Clinical Simulation Center, where specially equipped and branded vehicles are used to deliver services on-the-ground in Missouri and are also used to train medical clinicians and clinical students, on over 100 patient care scenarios necessary to maintain skills, around the state. For this project, the MHU, about as large as a medium-sized moving truck, was staffed with trained project staff who earned qualifications to test HbA1c (blood sugar), blood pressure, and lipid profile (cholesterol). Events were held inside the mobile health

unit while it was parked in a public area or the mobile health unit was used to transport personnel and equipment to health events located in venues identified by local partners, typically public health facilities and similar community gathering spaces. The courses needed to qualify to administer these health services were highly accessible, and courses qualifying others to perform these services were created and shared with local public health agencies (LPHAs) and health services providers to ensure adequate support for events.

The project contract required the delivery of at least 40 events, and 47 events were held. The mobile health unit model was chosen because it has several conceptual advantages. First, a mobile health unit can work in multiple communities across the state over the course of a project. Most of Missouri is rural, so a project working in multiple parts of the state in underserved rural counties requires travel regardless of how project services are delivered. By using the mobile health unit, travel and project services could be combined. Second, through using the mobile health unit, project partners could become aware of the health care training and resources offered through the University of Missouri. A mobile health unit in a community with University of Missouri branding brings awareness and demonstrates that the University can both provide health care services in rural Missouri as well as provide professional development and training resources for local providers. The ability to provide these health services and training resources is crucial for enhancing LPHAs' capacity. In addition to staffing provided by MU project staff, local partners provided staffing support at some events.

The four explicit contractual goals for the project were:

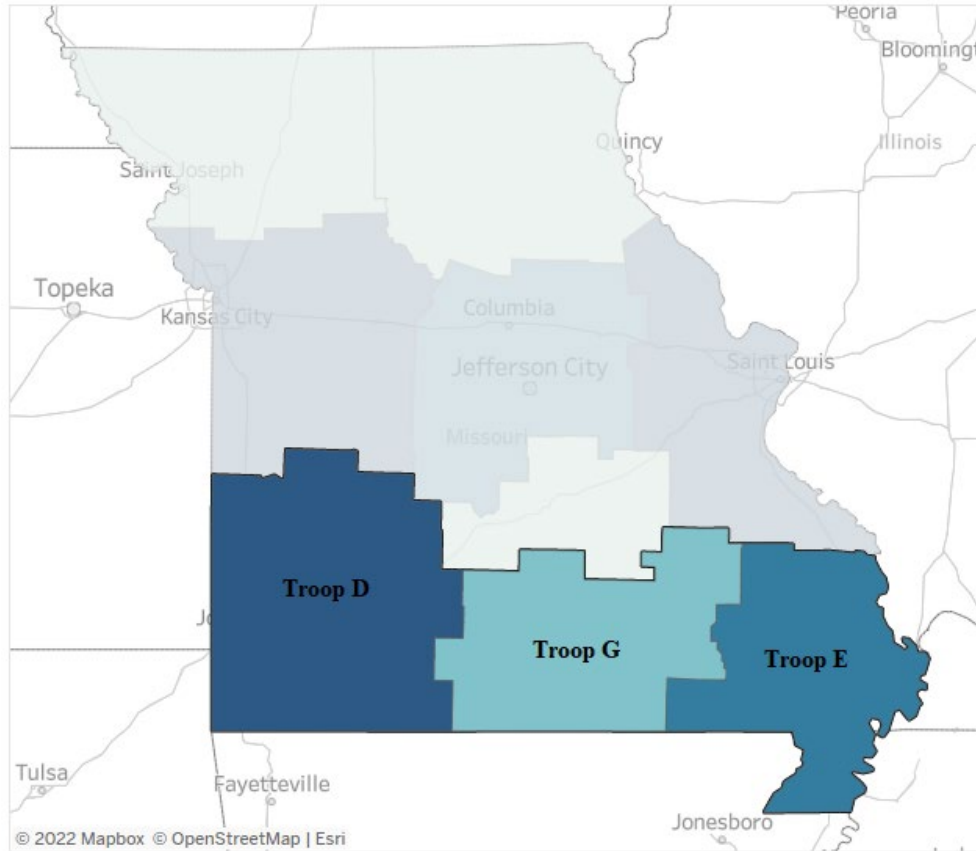
1. Reduce COVID-19 related health disparities.
2. Improve and increase testing and partner tracing among populations at higher risk and that are underserved, including racial and ethnic minority groups and people living in rural communities.

3. Improve state, local, US territorial, and freely associated state health department capacity and services to prevent and control COVID-19 infection (or transmission) among populations at higher risk and that are underserved, including racial and ethnic minority groups and people living in rural communities.
4. Increase local community and cross-sectoral partnerships and their shared capacity.

This report evaluates the achievement of these four goals. It particularly focuses on goal 3 by providing recommendations and lessons learned over the course of the project, to increase the preparedness of others who will hold similar events. Improving capacity to prevent and control COVID-19 is a crucial step to meeting goal 1 of reducing COVID-19 related health disparities and goal 2 of improving and increasing testing and partner tracing. Achieving goal 3 of improving local capacity to prevent and control COVID-19 will require local partners, goal 4. Reducing COVID-19 health disparities and improving and increasing partner tracing requires LPHAs to realize the capacity to do so, and improved capacity can be achieved by relying on partners.

Project Background

This project involved MU leadership and staff working with local partners in high-need counties in Missouri (as determined by a needs assessment), within Missouri Highway Patrol Regions D, G, and E. All 47 events took place in these regions. These administrative regions overlap with state public health regions on a 1:1 basis and can be viewed in figure 1.



Source: American Community Survey (2016-2020)

Figure 1 Missouri Highway Patrol troops/public health regions (Highlighting project regions)

Event photos were provided by project staff. Figures 2 and 3 show event setups at event locations in buildings, and figures 4 and 5 show event setups at outdoors event locations in the mobile health unit. Figures 6 and 7 show the mobile health exterior at outdoors events.



Figure 2 Inside Event setup (1)



Figure 3 Inside event setup (2)

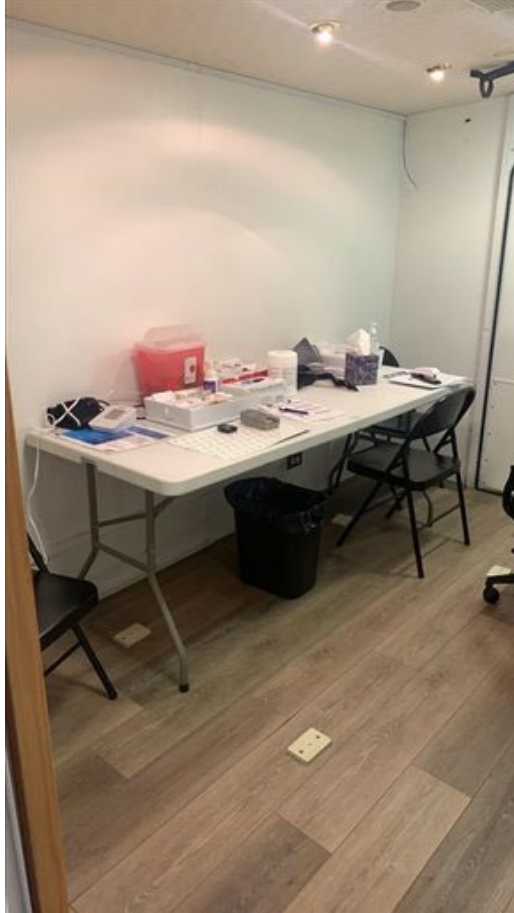


Figure 4 Mobile Health Unit interior setup (1)



Figure 5 Mobile Health Unit interior setup (2)

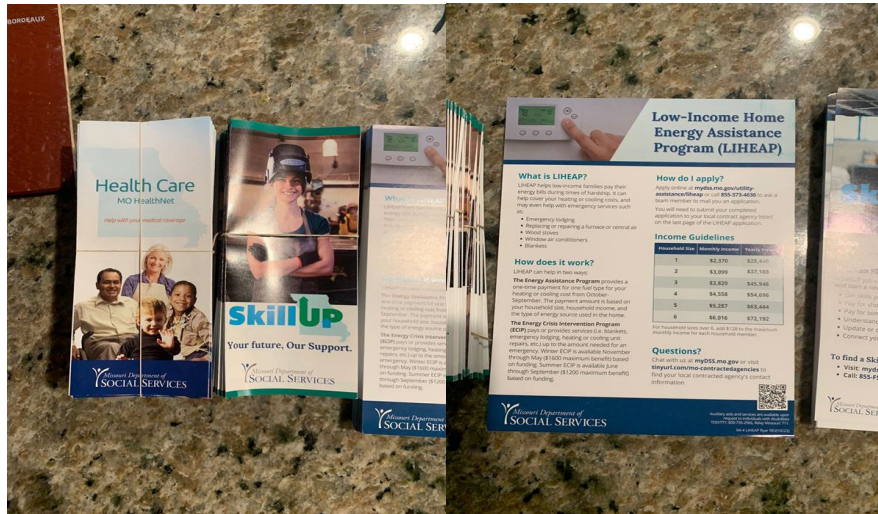


Figure 6 Mobile Health Unit exterior (1)



Figure 7 Mobile Health Unit exterior (2)

Figure 8 Educational Materials



Post-screening follow-up included providing screening-level-appropriate interpretation of results, communication of guidelines related to referral for follow-up care, and access to resource materials related to infectious disease prevention, access to care, and Medicaid expansion eligibility. Participants had their results explained to them, were given a written copy of results including materials on improving health through improving health screening indicators and were given lists of local health and welfare resources. Figure 8 shows an example of educational materials delivered to participants and figure 9 shows a tool used to explain results to participants. Referrals were made directly to local health partners for things like vaccinations or screening result follow-up appointments when available at events. Initially, the project staff made telephone follow-up attempts with participants which proved an unsuccessful strategy because of a lack of post-event participant interest.



Figure 9 Materials to assist in understanding test results

In addition to contracted services, local partner screening staff also delivered additional services at some events. At one event (figure 10), staff additionally delivered vision testing services. Staff also offered vaccine referrals, and in some cases were able to refer participants directly to other event partners for vaccination (figure 11).



Figure 10 Staff assisting in the delivery of vision exams



Figure 11 Texas Co Health Department offering vaccines at screening event

Methods

We analyzed project processes to evaluate delivery and gain information which could prove useful to those holding similar events in the future. We conducted focus groups and interviews of four audiences:

1. **Project staff:** Project staff who directly delivered screening events on site.
2. **Local partners:** Leaders and staff from local public health agencies who were coordinated with for screening events.
3. **Extension collaborators:** Various members of University of Missouri Extension with an affiliation to the mobile health unit.
4. **Medical Director:** Dr. Jack Wells from the MU School of Medicine consulted with the project staff to determine appropriate data to collect about screening participants' test results as well as relevant health and demographic data.

We preferred focus groups but met with individuals for interviews when participants' schedules conflicted to the extent a group discussion could not be accomplished. Question guides varied between audiences and project timing. Additionally, project staff were interviewed twice, once in January 2023 and once after the end of the project as a final look back session. We identified 42 individual local partners from 34 organizations and were able to conduct focus groups with 29 individual local partners from 27 organizations. Local partners consisted of

public health and community service professionals and volunteers from both within and outside health departments.

We also analyze quantitative administrative data from events collected by the project's staff. This includes electronic records of served participants and event records based on physical sign in sheets with contextual information provided by event staff. Additionally, we collected comparative and contextual information related to county and regional demographic, socioeconomic, and population health characteristics. Throughout the report, if figures sum to approximately but not exactly 100% it is due to rounding.

Results

Generally, the qualitative research questions first asked respondents to imagine an ideal community screening event to set an internal mental standard. Then participants were asked about the quality of their event participation, successful moments in their participation, missing resources in their participation, necessary data collection for a screening event, and general advice for screening. These were intended to generate information on what capacity local public health agencies (LPHAs) would need to hold an ideal event in their community or what would need to take place for LPHAs to have the capacity.

Qualitative data requires the use of display procedures for comprehensibility. We aim to preserve participants' voices and words as much as possible within comprehension. Ellipses (...) indicate content omitted for the sake of comprehension. Square brackets ([]) indicate information not actually spoken but added to provide readers with context. We also sometimes remove repeated words, specifically, but not limited to 'ums, uhs, ahs, and ands'.

Findings

We provide findings in seven areas. These areas and their definitions include:

1. **Total Services:** Examining a variety of services delivered.
2. **Non-White Participants Served:** Examining services delivered to non-white participants in comparison to their demographic proportion in service region counties.
3. **Partnerships:** Examining partnerships during health screening events.
4. **Logistics:** Recommendations focusing on the practical experience of planning for and implementing a health screening event.
5. **Capacity and Partnerships:** Recommendations focusing on the need for LPHAs to have partnerships with health organizations to deliver an ideal health screening event.
6. **Promotion:** Promotional activities necessary for an ideal health screening event.
7. **Data Collection:** Necessary data collection for implementing an ideal health screening event.

The report makes no distinction between recommendations more or less realistic or actionable. This is because health screening events were planned and implemented by the University of Missouri in partnership with LPHAs and other public health organizations while being funded by the state of Missouri from federal funds: The combined capacity between those parties leaves few areas of coordinated and planned activities within the category of truly unrealistic. If readers find a recommendation unrealistic for their context, it is advised they do not implement that recommendation and focus on recommendations they believe to be realistic for their context.

Total Services

Event electronic registration records indicate 756 participants received health screening services and nine participants inquired about but did not receive services, for a total of 765 health screening participants. Project staff reported 761 participants based on event registration records.

While these numbers are not identical, their closeness and likely substantial overlap indicates the actual number of participants was about 750-760. At events, participants first signed-in to create physical event records so each participant who received services had an electronic registration record created. The nine participants who did not receive services registered in

advance of the event but did not attend. It is likely some participants did not sign in but had electronic registration records created, and possibly some participants did sign in but did not receive services. Analysis will indicate if it draws on physical or electronic records.

Table 1 below shows the demographics of participants who received health screening services from electronic records. The most common age range was 55-64 (21%), and 430 (57%) participants were aged between 45 and 74. The most common participant race was White/Caucasian, at 615 participants (81%).

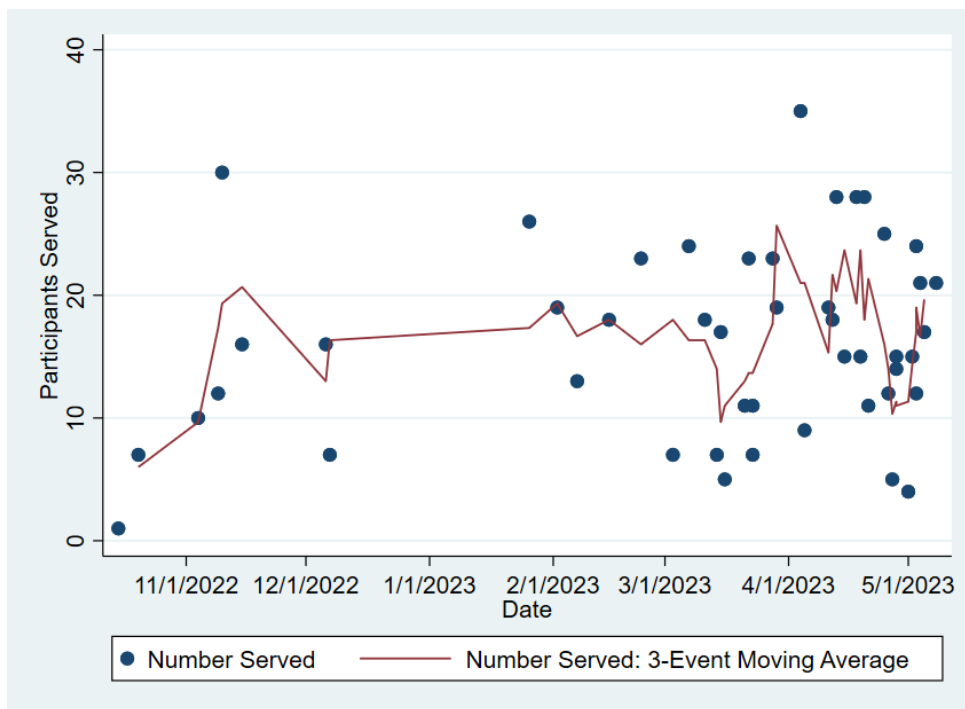
Women received more services than men, with 530 (70%) participants reporting female sex. Cultural stereotypes that frame healthcare as unmasculine may have influenced participation. One local partner noted they target promotional materials to men to help address this gap, for examples using pictures of hunters and fishers receiving health services to communicate those services can be masculine. This does create the risk of making events seem exclusive, so targeted promotion should not be the only promotion to avoid communicating events are exclusive. Additionally, events on different dates could be promoted differently to target different audiences.

Table 1 Screening Participant Characteristics

| Total Participants Receiving Services | | |
|--|---|---|
| Age | 18-24: 21 (3%) | 25-34: 75 (10%) |
| | 35-44: 108 (14%) | 45-54: 119 (16%) |
| | 55-64: 159 (21%) | 65-74: 152 (20%) |
| | 75-84: 94 (12%) | 85+: 26 (3%) |
| | No Records/Prefer not to say: 2 (1%) | |
| Race/Ethnicity | Spanish or Hispanic/Latino: 22 (3%) | White/Caucasian: 615 (81%) |
| | Black/African American: 65 (9%) | American Indian/Native American or Alaskan Native: 12 (2%) |
| | Asian: 12 (2%) | Native Hawaiian/PI: 0 (0%) |
| | Other/Multiracial/Prefer not to Respond: 30 (4%) | |
| Sex | Male: 225 (30%) | Female: 530 (70%) |
| | Prefer not to answer: 1 (<1%) | |

Forty-seven events were held: 25 in region E (53%), 17 in region D (36%), and 5 (11%) in region G. 443 (59%) of participants were in region E, 244 (32%) were in region D, and 69 (9%) were in region G. Figure 12 below shows event participation over time from physical record reports. Each dot represents one event, with the line representing a 3-event moving average of participation. Fewer events were held at the beginning of the project event period with more events held after February 2023. Event attendance stayed fairly constant, with most events having between 10 and 30 participants. Each event resulted in on average 16-17 participants.

Figure 12 Event Participation Over Time



Electronic records show 93 (12%) participants reported not having health insurance. These participants received materials describing MO HealthNet” (Missouri’s Medicaid program) eligibility criteria and the enrollment process. Of these 93, thirty (32%) were in region D, 57 (61%) in region E, and six (6%) were in region G. Using data on county MO HealthNet enrollment³ we compared those screened by the project who reported not being covered by health insurance to enrollment in MO HealthNet to provide a rough estimate of how insurance coverage for screening participants compared to population-level coverage estimates. Using MO HealthNet enrollment data shows Medicaid enrollment in these counties is about 32% (region D: 30%, region E: 35%, region G: 38%), thus, our numbers indicate there is eligibility in these

³ <https://publichealth.wustl.edu/items/missouri-medicaid-enrollment-tracking-dashboard/>; Note that site designers explain that when county-level estimates of enrollment are incorrect that they are consistent overestimates.

counties not being taken advantage of by Missourians. Taking advantage of Medicaid enrollment opportunity is important for population health and for ensuring potential available health care funding flows into regions experiencing health care access challenges.

Table 2 below shows participants receiving the different kinds of screening services at events, comprehensively including blood pressure, total cholesterol (with LDL and HDL components), triglycerides, and A1C levels. Percentages show the overall percentage of that service received in the column’s region. A large majority of screening participants received all services. Appendix A tables show the breakdown of services received by age, sex, and race, with participants receiving specific services consistent with their representation in the overall screening project.

Table 2 Receipt of Services

| | Project | Region D | Region G | Region E |
|-------------------|----------------|-----------------|-----------------|-----------------|
| Blood Pressure | 754 | 244 (32%) | 69 (9%) | 441 (58%) |
| Total Cholesterol | 755 | 243 (32%) | 69 (9%) | 443 (59%) |
| HDL Cholesterol | 754 | 243 (32%) | 69 (9%) | 442 (59%) |
| Triglycerides | 754 | 242 (32%) | 69 (9%) | 443 (59%) |
| LDL Cholesterol | 752 | 241 (32%) | 69 (9%) | 442 (59%) |
| A1C Levels | 748 | 240 (32%) | 68 (9%) | 440 (59%) |

Partners and staff often hypothesized weather was consequential for event participation. To understand how weather influenced the number of participants at a given screening, the table below looks at the average participation from physical event records for events within 10-degree Fahrenheit temperature bands using publicly available weather data⁴ in Table 3. This analysis

⁴ <https://www.ncei.noaa.gov/maps/daily-summaries/>

uses data from weather measurement stations closest to events. The effect of weather on participation should be considered separately from the effect of weather on events, and inclement weather makes travel and screenings more difficult.

Table 3 Average Participation by Temperature Band

| Temperature Band (Degrees Fahrenheit) | Average Attendance | Number of Events |
|--|---------------------------|-------------------------|
| 20-29 | 22.5 | 2 |
| 30-39 | 14.5 | 4 |
| 40-49 | 16.3 | 9 |
| 50-59 | 14.1 | 16 |
| 60+ | 17.9 | 16 |

Examining temperature data seems to show no relationship between average attendance and temperature. We caution against overinterpreting the high attendance of low temperature events as suggesting a causal relationship where lower temperature leads to higher attendance – it is more likely to be an idiosyncratic result of taking the average attendance of only two events. It is likely for participation; weather is something which can usually be organized around by holding events during warmer weather or indoors during colder weather. On the other hand, while weather will not affect participation substantially, it can still damage event planning through travel and equipment.

We examine average event participation by month from physical records. While average participation increased over the beginning of the overall project, it seemed to level out over time. However, the number of events and subsequently the number of total participants served

increased over the course of the project, indicating project managers and staff may have become more skilled at event scheduling and coordination over time.

Table 4 Average Participation by Month

| Month | Average Participants Per Event | Number of Events |
|---------------|--------------------------------|------------------|
| October 2022 | 4 | 2 |
| November 2022 | 17 | 4 |
| December 2022 | 11.5 | 2 |
| January 2023 | 26 | 1 |
| February 2023 | 18.3 | 4 |
| March 2023 | 14.3 | 12 |
| April 2023 | 18.5 | 15 |
| May 2023 | 16.3 | 7 |

The health screening project worked with many kinds of partners, for example the University of Missouri Extension field staff, demonstrating how partnerships can increase event capacity. As part of their own project, MU Extension staff attended some screening events and delivered health-focused surveys to conduct a needs assessment while delivering 18 vaccines with 15 vaccine incentives. This sort of partnership creates synergy, in this case by providing screening results and discussing health topics then providing an opportunity to further explore health topics or receive an incentivized vaccination. One organization can accomplish one set of goals, and multiple organizations can address multiple sets of goals, with all goals contributing to public health.

Project staff held many events in partnership with local health departments. One goal of the project is to improve local health department capacity to prevent and control COVID-19 infection or transmission. Improving local health department capacity can occur through partnerships with organizations that have additional resources and experience. From physical records, events held at health departments on average had 15.25 participants and events held with

other kinds of partners had on average 16.9 participants. Twenty events were held at health department locations and 27 were held at other locations.

Events held at local health departments had lower participation while events drawing on community partnerships had higher participation. By using physical record reporting, it was possible to compare events with identified community partners (18 events) to those without identified community partners (29 events). Events with community partners had on average 17.9 participants and events without community partners had on average 15.1 participants. Initially, the focus of project staff was limited to LPHA partners, but later extended to include local actors, agencies, and coalitions focused more broadly on population health, health equity, and the determinants of health including MU Extension and local Family & Community Trust community partnerships. Project staff made 40 COVID-19 vaccine referrals, 40 influenza vaccine referrals, and 51 other vaccination referrals to 71 unique individuals. The table below shows their distributions throughout service regions. Region E received vaccines disproportionately high to their number of participants and regions G and D received disproportionately fewer.

Table 5 Vaccination Referrals, Total and by Region

| | Project | Region D | Region G | Region E |
|---------------------------------|----------------|-----------------|-----------------|-----------------|
| COVID-19 Vaccination Referral | 40 | 11 (28%) | 3 (8%) | 26 (65%) |
| Influenza Vaccination Referrals | 40 | 8 (20%) | 1 (2%) | 31 (78%) |
| Other Vaccination Referrals | 51 | 10 (20%) | 6 (12%) | 35 (67%) |
| Unique referrals | 71 | 18 (25%) | 7 (10%) | 46 (65%) |

Event participation was somewhat idiosyncratic and did not provide consistent data useful to informing improvement of future event participation. Participation in health screening events in

rural areas should be expected to be low – rural areas have fewer people who are more geographically dispersed than in cities, and both those factors likely influence event participation. Participation in events in these areas may be costly: It may take a great deal of time, effort, and money to reach one additional participant who otherwise would not have been reached. However, if the participant were reached even inefficiently, it may be better than never having reached them. Practical concerns limit how much can be spent to gain one additional participant.

Consistently, holding additional planned out, strategized, promoted events increased the total number of participants. It may be event participation is simply a result of going through the process of planning and conducting events. Ideally, events have the greatest possibility of success when promotion is accomplished in a timely manner and calibrated to local issues and culture, local organizations and their networks are authentic and equal partners, the community is engaged, logistics are organized and confirmed in advance, the MHU is visible in a central location, and staff are situationally-aware and actively engaged in real-time recruitment, participants are more likely to arrive and participate.

Non-White Participants Served

To understand the comparative racial composition of screening event participants, we rely on a disparity index. The disparity index takes the total proportion of a demographic group engaged in an activity and divides it by the total proportion of that demographic group in the population served. This creates a ratio of the demographic groups served to the demographic groups in the geography served.

In this case, we take the proportion of non-white⁵ health screening event participants and divide it by the population of non-white people in Missouri Highway Patrol Regions D, G, and E counties. Participant data is from project electronic records and county reference data is from 2020 Decennial Census redistricting data for total population (Table ID P2). This allows us to compare the proportion of non-Hispanic white people in a geography to the proportion of non-Hispanic white screening participants.

The total proportion of non-white health screening participants was 0.1865. The total proportion of non-white people in project counties per the US Census Bureau annual population estimates is 0.1550. To create the index, we divide 0.1865 by 0.1550 to arrive at about 1.2. This means non-whites received health screening services at a rate of about 1.2 times compared to their population in the geographies in which health screenings occurred, indicating the project helped improve racial equity in health behavior while serving underserved rural populations.

Partnerships Facilitated

The project facilitated numerous partnerships, not all for which data could be captured. Of note, during focus groups many participants were observed using the opportunity to network with one another. For example, one local partner discussed how their organization could contribute to an event in another county. Another example was a spontaneous focus group discussion on how to reduce stigma in local health departments.

Local partners drew on some existing relationships to develop project partners but largely developed new partners over the course of the project. The evaluation identified 178 unique partnerships with 15 organization types made by project staff over the course of the project. They include: 1) academic institutions (17 unique partnerships), 2) community-based and civic

⁵ Including Hispanic as a race not ethnicity to match screening event racial categories.

organizations (14 unique partnerships), 3) faith-based organizations (7 unique partnerships), 4) health care providers (8), 5) health-related organizations (20), 6) local government agencies and community leaders (8), 7) nongovernmental organizations (24), 8) schools/school districts (2), 9) social service providers and organizations (2), 10) tribal organizations (1), 11) state health department (3), 12) local health department (52), 13) community working group (9), 14) private Sector (3), 15) other kinds of organizations (8).

The most common partnership was with local health departments, followed by nongovernmental, typically community service organizations. Local health departments are likely necessary partners in this sort of endeavor, in which there is also a plethora of other kinds of organizations available to partner with. Broad inclusive partnerships are ideal to provide maximum service, and promotion coverage and volume, for health screening events.

Logistics

Focus group participants made numerous logistical suggestions, each of which may be useful for organizations implementing health screening events. In this section, we list recommendations derived from suggestions made during focus groups. It is impossible to consider all logistical requirements in this report or while planning events and some issues will simply have to be overcome when they arise – for example, one local partner reported their screening event unexpectedly did not have a restroom or heating, a situation not considered during planning – but the following considerations were commonly mentioned or particularly insightful.

- **Event co-occurrence:** The success of health screening events may be enhanced when they co-occur with other community events reasonably related to the presence of health screenings. Rural communities have festivals, health fairs, conferences, and gatherings that

draw regional participation from the population of interest for the health screening project. Co-occurring events can expand access to participants and promotion networks. If multiple screening events are held, they should co-occur with a mix of health-related and tangential events. Screening events which co-occur with health-related events, like a community health day, draw on participants who are interested in accessing health services. Screening events that co-occur with events tangential to health have the potential to draw on participants who might otherwise not be exposed to health screening opportunities and/or referral to health services. One local partner suggested pairing a health screening event at a community event unrelated to health directly called Hootin' and Hollarin', a three-day event including vendors, music, square dancing, and crafts. This event is an example of an opportunity to engage the appropriate demographic in an event paced to accommodate the health screening process. Conversely, piloted events early in the grant period revealed a disconnect between interest in participation in screening and local events such as sports or entertainment that require specific timelines and attention.

- **Events and geography:** Rural counties can be geographically large and a health screening event on one end of a rural county may not be accessible to those at the other end of the county. Several local partners noted the importance of travel distance and time for the people they serve. When possible, events should be located near the population they are expected to serve. In the event the local population is too dispersed to serve centrally, more than one event in the same county may be necessary. Similarly, by locating events at or near county borders, more than one county's population can be served. These events can be promoted in multiple counties and communities.

- **Event amenities:** A lack of amenities like heat or restrooms will have negative consequences for the event. In one screening event, project staff had to heat up medical equipment using hand warmers because the equipment did not work in the cold and heating was not available. For the purposes of a successful event, as much knowledge about the event location will need to be ascertained to determine locations' limitations. Both long- and short-term planning for amelioration strategies can be used to anticipate and respond to such challenges.
- **Weather:** Inclement weather presents a challenge to outdoor activities, although not one which seemed to substantially affect participation. Snow and ice present challenges to mobile health screening unit driving and event planning. For example, some health screening equipment will not work in extreme temperature settings, a mobile health unit van is both more difficult to drive in inclement weather, and risk management for high end resources like mobile health units must be balanced with grant period requirements. Events can be planned for times of predicted fair weather with inclement weather periods being used for other tasks like planning and evaluation. Assessing capacity to manage and drive a mobile health unit van can be factored into the hiring process.



Figure 13 An example of inclement weather that impacted an event

- **Volunteers:** While project staff held the responsibility for service delivery, it is also possible to rely on volunteers to deliver other services, to be available for referrals, or to assist in screenings. Training and screening procedures are such that screenings could be accomplished by someone with no prior health service experience. This volunteerism can increase the range and scope of events as well as ensure local communities have the capacity to support health screenings and referrals on an ongoing basis.
- **Privacy:** Screenings take place in rural communities, where many residents are familiar with, and recognizable to, one another. Protecting the privacy of participants' medical information is important. Breachings of privacy have social and psychological implications. Two main concerns were identified for safeguarding privacy during screening events: 1) collect only information necessary to administer screening services, and 2) ensure the screening space provides privacy for participants to verbally provide information without others overhearing.
- **Incentives:** Some local partners pointed out screening participants may have expectations for incentives like money, products, or gift cards. One local partner made it apparent while good health may seem like its own reward, for participants in her service area, perceptions of personal health were not understood that way. One incentive example was to provide farmers' market credit at an event held at a farmers' market. Other incentive suggestions include gift cards to local businesses, health care equipment such as a blood pressure cuff, or entry into a drawing for fishing equipment. A final suggestion included a free food voucher to a nearby food truck: This idea incentivizes people to attend a screening event for food while only providing the voucher after services have been received.

- **Contingencies:** For a centrally coordinated body like the University of Missouri, planning usually happens in a central location while actual screening events are dispersed around the state. This could lead to situations where equipment or personnel failure results in a failed event. Contingencies for failures and backup equipment are important. It is likely over the course of a screening event that screening equipment will break, fail, or malfunction; or personnel will take time off, leave their position, or become separated from their organization.
- **Visibility and foot traffic:** If screening events do not co-occur with other events, visibility and foot traffic may influence the number of participants who arrive to receive services. If an event takes place in an area with low visibility, participants may not be aware of screening events. Health screening events should occur in a location with good foot traffic. While promotion helps make people aware of the event, other participants can also be gained by getting the attention of foot traffic. Areas with high foot traffic may include a grocery store parking lot or a well-attended other event. One local partner suggested attendance at their event was high because it co-occurred with “bingo night” at a local public center (figure 14).



Figure 14 A participant receiving services at an event strategically timed to have high attendance

- **Event purpose:** A clear sense of the purpose of the event provides guiding context. At times, the number of available partnerships and potential resources for screening events can seem overwhelming. Some partnerships and resources may be available but provide little benefit to project goals. Other partnerships and resources may be out of the scope of the reason for the events or may be out of service geographies. Project planning and monitoring of fidelity to the project model helps to identify potential partners and negotiate shared activities.
- **Dialect:** Project materials should use language appropriate for the population expected to view them. Nonwhite ethnic or racial enclave communities live in project's service area. One local partner pointed out their county had a relatively large Spanish-speaking population and had promotional and event materials printed in Spanish language. Others pointed out event promotional materials should be reviewed through a health literacy lens and appropriately targeted to the literacy levels of the intended demographic to be recruited.

- **Client diversity:** Different kinds of participants may have different health concerns.

Demographic characteristics influence individuals' perceptions of both health status and health concerns. For example, screening participants relative risk for the project's targeted chronic conditions vary by age and sex. Clients will approach the opportunity for screening services as well as the results of screening with varied perspectives and reactions in part based on their demographic characteristics. Training for project staff and volunteers should address strategies for identifying and responding to these differences.

- **Follow up:** Few participants perceived a need or value in engaging with project staff after receiving their screening results. While local partners also communicated a similar lack of response to follow-up overtures, this should be an anticipated and is a normal response to a one-off, non-clinical encounter to provide a possible alert to address a potential chronic condition. Project staff and local partners contemplated the lack of post-screening response to be related to screening participants' consistency of resources such as intermittent phone service, however, it's important to be cautious in making assumptions and in being self-aware of potential bias when interpreting non-responses. The follow up with screening participants that did occur was most effective when conducted following screening events with local partners and providers. For example, if a participant needed vaccinations but the screening did not offer them on site, a local partner might schedule a vaccination appointment as follow up. The sooner and closer to the event follow up with participants occurs, the more likely it is a follow up will receive a response.

- **Varying participation goals:** Generally, staff and partners hoped for greater attendance at events. Each event had an ambitious invariant project goal of 40 participants which was not reached. One local partner suggested they had hoped for 30 participants as an event

participation goal. In rural counties with small populations, a small number of participants can still indicate a successful event. When prompted with the challenge of estimating an appropriate number of participants at a health screening event, one local partner with extensive public health event expertise noted: “You take that rural context and you never really expect the numbers to be super high... There are times that we attend events where we see five people, and those five people that we see, we were able to give them great information, or in turn schedule an appointment. But then there may be an event where we see 500 people, and we don't schedule one, [not] one patient at all.” Ideal event participation would be such that the entirety of event resources (including staff time and attention) would be entirely consumed for each moment of the event, or as one local partner said, “Ideally we would use all of our resources for the whole time, you know, being able to service all [attending participants] too.” This is an unrealistic goal for any health screening project to achieve but a good idealistic benchmark. In an area with few people, participation can be expected to be low. Without tailoring goals to context, it is impossible to know if participation was influenced more by project factors or the population size and distribution across the geography. Project staff can develop reasonable expectations and estimates of screening event participation by building local partnerships with event experience, grounding strategic planning in health screening planning and evaluation resources, and through adopting evidence-based strategies related to planning, promoting, and tracking event expectations and outcomes.

- **Relationships and partnerships:** Relationships and partnerships are vital for a successful community health screening event, so much so we devote a full section to partnerships. However, partnerships are also a logistical concern. Without strong trusting partnerships

between those involved in planning and executing screening events, local partners who participated in the project evaluation focus groups indicated an expectation of lower event effectiveness. Those partnerships were perceived to be even more valuable if they existed prior to event planning, as positive relational and trust dynamics may already exist at the personal and/or institutional levels. Participants indicated they believed strong and trusting existing partnerships would be especially useful for screening events because they allow for earlier open communications, event promotion opportunities between partner networks, expanded shared access to resources like clinical expertise and volunteer and staff time, as well as improved follow up, particularly at the local level.

- **Local representation:** Several local partners commented, and project staff agreed that it was helpful to have local partners present during screening events. These local partners might represent a range of prevention and/or clinical resources such as the local public health agency, clinics, hospitals, or community service agencies. Local partners' involvement in health screening events provides a known and trusted ally. Local partners can also provide project staff with insight into local idiosyncrasies. Further, focus group participants hypothesized that screening participants may be more likely to take up referrals based on the inferred confirmation of legitimacy of the screening's value and findings by the presence of the trusted local partner.
- **Health department stigma:** In the process of recruiting local partners, event planning, and while conducting and observing screening events, project staff consistently perceived a stigma related to participating in events at local public health agency facilities. Project staff and local partners interpreted this stigma as rural residents viewing the health department as a source primarily for sexual health services (i.e., pregnancy and sexually transmitted

infections). One health department administrator reported their organization worked to minimize stigma around receiving health department services by providing and promoting other health-oriented community services like cooking classes, but they perceived the stigma had taken over a decade to minimize. While local public health agencies are essential and integral local partners, structuring screening events as collaborations between organizations with high levels of local trust should increase participation as well as community and expectation for screening availability. Alternatives to local public health agencies for event location may be particularly helpful, if possible.

- **Access for persons with disabilities:** Health screenings are frequently organized and located to be accessible to populations at risk for the health conditions and disease being screened for. However, the mobile health unit used for this project did not have a ramp, potentially complicating screening access for people. In planning screening event logistics, identifying barriers to access and preparing for alternative access opportunities that ensure the safety and dignity of those potentially screened is best practice.
- **Working with employers:** One partner interviewed in this evaluation noted that from their perspective this project did not engage with [local] businesses and employers to provide health screening services to their employees as a screening recruitment strategy. In the project development and planning phase, leadership researched the processes of working with Walmart to conduct screenings in parking lots. Ultimately, project leadership and staff determined the administrative burden, importantly timeline considerations, precluded this strategy. However, based on the impact of local partnerships on the success of events over the course of the project, it is useful to partner with local providers and businesses for promotion, event staffing, and site location.

- **Capacity and role of partnership:** One goal of the project was to improve “state health department capacity and services to prevent and control COVID-19 infection” through screening events focused on the COVID-19 comorbidities of type-2 diabetes mellitus (DM) and hypertension (HTN). This project addressed the capacity goal via multiple modalities including;
 - by designing and enrolling 44 local partners in a Canvas-based course designed to train people to deliver the same services given at screening events,
 - by donating and distributing screening materials necessary to serve their patients to local partners (including leftovers from 1,500 COVID-19 Rapid Antigen Tests), and
 - by providing technical assistance to local partners in planning local screening events. One local partner described the impact of participating in the planning process as, “it opened our eyes to the ability to do screenings.” When asked if they could hold a similar event, another non-LPHA local partner reported “Yeah, I think we could probably do that...the Health Department, they would provide nurses, and the clinic in town has already said that if we ever did something like this that you know, they could have, you know, provide maybe a nurse or two, or even a pharmacist... It would just take planning.”

Capacity

At the same time capacity was built among LPHAs for holding local events, it is also likely local health departments will continue to benefit from technical assistance provided by local and statewide partnerships with both administrative and clinical expertise to hold ideal screening events in the future. Some examples of these partners include local physicians, nonprofit groups, hospitals, health clinics, media, schools, universities, state and local governments, and event-space owners.

In addition to the role partnership plays in the successful execution of screening events, project leadership, staff, and local partners hold a shared belief that visible local partnership can increase the effectiveness of screenings by implicitly validating screening results and normalizing health prevention and encouraging screened participants to follow up on referrals.

Local partners interviewed during the evaluation pointed out:

1. **Participant 1 (Local Partner):** Instead of just handing them a list, they may wad it up and
2. throw it away or not care. But if the person was here they've always wanted to talk to, like
3. maybe it was a food pantry, someone from there, they might go to that table and just talk to
4. them. Maybe it would help them more instead of trying to reach out and call.
5. **Participant 2 (Local Partner):** Okay, yeah. Like connecting them directly to that in person
6. resource rather than the paper. I do find that a lot, it's like if they just get a paper that says
7. you should call this person...then they're like, okay, whatever.
8. **Participant 1:** I would probably just go home.
9. **Participant 2:** Yeah. But if they're like next to the screening you can be like, "Oh, you
10. should go to the table next to us." So kind of having like stacked resources in that way.

With another local partner stating:

1. **Participant (Local Partner):** So, what we did was when they got their blood pressure taken
2. in the bus, and if it was high or elevated, then they would send them out to us, and then we
3. would talk to them about getting put on our blood pressure program. So, I thought that was a
4. good thing and a transition for us to continue to see those people with those issues...So
4. we're hoping that that will be something that they continue on and and continue to use, utilize
- our services for our labs because they're so cost effective.

One local partner described how working with project staff helped overcome LPHA limited capacity:

1. **Interviewer:** Could you do a similar event yourself? And if not, what would you need? Just
2. trying to gauge, sort of, capacity and perceptions of that capacity.
3. **Participant (Local Partner):** Well, I feel like we could put on events. Fortunately, you
4. know, the mobile unit doing the A1C was greatly appreciated. Because they cost, for one
5. thing, and so that helped with the expense. But like I said, we've had a little health fair here
6. before, but you know it is expensive, so there's a few things that we, you know, couldn't
7. provide.

Another local partner made a similar report, saying:

1. **Interviewer:** If you had to, if it was your choice, if it was something that you wanted to do.
2. Do you think you could put on a similar event yourself? And I guess, if the answer is no,
3. what, what do you think is missing to host?

4. **Participant (Local Partner):** Well, I think we could put on an event like that. But we would have to probably either shut the office down for that day, or you know, just have person on the phone here. Maybe the number of employees [is missing], maybe.

With one final non-governmental local partner saying:

1. **Interviewer:** But if it was your choice. Do you think you could put on a similar event yourself?
2. **Participant (Local Partner):** Yeah, I don't think that we could handle a bit of that kind on our own, as far as doing the testing and stuff. The most that I feel that we could do is maybe support the event and provide the location. So, I think that would be more our role in that type of thing...we could team up with a partner. We try to work with our partners.

Conversely, some LPHAs did not perceive the capacity to hold their own health screening events. Other LPHAs assessed that they had the technical capacity to hold health screening events but were limited in financial, space, and personnel capacity. Statewide and local partnerships can assist in staffing and funding LPHAs in both scenarios. Another local partner echoed sentiments about low organizational capacity, showing a willingness to participate in future health screening events but a hesitance to commit capacity. Screening services are seen as valuable for participants and organizations, but organizations may not be positioned to accomplish screenings alone:

1. **Interviewer:** Do you to feel like if it was of your initiative. That was your choice. Do you think you have the capacity to put all the pieces together to hold a similar event yourself?
2. **Participant (Local Partner):** With our own staff?
3. **Interviewer:** Yes.
4. **Participant (Local Partner):** It depends on what services were offered. You know our staffing levels are small. We have a pretty small crew here. And then our expertise and such is kind of this same... We can offer basic services. We operate under standing orders.⁶ We don't have a physician on staff. Our primary services that we can offer are vaccinations. We can do basic blood draws, basic testing, you know urine tests, or, you know, saliva tests. Things of that nature. But that's where our expertise ends. We don't have a dentist on staff. We can't do any, any diagnosis. So we're pretty limited. And that was kind of the value of your group. They came in. It was pretty much turnkey. You know, you had your own staff. You operated under your own standing orders, or your own, you know medical directives.

⁶ Standing orders likely refers to Missouri Department of Health and Senior Services scope of practice guidelines for work that can be appropriately accomplished by a registered nurse without a physician's supervision. For more context into this likely explanation, see: <https://health.mo.gov/living/lpha/phnursing/physicianorders.php> and <https://www.ahrq.gov/evidencenow/tools/standing-orders.html>.

14. And there's a lot of value in that...One thing I should have mentioned earlier is our
15. community health needs assessment...our priority health issues that as a region we've
16. identified... As for us, justification of resources, we've got a CHNA.

The above focus group participant referred to the limited staff and funding of their own health agency and remarked they felt constrained in programming by their community health needs assessment and standing orders. That local partner noted their belief that external partners were not beholden to the same limitations. While there are many population health needs in rural areas, some LPHAs may feel limited to addressing the conditions identified in standing plans their communities have committed to, even to the detriment of the population in addressing emergent conditions. For example, if a task is not a strategic priority for an LPHA (as recognized by their most recent community health needs assessment, local elected/advisory leadership and/or LPHA funders), they may not prioritize devoting resources to address the issue. However, taking up the tasks to address an emergent need may become easier when external and local partners are providing material resources (implying validation of the need to prioritize) and LPHAs can partner by providing space, guidance, support, promotion, and/or personnel.

Focus group participants often referred to their partnership with the MHU screening project as a valuable partnership to have. However, focus group participants noted it was not the only kind of partnership useful for LPHAs to have to improve their screening capacity. This observation came up in the context of screenings at co-occurring events that present an opportunity to engage local health and health promotion professionals and organizations to staff and support screening events. As local partners described:

1. **Interviewer:** Does anything stand out as particularly successful about the events?
2. **Participant 1 (Local Partner):** The family resource center was there. And then I had our
3. community health worker there and then. ... They can network there, and they can help each other. Let each other know what they're doing and what kind of services they're
4. providing...So I think, by getting more involved or more organizations involved. That's one

5. of the plus things.
6. **Participant 2 (Local Partner):**... Yes, I think so also. And then, if we would have had a
7. little more time, we also have like a hospital that's in our town. That's pretty small, and it
8. would have been good to be able to collaborate with them also with the mobile van.

The project staff echoed sentiments about partnerships and capacity by observing LPHAs have some but not full capacity to hold screening events. Staff further acknowledged and supported building capacity through partnership, technical assistance, and support for accessing material resources required for screening. In particular, the range and quality of services offered through LPHA screening events could be expanded by enhancing access to resources and materials local partners deemed as valuable but expensive. For example, A1C test kits were noted by local partners as both highly needed and cost prohibitive. In response, project staff took care to provide single-use medical screening tests and equipment. A project staff member noted:

1. **Interviewer:** Are there other measures that you thought, "Well, maybe something like this
2. should get done?" Other things that we could do to reach that goal in the future?
3. **Participant (Project staff):** Well, it is tough because some of the feedback
4. that came back from our providers that have hosted us, they say they simply do not have the
5. funding to offer this kind of screening. So they could offer it at a cost, but really the
6. benefit...that we're delivering is free, because we've been helping clients that their insurance
7. doesn't cover it or it's a high co-pay. So even if they're going to go to the health department
8. and get it at a reduced rate, they might decide that they can't go with food that week in order
9. to get that A1C. So the health departments and these facilities are saying, "We just can't
- afford to buy the supplies. They're expensive." So cost has really been prohibitive.

On the other hand, the same project staff believed LPHAs did have the expertise to administer health events:

1. **Interviewer:** Do you think they [LPHAs] have all of the expertise to do the exact same kind
2. of events you all have been doing?
3. **Participant (Project Staff):** Oh, I definitely think that they have people
4. employed within those organizations that could do it, because they have nurses. I mean,
5. we've met dieticians and nutritionists; we've met lots of nursing staff. And if you look at me, I'm not a nurse. One of us comes from a mental health background. They're able to do it. The common denominator is that we all have the desire. We were all able to go through a training module and watch all those videos on how to use those assessments...And if you go through

those skills checks and you get checked off, I'm not saying that I would want just anybody doing it, but I think that if you're employed at a health agency, absolutely.

This response contradicted local partners' statements saying they did not have much of the requisite expertise to hold community health screening events. Both focus group participants perceive even if much can get done without a great deal of expertise more could be done with referral expertise on site, additional staffing, and additional funding.

Promotion

Promotion of the screening was seen as crucial by local partners for participation recruitment.

When asked about missing resources for screening events, one local partner explained:

1. **Participant (Local Partner):** Lead time to advertise and promote it wherever it's going to
2. be, because it seemed like there was some hesitancy and uncertainty...there was good traffic, because it was at a highly populated event, so that helps. But if it's going to be at a less populated event, or on a standalone, or you know a different type of setting, then definitely the promotion side of it is important.

Local partners recommended a month's notice for optimal promotion:

1. **Interviewer:** Did you face any barriers before, during, or after the event?
2. **Participant 1 (Local Partner):** If we could've got the flyers sooner, so we could have
3. advertised more than just one week. I think we did two weeks...
4. **Interviewer:** How long do you think you would need, out of curiosity?
5. **Participant 2 (Local Partner):** I think a month would be good.

Focus group data also indicates communities with especially low health resources may be able to use additional planning time to reach larger groups of especially needy populations.

Promoting events in rural communities presents challenges because there may be few local institutions through which to advertise, although organizations like grocery stores, churches, and schools were all suggested areas for promotion. One of the most popular ways to advertise events among local partners was through social media. Most event partners have social media pages, like a Facebook page, and also have community partners with social media pages. One project staff described:

1. **Participant (Project staff):** We've had some feedback trickle in about
2. how our clients are getting their information, and it's Facebook and word of mouth. But
3. trying to promote the event in advance is hard...if somebody's not following that page. And
4. so that has required a little bit of creativity and grassroots effort on our part, I think, to try to
5. infiltrate some of those small regions. And from my perspective, that's just been a lot of time digging into social media pages, and trying to just promote us in ways that are local
6. community boards.

The project staff suggested social media and especially Facebook drove attendance to some screening events. Moreover, they point out a participant may not follow the health department page but instead might follow other local organizations and community pages (i.e., local yard sales and community gossip groups). When planning events, social media promotion should use multiple kinds of social media pages.

However, social media strategies will mean little for potential participants who are not on social media. One local partner pointed out:

1. **Participant (Local Partner):** You know the middle age and upper older age, older age.
2. There's a lot that has no social media whatsoever that their only way of getting the news is
3. the news on TV or the paper that's left. But, like I said, we don't have very many papers. So
4. the social media part and the Internet and things like that. I think that's where we're missing
5. our older crowd.

Especially when rural areas face challenges with technology and internet access, social media is a promotion channel not fully reaching potential screening participants. Additionally, people who are following health department social media pages may already be concerned about their health but screening events hoping to reduce health disparities must reach those not engaged with local health institutions. Participants pointed out other promotion channels like television, radio, flyers/posters, and newspapers as options which may inform harder to reach populations. Social media promotion has few costs and has the potential to reach many, especially when used outside of traditional health department networks. Newspaper, radio, television advertising, and flyers/posters are more costly than social media and may reach fewer people, but there are some participants for whom it may be impossible to reach in any other way. The cost of reaching one

additional participant may be high; but they might not be reached otherwise. Promotional decisions should be informed by prior participation levels and available resources.

One Extension collaborator believed non-social media promotion could be easily facilitated through the University of Missouri Extension or similar organization, saying:

1. **Participant (Extension):** They need to keep in mind that we have so many contexts,
2. partners, and partnerships that we've already created. So...send it to our regional director
3. and let the region, regional director distribute it out. You know, to the regional specialists or
4. just get the group, you know, whatever southeast region or whatever...send that flyer out
5. with the with the event dates and whatnot. And then I know on my level, I would
6. immediately send that out. We put it on Facebook, and then we'd also send it out as a press
7. release, and the 3 newspapers that we always post in. So it's. It's a mutual benefit to
8. communicate and keep each other in the loop, because I think we can help each other out.

Project leadership and staff determined, based on best practices, that the framing of promotion of events should not be described as a 'social welfare'-style event. Potential screening participants – like all people – experience implicit bias and reflexive, not always accurate, understanding of public health interventions and opportunities, which may result in an adverse reaction to framing that can be interpreted as referencing cultural stereotypes such as 'welfare' benefits and services. For example, events framed around income and other indicators of socio-economic status may discourage participation.

Instead, events should be promoted as community-wide events offering no-cost services and incentives. One local partner explains:

1. **Interviewer:** So if you could maybe boil it down to the one most important piece of advice
2. you could give to someone for holding a successful event.
3. **Participant (Local Partner):** I advertise to all people. Don't, forget your bank employees
4. and your every day working crowds like, if you want to hold a successful event you need to
5. promote yourself as that it's for the entire community. And don't put the word low income, or whatever on a flyer. I think that you know there are a lot of people that that may do well in life, but they still need to make their medical appointments. And so, I think just if you want a good crowd and you want a good variety. I think you just have to promote it to everyone. You never know who's going to see.

Data Collection

Conversations conducted during focus groups and interviews with project leadership provided some insight into what data would need to be collected to successfully execute community screening events. Regarding relevant data to be collected specific to screening outcomes, the project's medical director advised the ethical approach was to only collect data necessary for screening participants to have and understand their screening results.

1. **Participant (Medical director):** You have to figure out what is and is not possible for
2. screening. So, what is it you really want to screen? We ran into this when we were developing our intake questionnaire. There was a whole lot of questions that we said,
3. this is our one-time opportunity to get all this information. And the reality of it is that you can't do it. You can't get too much because people won't finish out the questionnaire. I mean,
4. they'll just get lost in the weeds.

This project gathered data on participants' names (deidentified for evaluation), event location, age range, race/ethnicity, sex, health insurance status, interest in vaccine referral, self-reported pre-existing conditions (to help interpret screening results), having eaten in the last 8 hours (to help interpret screening results), consent to receive health services, and consent to have information used for reporting and evaluation.

Participation and individual-level screening results are not ad hoc substitutes for local epidemiological data collection. LPHAs participate in and adhere to standards of Missouri epidemiological reporting for understanding the characteristics of local population health status.

Limiting data collection is important because health screening participants are entitled to privacy and compliance with legal and best practices related to personal health information (PHI). Ethically, this is particularly pertinent in rural communities where screening participants continue to live in the community where they were screened and are aware that their personal health information has been collected by non-clinical staff and volunteers. This may present

social or psychological consequences for participants, and, arguably, has been one of the greatest operational and ethical challenges of the project. One extension collaborator who attended a screening event reported:

1. **Participant (Extension):** There was an individual who did not want to continue on with the
 2. screening, and they stated that they just rather not be asked certain questions. And although I
 3. don't know exactly what it is that triggered them to react that way, from going through the
 4. intake form myself I do see that asking about like, what my income is or what I might rate
 5. my health, or what specific needs or resources I may need, may be something that maybe a
 6. little more difficult for individuals to...maybe they just don't know what is going to happen
 7. with that information, what it will be used for, and they'll be partnered, I'm not sure. The first
 8. thing that came to my mind was, you know, collecting incomes. If we're out there for free
 9. screenings, no matter what your income level is, you get a free screening right? And so I
- could see where somebody might be a little bit off at that question.
7. **Evaluator:** ... Yeah, I wouldn't want to do that, either. To be honest with you, just thinking
 8. about the actual process. Oh, yeah, "this is my income. This is my weight. This is my age,"
 9. you know then, "Oh! Hey there Bob!"

The final evaluator comment refers to the fact screening participants may have been asked to verbally communicate private information in a space where their responses could be heard by others, a privacy risk exacerbated in a rural context where social networks are small and closely knit. Although the evaluator went through a screening event to receive services, he was not 100% comfortable with the knowledge his non-clinical coworkers had access to his vital health information in a way attached to his name.

Data collection should be limited for health screening events. Very little data is actually necessary for the administration of health screening events, unnecessary data collection threatens participants' privacy and participation, and most LPHAs are meeting their current data needs. Some LPHAs did suggest targeted additional information, for example if participants' home addresses are gathered it could be used in the future to send postcards or mailers about future events to increase health department engagement. That department's local partner reported having not held an event in their health department building in about 30 years. Gathering address

data to increase engagement is more appropriate for a health department than the MU staff administering screenings but could be a useful strategy for health organizations looking to increase public engagement with their organization.

Conclusion

From this project, it became clear it is difficult to drive participation in rural health events regardless of the strategy employed. There are many challenges to overcome to hold events at a statewide level and to improve participation in these events. While there are promotional, logistical, and strategic considerations to event planning, the most consistent way to increase event participation for the project was to hold additional planned out events in cooperation with partners. Events should be held frequently and with local partners vetted for reputation as a trusted community partner, with as much strategy and planning beforehand as possible and with improvements to planning and strategy being made consistently over time.

Local health departments with limited capacity will have difficulty holding such events without additional support provided by local and statewide partners. Screenings events need to be understood by both those implementing the screening events as well as those being screened as primarily for the purpose of providing important health status information to the person being screened. Health screenings are not primarily a tool to shape the perception of LPHAs in their local communities or with statewide partners, nor are health screenings a substitute for or venue from which to provide most direct clinical services (outside the norm of LPHAs such as vaccination events). In rural areas, coalitions of interested parties can come together to improve the range of services offered at health screening events, divide logistical concerns between different partners, and identify what data is necessary to collect from events and how to collect it. Local coalitions will need to have the planning and logistical skills to determine partnership roles

in all areas of planning for successful screenings including promotion, location selection, staffing, and referral strategies.

The health screening project under examination was at times tumultuous as project leadership and project staff learned more about health screening event processes as well as how to build a functional, local partnerships and take a supportive role to increase the likelihood of developing sustainable local capacity to successfully implement health screening programs. Future health screening organizers should take lessons learned from this project to plan and administer their own screening events.

Appendix

Table A1 Service Receipt by Race

| | Project | Region D | Region G | Region E |
|--------------------------|----------------|-----------------|-----------------|-----------------|
| Blood Pressure | White: 613 | White: 210 | White: 63 | White: 340 |
| | Nonwhite: 141 | Nonwhite: 34 | Nonwhite: 6 | Nonwhite: 101 |
| Total Cholesterol | White: 614 | White: 209 | White: 63 | White: 342 |
| | Nonwhite: 141 | Nonwhite: 34 | Nonwhite: 6 | Nonwhite: 101 |
| HDL Cholesterol | White: 613 | White: 209 | White: 63 | White: 341 |
| | Nonwhite: 141 | Nonwhite: 34 | Nonwhite: 6 | Nonwhite: 101 |
| Triglycerides | White: 613 | White: 208 | White: 63 | White: 342 |
| | Nonwhite: 141 | Nonwhite: 34 | Nonwhite: 6 | Nonwhite: 101 |
| LDL Cholesterol | White: 611 | White: 207 | White: 63 | White: 341 |
| | Nonwhite: 141 | Nonwhite: 34 | Nonwhite: 6 | Nonwhite: 101 |
| A1C Levels | White: 607 | White: 206 | White: 62 | White: 339 |
| | Nonwhite: 141 | Nonwhite: 34 | Nonwhite: 6 | Nonwhite: 101 |

Table A2 Service Receipt by Female

| | Project | Region D | Region G | Region E |
|--------------------------|-----------------|-----------------|-----------------|-----------------|
| Blood Pressure | Female: 528 | Female: 164 | Female: 48 | Female: 316 |
| | Non-Female: 226 | Non-Female: 80 | Non-Female: 21 | Non-Female: 125 |
| Total Cholesterol | Female: 530 | Female: 164 | Female: 48 | Female: 318 |
| | Non-Female: 225 | Non-Female: 79 | Non-Female: 21 | Non-Female: 125 |
| HDL Cholesterol | Female: 529 | Female: 164 | Female: 48 | Female: 317 |
| | Non-Female: 225 | Non-Female: 79 | Non-Female: 21 | Non-Female: 125 |
| Triglycerides | Female: 529 | Female: 163 | Female: 48 | Female: 318 |
| | Non-Female: 225 | Non-Female: 79 | Non-Female: 21 | Non-Female: 125 |
| LDL Cholesterol | Female: 528 | Female: 163 | Female: 48 | Female: 317 |
| | Non-Female: 224 | Non-Female: 78 | Non-Female: 21 | Non-Female: 125 |
| A1C Levels | Female: 525 | Female: 162 | Female: 47 | Female: 316 |
| | Non-Female: 223 | Non-Female: 78 | Non-Female: 21 | Non-Female: 124 |

Table A3 Service Receipt by Age

| | Project | Region D | Region G | Region E |
|--------------------------|----------------|-----------------|-----------------|-----------------|
| Blood Pressure | Under 65: 481 | Under 65: 149 | Under 65: 35 | Under 65: 297 |
| | 65+: 271 | 65+: 93 | 65+: 34 | 65+: 144 |
| Total Cholesterol | Under 65: 481 | Under 65: 148 | Under 65: 35 | Under 65: 298 |
| | 65+: 272 | 65+: 93 | 65+: 34 | 65+: 145 |
| HDL Cholesterol | Under 65: 481 | Under 65: 148 | Under 65: 35 | Under 65: 298 |
| | 65+: 271 | 65+: 93 | 65+: 34 | 65+: 144 |
| Triglycerides | Under 65: 480 | Under 65: 147 | Under 65: 35 | Under 65: 298 |
| | 65+: 272 | 65+: 93 | 65+: 34 | 65+: 145 |
| LDL Cholesterol | Under 65: 479 | Under 65: 147 | Under 65: 35 | Under 65: 297 |
| | 65+: 271 | 65+: 92 | 65+: 34 | 65+: 145 |
| A1C Levels | Under 65: 478 | Under 65: 147 | Under 65: 35 | Under 65: 296 |
| | 65+: 268 | 65+: 91 | 65+: 33 | 65+: 144 |