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Community engagement in the development and implementation of a rural road safety campaign: Steps and lessons learned

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Abstract

Introduction: Rural crashes result in fatality rates twice as high as urban, after accounting for vehicle miles traveled, and those involving farm vehicles tend to be the most severe. Farm vehicle crash interventions have focused on the farm equipment (e.g., lighting and marking) or the farm vehicle operator (e.g., training), despite crashes being most frequently caused by other vehicle driver actions. Community-based campaigns focused on rural drivers have potential to influence driver behavior. The objective of this study was to describe the role, formation, and lessons learned from a community advisory board (CAB) in the development and dissemination of a community-based rural roadway safety campaign.

Methods: The CAB provided campaign input through quarterly meetings and email. The campaign had three main CAB and crash data-informed messages: 1) Slow Down, 2) Leave More Space, and 3) Avoid Passing. The CAB led campaign activities to publicize the message, distribute swag, and organize event logistics. To evaluate CAB effectiveness and inform future community engagement efforts, we conducted in-depth, semi-structured telephone interviews with CAB members in July 2020. Interviews were transcribed, coded, and codes were categorized into five main themes.

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Declaration of competing interest

The authors do not have any competing interests to declare.

Results: Overall, CAB membership was described as an overwhelmingly positive experience in terms of the CAB structure, culture fostered among the group, responsibilities, and time commitment. Board members reported successful campaign implementation, gave positive feedback regarding the research team's engagement efforts, and provided valuable recommendations for future campaigns (e.g., adding social media components, expansion of CAB age and industry diversity, and increasing group bonding activities).

Conclusions: Results from this study demonstrate the instrumental role and logistics involved in engagement of community advisors for the development and implementation of a rural roadway safety campaign. Steps and lessons from this study can be applied to other community-level injury and violence prevention topics, with a particular focus on rural communities.

Keywords

qualitative; process evaluation; interviews; farm equipment; advisory board

1. Introduction

Crashes in rural areas disproportionally impact rural communities. Crash-related fatality rates are twice as high compared to urban areas, after accounting for vehicle miles traveled.¹ Fatality-rates in crashes involving farm vehicles are nearly five times higher than other rural traffic crashes.² Collisions between passenger vehicles and farm vehicles are most often the fault of the passenger vehicle driver, and they tend to occur when the involved farm vehicle is rear-ended by or overtaken by a passenger vehicle.^{3–5} In these crashes, occupants of the passenger vehicle are more likely to be injured or killed than the farm vehicle operator.⁴

The current evidence base for interventions to reduce farm vehicle-involved crashes is limited. A recent systematic review demonstrated that much of the literature on farm vehicle-involved traffic crashes focuses on risk factors only without implementation or evaluation of prevention strategies.⁶ To date, efforts have focused on either education of the farm vehicle driver or implementing measures related to the farm equipment itself, such as lighting and marking policies.^{7–9} In one intervention, information about laws and guidelines governing farm equipment on public roadways was presented to drivers' education classes and agricultural science classes.⁹ After the presentation, students had increased knowledge of the laws and guidelines.⁹ Another evaluation assessed the effects of Wisconsin Act 455, which required any child younger than 16 years to complete a tractor certification course prior to operating a farm vehicle on public roadways.⁸ However, the number of farm vehicle crashes among young people did not decrease after the policy was implemented, which the authors hypothesized was due to a discrepancy between the certification course materials and the causes of youth-involved crashes.

Given the comparatively high rate of death for farm vehicle traffic crashes and the limited number of evidence-based interventions, there is a critical need to identify effective ways to prevent farm vehicle traffic crashes. Clear gaps in farm vehicle crash prevention approaches to date include interventions that target behavior change or knowledge change,¹⁰ non-farm vehicle drivers (who are more often at fault in a crash), and community-based approaches.

Such interventions may be most effective if they are tailored to the local environment and impact people where they are driving.¹¹

Participatory approaches, which involve forming partnerships with local stakeholders to co-create and implement interventions, may be one way to improve the effectiveness of interventions.¹² Community-based participatory research (CBPR), as defined by Israel, Eng, Schultz, and Parker (2010)¹³, has several core principles that guide researchers in developing relationships and projects with community members. First, the need to recognize community, which may be geographically or socially defined, as a unit of identity. In addition, CBPR balances the need for rigorous research and community action by building on the existing strengths and resources in the community, sharing decision making and control between the partners, engaging in capacity building, and committing to developing sustainable, long-term interventions. Throughout the process, the researchers commit to sharing information with the community, including ensuring that all partners and communities have access to the results that are understandable and useful. Engaging community members through a community advisory board can help with tailoring to the local environment and maximizing potential intervention effectiveness and reach because they understand the local context, know the people, and can place the intervention messages where they will be most relevant to people in the community.

Although participatory approaches exist on a spectrum, co-constructing projects with equitable ongoing relationships between partners, and a socio-ecological perspective are central.¹⁴ Some traffic safety programs, such as the Community Pedestrian and Bicycle Safety Training (CPBST), have adopted a participatory framework with positive outcomes.¹⁵ CPBST was designed to increase community capacity and knowledge of evidence-based approaches to pedestrian and bicycle safety. In this program, facilitators provide workshops on topics determined by the community stakeholders, which have included sharing knowledge about specific topics and documenting the safety needs in the community. Other traffic safety programs engaged with local stakeholders but did not incorporate other core principles of CBPR.^{16–19}

This paper describes part of a larger study focused on the impact of a community-level rural roadway safety campaign. The campaign was implemented in a small rural town with a population just over 3000, a large farming presence (over 1000 farming operations in the county), and gravel or dirt making up over 80% of all roads in the county. The purpose of the current analysis was to evaluate community engagement in the development and implementation of the rural road safety campaign aimed at rural drivers through a community-academic partnership and the establishment of a community advisory board (CAB). Specifically, this study aims to describe the formation of, role, and lessons learned from the CAB.

2. Methods

2.1 Community Engagement and Intervention Development

2.1.1 Community Advisory Board Recruitment, Formation, and Role in Shaping the Intervention—

The first step in campaign development was the

establishment of a community advisory board (CAB). The goal was to recruit a diverse set of CAB members in terms of sex, expertise/occupation, role/status within the community, and representation of different community segments. An initial list of 14 potential CAB members was developed through personal contacts with the community with an emphasis on representation across sex, occupation, and roles within the community. These 14 potential members were contacted through email and a follow-up phone call that explained the committee goal and asked for commitment to four in-person meetings a year for two years. Potential members were screened for fitness with the CAB during the initial phone call. Fitness was primarily based on interest, willingness, and availability to commit to the project in terms of meeting attendance and by providing input on campaign development and dissemination.

Seven community members agreed to participate, one declined, and six did not respond. An eighth CAB member was identified spontaneously after taking part in a pre-intervention intercept survey and expressing great interest in the project. Once screened for fit, we added this additional member for a total of eight CAB members. Among the eight members, the following community components were represented: city government (mayor and city council member), fire department volunteer, the county transportation office director, local veterinarian, community college programming staff, small business owner, local church pastor, Future Farmers of America (FFA) leadership, high school agricultural educator, local agribusiness, and the chamber of commerce. Some members represented multiple occupations or roles within the community. The CAB included two women and six men. Information on member age and race/ethnicity was not collected, though all members were adults (age 18 or older).

The CAB was tasked with providing guidance on campaign design, messaging, and placement to ensure the campaign effectiveness and relatability to their fellow community members. The CAB helped shape how we designed messaging to target behaviors in a way that would resonate within their community. The messaging included both the wording and the graphics that made up the campaign. The CAB did not develop a formal charter or guiding principles document for its work during the campaign. Decisions were made by either unanimous vote or by coming to a consensus through compromise when any disagreement arose.

2.1.2 Behavioral outcome selection for campaign message formation—Three target behaviors to be addressed by the community campaign were determined prior to the formation of the CAB, based on previous farm vehicle crash research specific to crashes between farm vehicles and passenger vehicles, and included: following distance, passing, and speed.^{1, 3–5} These target behaviors were presented to the CAB members at their first meeting, along with background information on how these behaviors tie to common passenger vehicle-farm vehicle crash circumstances and types (e.g., rear-end, passing, and turning are the most common farm vehicle-involved crash types).^{3, 4} The CAB members were guided to create messaging that would appeal to all drivers in their community, but particularly focused to drivers of passenger vehicles, given passenger vehicle drivers are more often at fault and more often injured in farm vehicle-involved crashes than the farm equipment operators.⁴

The CAB members brainstormed campaign names and sub-messages based on the background information and targeted behaviors given to them by the research team. The development of the campaign name and sub-messaging was completed in an interactive manner over the course of several CAB meetings and email exchanges during the first year of the project. The research team emphasized to the CAB the importance of how the messages may be received in the community, for which the CAB members played an essential role, given their roles, knowledge of the local traffic safety culture, and membership within the community.

2.1.3 CAB-Informed Intervention Development—The CAB was formed in September 2018 and had an in-person kick-off meeting in November 2018. The CAB met roughly every quarter, with one additional meeting for planning the campaign kick-off event, which involved participation in the local fourth of July parade. At the first CAB meeting the research team gave an overview of the overall project and its goals, demonstration of the data collection device used to collect on-road driving behavior data, and background information on the burden of farm vehicle crashes and their common causes. We also explained the CAB purpose, which was to provide input on the development and dissemination of the campaign. At the first meeting the research team led CAB members in a brainstorming session to generate ideas for the campaign name, messages, and logos.

Based on ideas from the brainstorming session, the research team worked with a graphic designer to make draft versions of the logo which were presented to the CAB at their second meeting (Figure 1). Feedback was gathered on the draft logos regarding CAB member preferences for graphics-based, photograph-based, or a combination of the two for logo design. The CAB also completed a brainstorming exercise to identify a list of places and events for the campaign materials to be disseminated. They were asked where they go in town and what they see in a typical day to help generate ideas. Finally, they brainstormed product types for printing the campaign logo and messages and provided valuable information and connections with community and business contacts and logistics.

Campaign messaging and materials were finalized over three CAB meetings with additional email exchanges between. The final versions of the campaign materials were graphics-based, instead of using photographs or a hybrid of graphics and photographs (Figure 2). With heavy input and deliberation from the CAB, a final campaign name was selected (“We’re On This Road Together”) accompanied by three sub-messages: Leave More Space, Avoid Passing, and Slow Down.

2.1.4 Campaign Dissemination—The campaign was disseminated widely throughout the intervention community through materials and events that were planned based on CAB recommendations and approval (Table 1). Additional campaign activities were planned for Spring 2020 but had to be cancelled due to the COVID-19 pandemic. Cancelled plans included partnering with two local businesses to put campaign stickers on paper coffee cups, coasters with the campaign logo on restaurant tables, and hanging banners and handing out swag at local events such as soccer and baseball games.

2.2 CAB Process Evaluation

After the campaign dissemination activities were completed, we conducted a CAB process evaluation to inform and guide future community engagement efforts and CAB collaborations. The process evaluation involved in-depth, semi-structured telephone interviews with CAB members to evaluate community engagement in the development and implementation of the rural road safety campaign (Table 2). The process evaluation interviews were guided by the following five research questions: 1) How do members of the Community Advisory Board (CAB) describe their experience being involved with the project? [Overall Experience], 2) How did the responsibilities and time commitment that was presented to potential CAB members during their recruitment compare to the actual responsibilities and time commitment expected of CAB members during their involvement with the project? [Responsibilities and Time Commitment], 3) To what extent do CAB members perceive the success of the project's implementation in their community? [Perceived Success of the Project], 4) What resources do members of the CAB describe as being needed for successful project implementation? [Resources Needed for Future Implementation], and 5) What recommendations do CAB members have for project improvement? [Recommendations for Project Improvement]. The Institutional Review Board at the University of Iowa approved the data collection protocol.

Telephone interviews were completed in July of 2020 with all community advisory board members (N=8). CAB members were recruited to participate in an interview via email invitation, which explained the study purpose and instructed potential participants on how to schedule their interview with a member of the research team. Prior to starting the interview, participants provided informed consent and granted permission to record the interview using an audio-recording device. Following their interview, all participants were sent a \$50 e-check as compensation for their time.

The average interview duration was 25 minutes (Range: 16-41 minutes). Audio recordings from the interviews (N=8) were transcribed using a third-party transcription service. After interviews were transcribed, a research team member coded the interview transcripts with assistance from the project team to come to a consensus on any questions that arose. The codes were developed a priori and were based on the interview guide and research questions, which were influenced by the Consolidated Framework for Implementation Research.²⁰ Three codes were used: what went well, what did not go well, and recommendations. Microsoft Excel software was used to organize codes. The primary coder organized the codes into common themes that aligned with the process evaluation research questions. The research team then met to discuss the findings from the thematic analysis.

3. Results

3.1 CAB Process Evaluation

The following sections present findings from interviews conducted with the CAB, organized through five overarching themes: overall experience, responsibilities & commitment, perceived campaign success, resources needed for future implementation, and recommendations for improvement.

3.1.1 Overall CAB Member Experience—CAB members had overwhelmingly positive experiences in terms of event participation and board functioning (organization, communication, input gathering, etc.). One individual described their experience as “10 out of 10,” going on to say, “It was fun to be part of. It was fun to work with the university to do something like this and to try to make a difference, even as simple as driving around.” (CAB member 4). Although some CAB members had recommendations to improve CAB organization and involvement in the future (see section 3.1.5), no CAB members reported a negative experience being on the Board.

Much of the positive CAB member experiences were attributed to the leadership provided by the research team in terms of professionalism and how the culture of the group was fostered. CAB members reported a space was created where CAB members were able to feel comfortable sharing their thoughts and opinions on project tasks:

“We were all given opportunities to talk, give ideas. The people running the meeting I thought always were open to new ideas. They never put any ideas down. It was a very open and sharing environment. It worked well that way. I mean, I think everybody felt free to give their opinion. You need that when you’re having this type of group.” (CAB member 7)

Many interview participants expressed their appreciation in having a cross-section of individuals from different work and educational backgrounds come together to work on the campaign. They valued the diversity of perspectives brought to the table by each CAB member, as expressed by:

“I mean, everybody was able to bring a different perspective. We had a very well-rounded committee and that’s the key to everything, having that well-rounded base. And yeah, I think that was the key.” (CAB member 2)

3.1.2 Responsibilities and Time Commitment—All CAB members shared that either the time commitment was what they expected, or that they had not known what to expect but that their involvement still fit well within their schedules. CAB members said that their primary responsibility was attending Board meetings. A few members also participated in other campaign activities within the community if their schedules allowed. Overall, CAB members held positive opinions about the responsibilities and tasks they were asked to complete. They expressed praise for the organization of Board meetings, pointing out that meetings were run on a structured schedule that still presented opportunities for open discussion:

“[Project director] always had an agenda. We might move away from the agenda, but she usually got back to the agenda one way or the other. And she kept everybody on task. We also had a pretty good group of people, like definitely a good mix of people with positive energy, willing to give their opinion, but also respectful of other people’s ideas and opinions. So I think that was helpful too. It was a good group of people. Respectful.” (CAB member 6)

Regarding time commitment and scheduling, multiple CAB members expressed some frustration in some other members’ lack of availability to attend meetings on a regular

basis and how this may have hindered some of the work for the campaign, as summarized by this CAB member:

“I didn’t think we had a full enough group. There were just like two or three of us there because other people were not able to make it, but it was the best time. I think that was kind of one thing that hindered some of the work.” (CAB member 4)

CAB members also shared their thoughts on the methods of communication for project tasks and activities. They expressed that using email communication and online calendar-scheduling tools were very helpful in organizing project meetings and activities.

3.1.3 Perceived Campaign Success—CAB members viewed the overall project a success and valued our team’s community engagement efforts. A few CAB members shared anecdotally that they had seen campaign materials posted in businesses around the local area themselves, and some shared that they received positive feedback about the campaign from fellow community members:

“The folks that we met, gosh, I think the acceptance rate was very high. A lot of people don’t like to be told what to do in the world today. But the people that I met and talked to about this project, not only at my site, but just seeing the folks in general, I think they were very willing to accept it and I think that’s a testament to how the [research team] pulled everything together and tried to present this and then roll it out.” (CAB member 1)

However, there were a few instances where CAB members shared that while they personally viewed the project as successful, it would be hard to fully understand the impact the project had on changing driving behavior. One CAB member noted that although the campaign appears successful in terms of implementation, they would like to see more evidence regarding behavior change to really determine its overall impact:

“So if behavior change is what you were after, I can’t speak to that with a lot of clarity. But in terms of trying to get the message out to a community to hopefully maybe to get them thinking about what’s going on then yeah, I would say that that was accomplished successfully. And I think it would have been even more successful had there not been a pandemic sweep through.” (CAB member 3)

3.1.4 Resources Needed for Future Campaign Implementation—In an effort to gain an understanding in how CAB member experiences could be improved for future campaign implementation in other communities, we asked CAB members to share any types of resources or trainings that they thought could be helpful. Many highlighted that the most important component for this type of project was gathering a group of diverse voices to be on the CAB. Only a few shared that adding additional training elements could be valuable. One CAB member shared that adding in a video explaining tractor and road safety could help familiarize all CAB members on these topics if they had not had much previous experience working with these topics.

“I wonder if [...] maybe if there’s some other information that maybe we’d watch a video or two about a couple things [...], where you can get information on tractor safety and transportation safety, for that matter. Even just a little more

information about a couple things might steer the boat in a way that could be helpful in the future potentially, I guess.” (CAB member 1)

Additionally, some CAB members said that sharing experiences and data from previous community campaigns like their own could be helpful in getting CAB members in future communities on board with the project. Some CAB members even shared that they would be willing to participate in video calls with future CAB members to talk directly about their own experience working on the project.

“If you were just to show them data from previous communities. Because you may have some folks who you ask and they are hesitant to be on a board. And if you say, “Well, we’ve done it in these communities and here’s the data, here’s how perspectives changed or perceptions change or how behavior changed because of this.” That may be a powerful piece to say okay, we want to change this in our community. And so if we can see the numbers of other communities that maybe they’re in similar size or maybe in close proximity to us, that gives folk kind of that shot in the arm to say okay, we want to do this and we want to do it really well.” (CAB member 3)

3.1.5 Recommendations for Campaign Improvement—CAB members shared recommendations focused on improvements directly related to campaign dissemination, as well as building a sense of ‘groupness’ among CAB members (Table 3).

Another set of recommendations that were presented across multiple interviews were including additional groups to CAB formations in the future. Interview participants mentioned many groups they could see being valuable voices to bring to the table (Table 4).

A few other recommendations included hosting CAB meetings in public settings to generate more public interest in the campaign, as well as providing CAB members with some sort of feedback system to inform them about project effectiveness. There were also recommendations to improve promotional aspects of the campaign; some CAB members called out specific ideas for items they could see as useful for campaign promotion (using billboards, signs on public transport, and stickers).

4. Discussion

Establishing a community advisory board (CAB) was essential for engaging community members in the development and dissemination of our community-level rural roadway safety campaign, which aligns with principles of community-based participatory research (CBPR). CBPR draws upon the strengths and resources within the community to enhance relevance, usefulness, quality, and validity of research.^{14, 21} Specifically, our CAB was instrumental in campaign development in terms of tailoring the messaging to resonate within their community and providing vital information on message placement, event planning (e.g. identification of existing events in which to participate), and logistics (e.g., identifying key contacts within the community to facilitate intervention deployment).

CAB interviews were conducted to provide insights on CAB member experiences and recommendations for future CAB engagement. CAB members reported overwhelmingly positive experiences of their CAB membership, such as comfort in sharing ideas, acceptable time commitments, and good communication. Many of the positive experiences cited by CAB members map to important relational dynamic characteristics which are included in the group dynamics core component of the CBPR conceptual logic model, such as participatory decision making and negotiation, task communication and action, leadership and stewardship, influence and power dynamics.²²

The CAB members were particularly helpful in developing the behavioral messages to be acceptable, engaging, and visually appealing to the community, which will become a foundation of this intervention. As this campaign is implemented in new communities, each with different community compositions, the CAB members provided several recommendations for future improvement, including expanding the diversity of CAB membership to include: farmers, students, driver's education programs, ag-related businesses, and individuals across a greater span of ages as groups. Group diversity is an established characteristic to success in community-academic partnerships.^{22, 23} The CAB feedback in relation to opportunities for increasing CAB diversity provides useful information to strengthen future CABs in other communities.

CAB members also provided recommendations to improve future CAB engagement. They suggested dedicating more time to team building to improve group cohesion and possibly facilitate CAB sustainability and activities beyond academic institution involvement. Empowerment and capacity building are important elements of successful CABs, as emphasized in CBPR principles.^{14, 24} Possible avenues for team capacity building include training the CAB on principles of CBPR and on the any specific language or skills needed to orient them to the research being conducted.²⁴ We gave our CAB background information on the research project and some basic terminology, but we did not train them in CBPR, which may be areas for future improvement. While the results from this project focused on a rural roadway safety campaign, the lessons learned from the evaluation of CAB member experience can be applied to a diverse set of topics where community engagement and CABs are used. Additionally, very few existing traffic safety interventions mention use of CABs.¹⁵ In fact, we were not able to find any previous rural road traffic safety interventions or evaluations using CABs or community-engaged participatory approaches, though some mentioned involvement of community stakeholders.^{16–19} Given the benefits we found in engaging a CAB in our campaign development and dissemination, it is likely that other roadway safety campaigns would also benefit.

It is also important to consider the overall lessons learned from the lens of implementing campaign within a rural community. This study did not formally compare and contrast working in rural versus urban areas, but there are several potential differences and similarities to consider. The principles of community engagement are universal, though the details will differ based on community, some of which may align across the lines of rural versus urban. Based on our experience, reach and saturation were potentially less challenging within a rural community compared to urban because social networks (connections among people and organizations) were smaller²⁵, there were overlapping

networks, and the CAB members had knowledge or were part of most of them. For example, the majority of our study's rural community attends the 4th of July parade, which allowed us to attain high reach when we participated in the parade for our campaign kick-off event. Rural residents also are likely to have familiarity with road safety problems and risks in their community.²⁶ Even though crashes are less frequent compared to urban areas, the crash rates and injury and fatality risk are higher in rural areas¹ and people are more likely to know the persons involved due to the smaller community size. The familiarity with road safety problems is a potential facilitator to community receptiveness to messaging, but the sparsity of crashes makes it more difficult to track campaign impact in terms of crash and injury reductions.

The smaller size and count of social networks can also be a barrier to success in rural areas. In our study several CAB members played multiple roles within their community, which made scheduling meetings challenging for some members due to competing priorities and commitments (e.g., city council duties). Rural areas generally have fewer resources than urban areas in terms of human capital, finances, and infrastructure,²⁷ which can have implications for campaign implementation. Finally, traffic safety culture is an important consideration when implementing a community campaign. Evidence related to differences in traffic safety culture by rurality are sparse, but there are some data showing rural populations place a high value on individualism and autonomy that suggests messaging that originates from the community are likely to resonate better than those coming from governmental agencies.²⁸ However, each community has their own specific traffic safety culture which should be considered in campaign development, regardless of rurality.²⁹

This participatory project had several limitations. We report the findings from one specific engagement effort focused on farm equipment crashes, and although many of these lessons are likely to be generalizable to other community campaigns, results may not be generalizable to communities with different characteristics or for different behavioral interventions. Our measures were collected after CAB participation. While some measures collected at the beginning of the process would be helpful for evaluation, early measurement could impact positive experiences of the CAB so should be collected with much thought.

5. Conclusion

Formation of a community advisory board was successful and critical in message development and implementation of our rural road safety campaign. This study demonstrates how to successfully engage community advisors in development and delivery of a road safety campaign, which can be applied to other injury and violence prevention campaign activities and provides recommendations for future community advisory board enhancement.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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References

1. NHTSA. Traffic Safety Facts: Rural/Urban Comparison of Traffic Fatalities. DOT HS 812 957. 2020 March 15, 2021]; Available from: <https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/812957>.
2. Scott E, et al. , Characteristics of Agriculture Related Motor Vehicle Crashes in Rural New York State. *Journal of Agromedicine*, 2020. 25(2): p. 173–178. [PubMed: 31144610]
3. Harland KK, Greenan M, and Ramirez M, Not just a rural occurrence: Differences in agricultural equipment crash characteristics by rural–urban crash site and proximity to town. *Accident Analysis & Prevention*, 2014. 70: p. 8–13. [PubMed: 24686161]
4. Peek-Asa C, et al. , Characteristics of crashes with farm equipment that increase potential for injury. *J Rural Health*, 2007. 23(4): p. 339–47. [PubMed: 17868241]
5. GPCAH. Epidemiology of Farm Equipment Crashes in Nine Midwest States. 2014 March 19, 2021]; Available from: https://gpcah.public-health.uiowa.edu/wp-content/uploads/2015/07/Epidemiology-Farm-Equipment-Crashes_07092015.pdf.
6. Franklin RC, King JC, and Riggs M, A Systematic Review of Large Agriculture Vehicles Use and Crash Incidents on Public Roads. *Journal of Agromedicine*, 2020. 25(1): p. 14–27. [PubMed: 30879394]
7. Ramirez M, et al. , Lighting and marking policies are associated with reduced farm equipment-related crash rates: a policy analysis of nine Midwestern US states. *Occupational and Environmental Medicine*, 2016. 73(9): p. 621–626. [PubMed: 27405602]
8. Marlenga B, et al. , Evaluation of a policy to reduce youth tractor crashes on public roads. *Injury Prevention*, 2006. 12(1): p. 46–51. [PubMed: 16502564]
9. Mehlhorn SA, Darroch B, and Jackson SW, Raising Awareness of Farm Equipment on Public Roadways in Tennessee. *Journal of Agricultural Safety and Health*, 2017. 23(4): p. 241–246. [PubMed: 29140642]
10. Cole HP, Cognitive–Behavioral Approaches to Farm Community Safety Education: A Conceptual Analysis. *Journal of Agricultural Safety and Health*, 2002. 8(2): p. 145–159. [PubMed: 12046802]
11. Noar SM, Benac CN, and Harris MS, Does tailoring matter? Meta-analytic review of tailored print health behavior change interventions. *Psychol Bull*, 2007. 133(4): p. 673–93. [PubMed: 17592961]
12. Haldane V, et al. , Community participation in health services development, implementation, and evaluation: A systematic review of empowerment, health, community, and process outcomes. *PLOS ONE*, 2019. 14(5): p. e0216112. [PubMed: 31075120]
13. Israel BA, et al. , Community-based participatory research: a capacity-building approach for policy advocacy aimed at eliminating health disparities. *American journal of public health*, 2010. 100(11): p. 2094–2102. [PubMed: 20864728]
14. Israel BA, *Methods for community-based participatory research for health*. 2nd ed. 2013, San Francisco, CA: Jossey-Bass. lvi, 682 p.
15. Barajas JM, et al. , How effective are community pedestrian safety training workshops? Short-term findings from a program in California. *Journal of Transport & Health*, 2019. 12: p. 183–194.
16. Elness CD, *Child passenger safety program*. 2016, The College of St. Scholastica: Ann Arbor. p. 111.
17. Cullen P, et al., *Driving change: Process evaluation of a multi-site community licensing support program*, in *Australasian Road Safety Conference*. 2016: Canberra, ACT, Australia.

18. White R, The Fatality Free Friday road safety campaign- A strategy for mobilising the community ownership to improve road safety, in Australasian Road Safety Research, Policing, Education Conference. 2013: Brisbane, Queensland, Australia.
19. Kimberlee R, Streets ahead on safety: young people's participation in decision-making to address the European road injury 'epidemic'. Health Soc Care Community, 2008. 16(3): p. 322–8. [PubMed: 18328057]
20. Team., C.R. CFIR Articles & Highlights. 2020 July 10, 2020]; Available from: <https://cfirguide.org/articles-highlights/>.
21. Israel BA, et al. , REVIEW OF COMMUNITY-BASED RESEARCH: Assessing Partnership Approaches to Improve Public Health. Annual Review of Public Health, 1998. 19(1): p. 173–202.
22. Sandoval JA, et al. , Process and outcome constructs for evaluating community-based participatory research projects: a matrix of existing measures. Health Educ Res, 2012. 27(4): p. 680–90. [PubMed: 21940460]
23. Seifer SD, Building and Sustaining Community-Institutional Partnerships for Prevention Research: Findings from a National Collaborative. Journal of Urban Health, 2006. 83(6): p. 989–1003. [PubMed: 17082993]
24. Newman SD, et al. , Community advisory boards in community-based participatory research: a synthesis of best processes. Prev Chronic Dis, 2011. 8(3): p. A70. [PubMed: 21477510]
25. Klärner A and Knabe A, Social Networks and Coping with Poverty in Rural Areas. Sociologia Ruralis, 2019. 59(3): p. 447–473.
26. Ramirez M, et al. , Rural Roadway Safety Perceptions Among Rural Teen Drivers Living in and Outside of Towns. The Journal of Rural Health, 2013. 29(1): p. 46–54. [PubMed: 23289654]
27. U.S. Census Bureau. New Census Data Show Differences Between Urban and Rural Populations. 2016; Available from: <https://www.census.gov/newsroom/press-releases/2016/cb16-210.html>.
28. Rakauskas ME, Ward NJ, and Gerberich SG, Identification of differences between rural and urban safety cultures. Accid Anal Prev, 2009. 41(5): p. 931–7. [PubMed: 19664429]
29. Ward N, Otto J, and Finley K, Traffic Safety Culture: A Primer for Traffic Safety Practitioners. . 2019: Bozeman, MT.



Figure 1.
Early campaign logo and messaging drafts



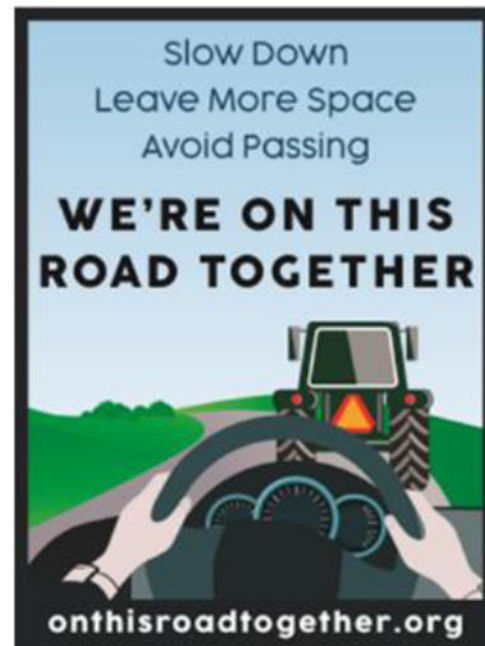
Air Freshener



Sticker



Banner



Window Cling

Figure 2.
Examples of final graphics and messaging

Table 1.

Campaign Dissemination: Timeline, Events, and Strategies

Event/Strategy	Date	Description	Reach	CAB Involvement
4 th of July parade kick-off event	July 2019	Walked in 4 th of July parade with tractor and implement and handed out swag	Handed out stickers to kids (863) and car air fresheners (483) to adults	Several CAB members and their families walked in the parade
Chamber of Commerce newsletter	August 2019	Blurb in chamber newsletter to give heads up about window clings	Distributed to all Chamber of Commerce members	CAB member connected research team to chamber
Business window clings	Fall 2019-Spring 2020	Effort to garner business support and reach of campaign	73 were hung in Fall 2019; 42 (~60%) were still hanging as of Feb/March 2020; 25 (~34%) businesses were given another one to put up in Feb/March 2020	CAB members helped identify business list
Intersection banner	Fall 2019	Large intersection banner hung during harvest season	Placed at a prominent intersection in town	CAB member connected research team to local resident who was hired to hang the banner
High school homecoming and football season	October 2019	Campaign presence at parade, pep rally, and football games	30 t-shirts shot via cannon at pep rally; 100 car air fresheners handed out during parking by Future Farmers of America students; Banner hung at entrance of football field that remained up for whole football season; Campaign announcements made at all home football games	CAB member coordinated t-shirt and air freshener handouts and connected the research team to school personnel for the banner hanging and home game announcements
Trick-or-Treating on the square	October 2019	Halloween event where businesses located around the town square hand out treats to kids	~320 grocery totes were handed to parents during trick-or-treat	CAB member participated and allowed research team to station themselves at her business front
Career fair	November 2019	Career fair at local recreation center catered to local high school students	~100 car air fresheners were handed out to attendees	Two CAB members handed out campaign swag
Night on the Square	November 2019	Local shopping event around town square	~150 reusable grocery totes distributed to residents	One CAB member handed out bags at their business

Table 2.**CAB Member Interview Topics and Example Interview Questions**

Topic	Example Questions
Overall Experience	<p>What events did you participate in as an Advisory Board Member?</p> <p>Probe: The parade? Career fair? Trick-or-treat event?</p> <p>Probe: How do you think those events went?</p> <p>In general, what things helped the Advisory Board function well?</p> <p>Probe: Why was that the case? Meeting organization, schedule, communication, etc.?</p> <p>Can you describe whether or not you felt comfortable providing input during Advisory Board meetings and project planning?</p>
Responsibilities and Time Commitment	<p>Please describe your main role as an Advisory Board member for the rural roadway safety project.</p> <p>Probe: What typical tasks or activities were you asked to complete as an Advisory Board member?</p> <p>Probe: During an average month, what was your typical time commitment for tasks related to this project?</p> <p>Probe: How did your time commitment change over time as an Advisory Board member?</p>
Perceived Success of Campaign	<p>What do you see the future of the “We’re on this road together” campaign being in your community?</p> <p>Do you think the implementation of the “We’re on this road together” campaign could be considered a success for the [community]?</p> <p>Probe: Why do you consider it successful? (<i>or</i>) What made it unsuccessful?</p> <p>Probe: What could be done to make it more successful?</p>
Resources Needed for Future Implementation	<p>If this project was going to different communities, how should it be done differently? What should be the same?</p> <p>Probe: What specific assistance or training would you recommend for future Advisory Board members when working on projects like this Rural Roadway Safety campaign?</p> <p>Probe: Are there any other resources that you think would be helpful for Advisory Board members to have access to?</p>
Recommendations for Project Improvement	<p>Please comment on what you think could be improved in the Rural Roadway Safety project.</p> <p>Probe: What could the university do better or do differently to better help you do your work as an Advisory Board member?</p> <p>Do you have any advice or recommendations for how to make the “We’re on this road together” campaign successful for future communities?</p>

Table 3:

Recommendations for improving the “We’re On This Road Together” campaign and CAB experience with representative quotes from Community Advisory Board (CAB) members, 2020

Recommendation for Campaign Improvement	Representative Quotation
Add online or social media campaign elements	“And it may be something that we could put on social media. The city has thousands of followers, we could put something up on our social media page to... If there was a little social media blurb about it, with the picture that they have of the tractor and everything. I think, maybe that social media campaign might help because you get... That’s how you reach people these days, hardly anybody reads the paper anymore. Everybody reads social media.” (CAB member 2)
Ensure campaign materials are relevant across seasons/time	“The only other potential thing would be to be, we definitely hit it really hard in the fall and spring. We have a lot of your traditional heavy equipment out and about and stuff like that. But I think it’s also somewhat easy to kind of just fall back into normalcy once things like summer and winter roll around where you don’t see as much heavy equipment out and about. And so you kind of just not necessarily ignore it, but it’s not on the forefront of your mind. So potentially just incorporating something in some of those down months of the year where maybe there’s not as much of that equipment rolling around at that point here, but you’d just do something really small to kind of keep it fresh in people’s minds.” (CAB member 3)
Maintain flexibility for future campaign sites to customize their approach based on community needs and culture	“I like that they took people from the community, listened to what that community, their culture in the community and where they’d be most effective. So I would say if it was expanded, it would be good to listen to those community members as well, kind of more of a customized approach.” (CAB member 6)
Recommendation for CAB improvement	Representative Quotation
Provide additional efforts for CAB member team bonding	“I think assistance maybe at the beginning would have been a little bit of get to know you before. We did do some introduction, but if there had been just a small amount of time like at the beginning, like a little bit more of that community building within the community, because then we become the community ourselves and can do the work.” (CAB member 4)

Source: Authors’ analysis of study data.

Table 4:

Recommended groups for future Community Advisory Board (CAB) inclusion and representative quotations from interviews with “We’re On This Road Together” CAB members, 2020

Recommendations for future CAB membership from current CAB members	Representative Quotation
Diversity in ages of CAB members	“The only thing I think that maybe in terms of the diversity of perspective that might be better, they could probably add into would maybe be a little bit broader age range. I think maybe I was the youngest on the board and I’m 34. I can’t speak to how old the oldest member was, but they weren’t a senior citizen by any means” (CAB member 3)
Farmers	“I guess one of my big, it’s not a regret, I guess one of my wishes were, say if we would have had one or two actual operators who run a family farm to be on there, just from the standpoint to at least give them a little behind the scenes awareness of what we were doing.” (CAB member 1)
Youth & students	“Even your local 4-H and maybe you want to get the younger crowd involved. There might be a high school senior that could benefit from... That’s in 4-H, that could benefit from being on an Advisory Board like this. These kids, I mean, they always needs some direction, but yet at the same time, they’ve got things to offer.” (CAB member 2)
Driver’s education programs	“And I think, another thing, a change that could be made that might be a good addition if you’re trying to find ways to implement something like this would be something like getting involved in that particular community’s driver’s ed program.” (CAB member 1)
Farm Bureau & other agricultural-support businesses	“Maybe you might even get some extra ideas from people like Farm Bureau, some of the ag support businesses” (CAB member 5)

Source: Authors’ analysis of study data.