Engaging with and Training Community-Based Partners to Improve the Outcomes of At-Risk Populations after Public Health Emergencies: Findings from Case Reports

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Contents

1 Executive Summary

The National Academies of Sciences, Engineering, and Medicine, Committee on Evidence-Based Practices for Public Health Emergency Preparedness and Response commissioned this report to synthesize findings from case reports related to the effectiveness of engaging with and training community-based partners to improve the outcomes of at-risk populations after public health emergencies. More specifically, this paper seeks to examine the effectiveness of strategies for engaging with and training community-based partners before a public health emergency, the effectiveness of strategies for engaging with and leveraging existing community-based partnerships during a public health emergency, the barriers and facilitators to effective engagement and training of community-based partners, and the benefits and harms of different strategies for engaging with and training community-based partners. The report is intended to support findings from research studies, provide a different perspective from research studies, or provide the only available perspective concerning a specific phenomenon of interest.

The Committee identified case reports directly or indirectly related to engaging with and training community-based partners to improve the outcomes of at-risk populations after public health emergencies by conducting a broad literature search and call for reports. These reports were then further prioritized through the development and application of a "Sorting Tool." Reports were categorized as either "high priority" or "low priority" using the criterion of relevance, adapted from the AACODS checklist (Authority, Accuracy, Coverage, Objectivity, Date, Significance). Tabletop exercises would be deprioritized unless they elicited new themes. Data were then coded in NVivo.

A total of 15 case reports were categorized as high priority, and 2 were categorized as low priority. The low priority reports were excluded from the analysis as they were of limited relevance to the key questions of interest. Most of the case reports included in the analysis did not directly address the research questions of interest, however, there was greater focus on barriers and facilitators to effective engagement. Review findings suggest that strategies involving participatory, inclusive approaches that build trust and enhance partnerships in advance of an emergency may be effective in improving outcomes of at-risk populations. Facilitators to effective engagement include organizational commitment to health equity, leveraging and strengthening of existing relationships, sufficient investment of time and resources, and development of culturally-tailored approaches. Benefits include enhanced trust, new partnerships, increased reach, and services that better align with the needs of target populations.

2 Introduction

Although community engagement is recognized as a best practice for improving emergency preparedness and response outcomes at the community level, the effectiveness of different strategies for engaging community-based partners to improve outcomes of at-risk communities remains unclear. At-risk populations include groups with societal and/or structural vulnerabilities, and others whose access and functional needs may not be fully addressed by traditional service providers or who feel they cannot comfortably or safely use the standard resources offered during preparedness, response, and recovery efforts. Community-based partners include organizations that are representative of a community or a significant segment of a community and work to meet the needs of at-risk populations. They may be governmental or non-governmental organizations. This report was commissioned by the National Academies of Sciences, Engineering, and Medicine, Committee on Evidence-Based Practices for Public Health Emergency Preparedness and Response to synthesize the gray literature around the effectiveness of different strategies for engaging with and training community-based partners to improve the outcomes of at-risk populations after public health emergencies. More specifically, this paper seeks to examine the effectiveness of strategies for engaging with and training community-based partners before a public health emergency, the effectiveness of strategies for engaging with and leveraging existing community-based partnerships during a public health emergency, the barriers and facilitators to effective engagement and training of community-based partners, and the benefits and harms of different strategies for engaging with and training community-based partners.

Additionally, evidence-to-decision considerations for engaging with and training community-based partners (acceptability/preferences, resources and economic considerations, equity issues, and feasibility) are discussed. Findings from this review will be used to add weight to findings from research studies examined in the commissioned paper entitled *Engaging with and Training Community-based Partners for Public Health Emergencies: Qualitative Research Evidence Synthesis*, provide a different perspective from research studies, or to provide the only perspective concerning specific phenomena of interest.

3 Methods

Literature search

The Committee identified gray literature published by relevant domestic and international organizations and agencies. This included Association of Public Health Laboratories (APHL), Assistant Secretary for Preparedness and Response (ASPR), the Association of State and Territorial Health Officials (ASTHO), Centers for Disease Control and Prevention (CDC), Center for Health Security, Council of State and Territorial Epidemiologists (CSTE), European Centre Disease Prevention and Control (ECDC), Disaster Information Management Research Center at the National Library of Medicine at the National Institutes of Health (NLM/NIH), Department of Homeland Security (DHS), Federal Emergency Management Agency (FEMA), US Government Accountability Office (GAO), National Association of County and City Health Officials (NACCHO), National Center for Disaster Medicine and Public Health (NCDMPH), Preparedness and Emergency Response Centers (PERRC), Public Health Canada, Public Health England, RAND Corporation, and the World Health Organization (WHO). Additionally, the

committee obtained 370 after-action reports published from 2009 to 2019 from the Homeland Security Digital Library (HSDL).

In addition to online searching, the Committee proactively solicited reports, both published and unpublished, through a request for documents. The reports were solicited through internal list servs at the National Academies, as well as through external mechanisms. An online request was published on the committee's study webpage, and the Board on Health Sciences Policy distributed the call for reports through the Forum on Medical and Public Health Preparedness for Disasters and Emergencies and the Disaster Science Action Collaborative. Staff contacted CDC, the study sponsor, for document suggestions, and also had them disseminate the announcement to their networks, and particularly the former PERRCs and PERLCs networks. Additionally, staff sent targeted emails PHEPR practitioner associations (e.g., NACCHO and ASTHO) and disaster science organizations (e.g., DR2, NCDMPH, and ASPPH). Submissions were accepted through March 8, 2019. This proved to be an effective way to collect theses, and white papers. Reports identified will be called "case reports" for the purposes of this report. The scope of this report is case reports that did not report a research study. The commissioned paper entitled *Engaging with and Training Community-based Partners for Public Health Emergencies: Qualitative Research Evidence Synthesis* provides a synthesis of qualitative studies that reported qualitative methods.

Prioritization of case reports

The literature search resulted in a total of 17 case reports directly or indirectly related to engagement of community-based partners to improve outcomes for at-risk populations after a public health emergency. To further prioritize which reports to review, a Sorting Tool was developed with input from the Committee. Reports were categorized into "High" priority or "Low" priority based on relevance to the research question of interest. The definition of "relevance" was adapted from the AACODS checklist (Authority, Accuracy, Coverage, Objectivity, Date, Significance). Rigor was not used as a sorting criterion because the primary purpose of this case report review was to synthesize experiential data to add weight to findings from research studies, provide a different perspective from research studies, or to provide the only available perspective concerning specific phenomena of interest. Please see Appendix A for the tool and reviewer guidance.

Case reports covering findings from tabletop exercises would be categorized as low priority given that findings from tabletops are not based on real experience or simulations. However, if a tabletop case report was relevant to the research question, it would be included in the analysis if the specific area of relevance did not otherwise emerge from analysis of the high priority report.

Time-permitting, reports categorized as low priority would be randomly sampled. If the initial random sample yielded new themes, additional reports would be randomly sampled until saturation was reached. However, because application of the sorting tool resulted in all but two (88%) of the reports being considered high priority, random sampling of low priority reports was not conducted. The two low priority case reports were categorized as such because they provided insufficient information related to the key questions of interest.

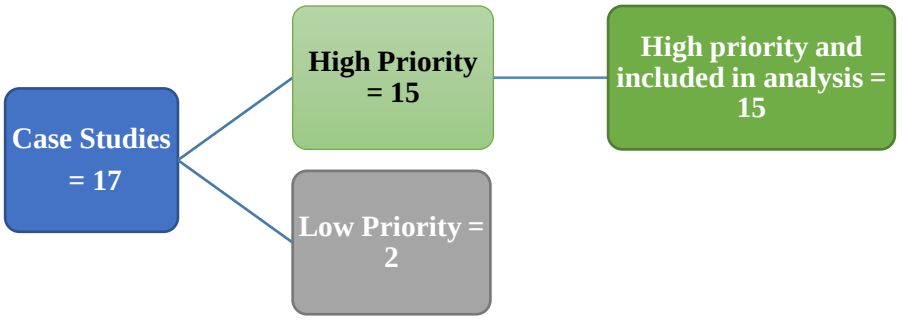
Coding and synthesis of data from selected case reports

Data were analyzed using NVivo 12 Pro. Once coding was completed, key word searches of the high priority reports were conducted in Mendeley to ensure reports with details relevant to the key findings were not overlooked in the analysis phase. A codebook was developed based on the key areas of interest and used to code data in NVivo.

4 Findings

4.1 Case Report Characteristics

Figure 1: Prioritization of Case Reports



The sorting tool was applied to 17 total case reports. Of these 88% were categorized as high priority (15 case reports). Two case reports were categorized as low priority and excluded due to lack of relevance. **Figure 1** provides a breakdown of prioritization results.

Table 1 provides a summary of case report characteristics. A majority of the case reports were all hazards in nature, with a handful that also discussed heat waves, hurricanes, and influenza. Populations discussed included vulnerable/ underserved communities, low-income communities, public housing residents, single-parent families, African American communities, deaf communities, personnel from tribal areas, and rural areas. Case reports provided examples from 7 states in the United States; although some locations were unspecified, however, all examples were from the United States.

Table 1: Case Report Characteristics

Characteristics of Case Reports (N = 15)	
Target population	African American communities, Deaf communities, Low-income communities, Personnel from tribal areas, Public housing residents, Rural areas, Single-parent families, Vulnerable/ Underserved communities
Public Health Threats	All hazards, heat wave, hurricane, influenza
Type of engagement	Partnerships, Trainings, Meetings, Community-partnered Participatory Research, Bi-directional communication and messaging, Outreach and trust building strategies, Inclusive planning processes
Location	AZ, CA, IA, PA, MA, MD, NY, National / Unspecified

4.2 Synthesis of Findings: Themes and Dimensions

Findings are presented in the context of the Key Evidence Review Questions and organized into themes. **Table 2** provides a summary of findings related to the effectiveness of different strategies for engaging with and training community-based partners to improve the outcomes of at-risk populations in the context of public health emergencies.

Key Question 1 – What is the effectiveness of strategies for engaging with and training community-based partners before a public health emergency?

The majority of case reports included in this review did not assess the effectiveness of specific strategies for engaging with and training community-based partners before a public health emergency. Therefore, findings are based on inference.

Inclusion of underserved populations in emergency planning, training, and exercises

Review findings suggest that including underserved populations in emergency planning, training, and exercises can increase understanding of the needs and expectations of underserved populations (1, 74, 25, 26, 61, 68, 122). For instance, a case report from Philadelphia, PA indicated that outreach to individual organizations allowed for ongoing dialogue between the local health department, emergency management, and communities that were previously considered unreachable (1). The model was grounded in the ability to coordinate and sustain new and existing partnerships with community-based organizations (CBOs), and solicit active participation from community experts in the development of appropriate messages for unique planning and language considerations. Training, education, and bidirectional communication via dissemination of quarterly health bulletins to CBOs serving vulnerable populations, and inclusion of evaluation practices were also found to increase preparedness and local capacity to prepare for and respond to the needs of vulnerable populations during an emergency (1).

An example from Arizona suggested that engaging Tribal Bioterrorism Coordinators from the outset in organizing public health emergency trainings for their local tribal organizations was effective in quickly establishing relationships (74). Trainings were culturally appropriate, including a traditional blessing, acknowledgement of how public health was traditionally practiced in their communities, and local solutions. The partnership between the Arizona Department of Health Services Office of Public Health Preparedness and Response, the College of Public Health and statewide tribal partners allowed trainings to be tailored to the unique public health concerns of the tribal communities.

Furthermore, engaging preparedness and resilience coalitions in tabletop exercises was considered effective in community quality improvement by identifying where and how coalitions can strengthen their response and recovery planning efforts (25).

Integration with routine engagement strategies and trust-building in advance of an emergency

Lessons learned from Los Angeles County during 2009 H1N1 suggest that inadequate engagement and trust building activities prior to an emergency can lead to inequitable reach as evidenced by lower vaccination rates among African American communities in underserved areas (75). LA County's experience indicated that public health preparedness should be integrated within routine prevention messages and community engagement strategies to maximize both effectiveness and efficiency. For instance, inclusion of a broad range of community partners who collaborate on issues including infant health, obesity, or Tabaco control in the African American community could be better leveraged for emergency preparedness and response purposes.

Trust building prior to a disaster was also considered especially important for maximizing effectiveness of mental health service provision to underserved communities post-disaster (40). Experiences in post-Katrina New Orleans and in Los Angeles suggest that diverse partnerships can organize around goals to improve both community and individual outcomes.

Engagement of direct service personnel and community partners for capacity development

Leveraging direct service personnel may be an effective strategy for improving disaster preparedness among vulnerable populations (122). Collaborative trainings with agencies, staff, and social service networks can leverage the knowledge and expertise of direct service delivery personnel to inform and create client preparedness tools that address the wide range of unique needs and planning concerns of vulnerable communities. A case report from Maryland found that local health departments, faith-based organizations, and academic health centers can effectively work as partners within a span of six months to design, promote, conduct, and evaluate a model of capacity building for public mental health emergency response (68).

Additionally, training seminars for community health centers that brought together partner hospitals and first responder agencies in Boston received high satisfaction ratings from trainees, with the majority agreeing that they had gained new skills and knowledge (61). Partnerships between health departments, academic health centers, and faith communities, along with training of community-based organizations on how to prioritize resources for vulnerable populations was also considered an effective strategy for creating behavioral health surge plans for given communities (123).

Leveraging faith-based organizations

Case report review findings also suggest that leveraging the distinctive capabilities of local and national faith and health collaborative can enable information sharing, co-learning, and dissemination of best practices (628, 123, 68). Engaging trusted local networks that share commitments to eliminate health disparities, using a framework of strengths and assets, and providing a safe, supportive multi-local, multi-level learning community may also be effective in improving outcomes.

Key Question 2 – What is the effectiveness of strategies for engaging with and leveraging existing community-based partnerships during a public health emergency?

Case reports provided scantier evidence regarding the effectiveness of strategies for engaging with and leveraging existing community-based partnerships for improving outcomes for at-risk populations during public health emergencies. Therefore, as with the previous key question, findings are based on inferences.

Local resource database

The ability to quickly access a uniform information system to support coordination of services for impacted populations during a public health emergency is a critical component of community-based disaster preparedness (86). A pilot study that implemented a community-based resource database through collaboration with local American Red Cross chapters and public and private community organizations found that preparedness is strengthened through a combination of appropriate information technology and collaborative partnerships between community-based organizations and NGOs. For instance, the database was used to serve displaced Hurricane Katrina survivors to index resources earmarked for them in categories including basic needs, criminal justice and legal services, healthcare, income support and employment, individual and family life, mental healthcare and counseling, and organizational and community/international services. The Metropolitan Atlanta Chapter of Red Cross in Georgia used the system to better

service displaced Katrina clients with accurate information and location for referrals. Engaging community partners in the development and maintenance of such a database may similarly prove effective in future public health emergencies.

Surge staffing arrangements

Engaging community-based stakeholders may also enable effective surge staffing during a public health emergency. Strategic collaboration between Boston area community health centers, hospitals and first responder agencies resulted in a "staff sharing" agreement by the Boston Metropolitan Medical Response System in which hospitals send staff to work for the Boston Public Health Commission in the event of a public health emergency (61). These staff would be excused from regular duties and receive liability and worker's compensation coverage, allowing BPHC to guarantee a competent and licensed workforce, with community health center staff also incorporated into a more unified response. Although it is unclear how effective this approach has been for reaching underserved populations, community health centers provided volunteer staffing for incidents involving Hepatitis A and active tuberculosis. Use of multiple community sites made the screening process for TB less burdensome for the hospital, more convenient for patients, and allowed for better surveillance and investigation. It is possible that such collaborations could also be extended to effectively reach underserved populations during a public health emergency.

Targeted outreach and increased reach

Learning from inequities during 2009 H1N1 in LA Country, agencies enhanced community outreach strategies by building stronger partnerships and trust with organizations serving African American communities (75). Doing so led to the expanded reach of public health-driven messages, new strategies for reaching African Americans through key community leaders, and expanded locations willing to allow on-site vaccinations. Relying on these strategies for future public health emergencies may similarly improve reach for underserved populations.

Key Question 3 – What are the barriers and facilitators to effective engagement and training of community-based partners?

Although case reports did not directly assess the effectiveness of engaging community-based partners for improving outcomes post-emergency, many discussed barriers and facilitators to engagement.

Participatory approaches and evaluation

Participatory, collaborative approaches for ensuring key stakeholder participation early on in planning processes may help facilitate effective engagement. For instance, stakeholder engagement in the development of accessible culturally-appropriate emergency preparedness messages has been noted as an important facilitator to effective engagement (1, 26, 40, 74, 101, 122, 123). Stakeholders may include health departments and emergency management agencies, local government, service providers, community-based organizations, academic partners, and members of vulnerable populations. One case report also noted the importance of training staff to value their own personal preparedness in order to promote buy-in into their role as promoters of

client preparedness (122). Another noted that academic partners provided lunches and snacks for trainings (123).

Integrating evaluation of program materials, training content, and message dissemination mechanisms via focus groups, surveys, and stakeholder feedback can also help ensure quality of materials, and promote stakeholder buy in (1, 101). One case report identified that providers serving vulnerable populations may also be directly impacted by the emergency themselves as community members. Therefore, they recognized the importance of addressing the issue of self-care during partner trainings as it can play a role in enabling providers to more effectively serve those in need (40).

Organizational culture and commitment

Case reports also discussed the role of organizational culture in facilitating effective engagement (76, 40). For instance, public health departments may need to undergo an internal culture change to both embrace and align with a community-partnered approach. Additionally, emergency preparedness staff may need to develop new skill sets that go beyond traditional individual and family-focused preparedness efforts to better encompass community coordination, neighborhood planning, and greater integration with non-emergency community-based activities. Reframing public health emergency preparedness practices to include a significant commitment to leveraging existing community health activities along with a strong emphasis on health equity in all activities can help facilitate this organizational shift towards collaborative strategies and community preparedness (76).

Pre-existing relationships

Policymakers and funders' recognition of the time required to establish and maintain authentic partnerships and continued investments is critical to facilitating effective long-term engagement of community-based partners (40). Review findings indicate that the lack of pre-existing or fully functional relationships between emergency preparedness agencies, community-based organizations, and vulnerable communities serves as a barrier to effective engagement in emergency situations (26, 68, 57, 76). Lack of strong relationships may also lead to confusion around roles of community-based partners, which can serve as an additional barrier to effective engagement (61). Additionally, the need for coordinated messaging to community-based partners was also identified as organizations may receive guidance from numerous sources including federal, state, and local agencies (57).

Capacity, time, and resources of partners

Limited capacity, time, and resources of community-based organizations, including community health centers, tribal organizations, etc. can serve as a barrier to engagement due to issues of understaffing, employee turnover, and competing priorities (1, 25, 57, 61, 74, 122). Strategies to improve reach may include partnerships with umbrella organizations, however, many agencies do not fall under umbrella organizations. Lack of travel funds may also prevent personnel from attending trainings (74). One case report of partnerships with local health departments in Wisconsin found that faith organizations were effectively engaged when they had financial support, diverse partners, and sufficient time for partnerships to succeed (123).

During public health emergencies, leveraging information technology such as the previously mentioned community-based resource database may facilitate more timely engagement of community-based partners and link at-risk populations with needed services during an

emergency (86). Another potential facilitator is the use of data that agencies serving vulnerable populations already collect as it could be centrally managed in a shared database, stripped of any identifying or confidential information (1).

Trust, transparency, and communication

Several case reports emphasized the importance of building trust with community-based partners prior to emergencies, as they are often the trusted sources of information for underserved communities (1, 40). Some communities may have an underlying historic mistrust in government services, requiring more rigorous outreach efforts (75, 76). For instance, during 2009 H1N1 in LA County, fear of the H1N1 vaccine as insufficiently tested appeared to carry more weight in some African American communities than the evidence of higher risk of complications and death for African Americans who contracted H1N1 influenza (75). Lack of strong local partnerships also enabled the spread of misinformation by local leaders, disc jockeys, social media, etc.

Trust may be built by developing connections with populations that are not formally served by an agency or provider by reaching out to neighborhood and grassroots groups including faith-based organizations and limited-English-speaking communities (1). Communication materials may also help foster more effective engagement. For instance, bi-directional communication via a free, accessible, quarterly health newsletter to community-based organizations serving vulnerable populations enabled greater trust and buy-in prior to an emergency, which could then be leveraged during an emergency (1). Commitment to transparency can also help build the trust needed for effective engagement (40, 628).

Culturally-tailored materials

Effective engagement of community-based partners was found to be tied to efforts to maintain culturally competent trainings and services aligned with the needs of the target audience, which although time consuming, was deemed important (40, 74, 68). The ability to bridge differences in language between network members can also facilitate alignment of efforts by public health agencies and faith-based organizations as well (628).

Faith-based organizations and legal considerations

Leveraging faith-based organizations was noted as an effective strategy for enhancing community response to behavioral health surges during emergencies; however, legal issues regarding separation of church and state were also noted as a potential area for concern (123, 75, 628). Guidelines in accordance with the US and state constitutions that include nondiscriminatory requirements, separation between public health services and religious activities, and no furthering of religious activities may be helpful in addressing this issue (628).

Key Question 4 – What benefits and harms (desirable and/or undesirable impacts) of different strategies for engaging with and training community-based partners have been described or measured?

While case reports included in this review only discussed benefits of engaging community-based partners, it is possible that unintended consequences may have occurred but

were not described or known. Overall, however, findings indicate positive impacts of engaging partners.

New partnerships, improved coordination, and increased reach to underserved communities

New and sustainable working relationships with community-based partners that previously had limited interactions with government agencies were described as a benefit of engaging partners through the vulnerable population outreach model (1, 40). Case reports also described the increased reach to underserved populations resulting from strategic engagement of community-based partners (1, 75, 628). For instance, targeted outreach aimed at increasing H1N1 vaccination of African Americans in LA County resulted in new partnerships with community-based partners that were well-positioned to expand the reach of public between health messaging within the African American community (75).

Engaging umbrella organizations served to connect a local public health department with smaller, local community-based organizations that it did not otherwise have access to (1). Additionally, partnerships between faith-based organizations and public health agencies fostered greater reach into faith-based communities (628). Community health centers also benefited from better coordination resulting from a "staff sharing" agreement between the Boston Metropolitan Medical Response System and area hospitals, with health center staff being incorporated into a more unified response that is less burdensome for hospitals (61). The enhanced ability to leverage existing networks and capacity through building of networks among faith-based and public health organizations was also an added benefit of the involvement of national level intermediaries in the engagement process (628).

Improved cultural competency and alignment with needs of underserved populations

Another benefit of engaging community-based partners is improved cultural competency and alignment with needs of underserved populations. For instance, through partnerships with key agencies that serve vulnerable populations, tailored materials were vetted through partners that may not otherwise have the resources to develop their own educational materials, to help ensure that they are appropriate for the target population in advance of an emergency (1). Additionally, awareness training facilitated by community-based partners was found to have empowered deaf individuals to participate in the development of culturally and linguistically sensitive services (26). The training is expected to reduce first responders' fear or anxiety while interacting with deaf people based on the knowledge and skills gained during their training. Engaging direct service providers in training developed also served to better address the unique needs of vulnerable populations by leveraging providers' expertise (124). Strong engagement can also lead to greater cultural humility as evidenced by the case report involving training of tribal personnel, which acknowledged the historical context and public health practices of tribal communities (74).

Improved preparedness and readiness to serve underserved populations

Successful collaboration between statewide tribal partners, the Arizona Department of Health Services, and the College of Public Health led to trainings that were well received and highly rated by participants with regard to quality and usefulness (74). The statewide tribal public health emergency preparedness network was perceived as strengthened as a result of the training collaboration. Similarly, participants from faith-based organizations that attended a disaster mental health training reported that they had increased confidence in their ability to

deliver psychological first aid and execute disaster planning strategies, and that they gained a better understanding of mental health issues (68). A public health emergency preparedness and response training program for community human service organization staff was also found to increase awareness of client preparedness roles and personal and organizational preparedness (122). Furthermore, use of a shared resource database led to new services offerings for Red Cross clients, more effective resource tracking and referrals (86), as well as increased awareness of risk and vulnerability in the community.

Improved trust and potential for shared learning

Improved trust was also described in case reports as a result of ongoing engagement. For instance, networks of public health and faith-based organizations aligned around a shared commitment to addressing issues of health equity resulted in a deep trust over time (628). A health bulletin distributed to partners serving vulnerable communities also developed greater trust and buy-in in advance of an emergency (1). Including vulnerable populations in planning processes can raise the level of respect for, trust in, and acceptance of emergency plans within underserved communities. Additionally, safe and supportive environments for bidirectional learning can also help build trusted leadership and organizational relationships (628). Case reports also mentioned opportunities for shared learning through development of multi-level networks of learning communities, collaborative exercises, and establishment of trusted relationships that may allow for more rigorous evaluation methodologies and quality improvement (628, 1, 25).

Table 2: Summary of Findings

Key Question	*Synthesized Theme*	*Theme Dimensions (as applicable)*	*Citations*
What is the effectiveness of strategies for engaging with and training community-based partners before a public health emergency?	Inclusion of underserved populations in emergency planning, training, and exercises	• Increased understanding of needs and expectations of underserved populations • Increased preparedness and local capacity to prepare for and respond to the needs of vulnerable populations during an emergency • Quality improvement	1, 74, 25, 26, 61, 68, 122
	Integration with routine engagement strategies and trust-building in advance of an emergency	• Inclusion of a broad range of community partners could be better leveraged for emergency preparedness and response purposes • Building trust in advance of an emergency can improve effectiveness of mental health service provision	40, 75
	Engagement of direct service personnel and community partners for capacity development	• Leveraging direct service personnel may be an effective strategy for improving disaster preparedness among vulnerable populations • Partnerships between health departments, academic health centers, and faith-based communities can strengthen behavioral health surge plans	122, 68, 61, 123
	Leveraging faith-based organizations	• Leveraging the distinctive capabilities of local and national faith and health collaborative can enable information sharing, co-learning, and dissemination of best practices • Engaging trusted local networks that share commitments to eliminate health disparities may improve outcomes	628, 123, 68

What is the effectiveness of strategies for engaging with and leveraging existing community-based partnerships during a public health emergency?	Local resource database	• Information technology and collaborative partnerships between community-based organizations and NGOs can facilitate more effective referrals and coordination of services	86
	Surge staffing arrangements	• Engaging community-based stakeholders may enable effective surge staffing during a public health emergency	61
	Targeted outreach and increased reach	• Building stronger partnerships and trust with organizations can lead to increased reach • Expanded reach of public health-driven messages and new strategies for reaching underserved communities through key community leaders	75
What are the barriers and facilitators to effective engagement and training of community-based partners?	Participatory approaches and evaluation	• Participatory, collaborative approaches for ensuring key stakeholder participation early on in planning processes • Integration of evaluation • Improved personal preparedness can lead to greater buy in for community preparedness efforts • Recognition of the importance of self-care • Provision of food during trainings	1, 26, 40, 74, 101, 122, 123, 57
	Organizational culture and commitment	• Internal culture change and commitment to equitable, community-partnered approach	40, 76
	Pre-existing relationships	• Investment in time required to establish and maintain authentic partnerships • Lack of strong relationships can lead to confusion around partner roles	40, 61, 26, 68, 57, 76
	Capacity, time, and resources of partners	• Limited capacity, time, and resources of community-based organizations, including community health centers, tribal organizations, etc. can serve as a barrier to engagement due to issues of understaffing, employee turnover, and competing priorities • Strategies to improve reach may include partnerships with umbrella organizations • Leveraging information technology and existing data can facilitate more effective engagement	1, 25, 57, 61, 74, 122, 123, 86
	Trust, transparency, and communication	• Established trust in advance of an emergency is critical • Bi-directional communication and commitment to transparency can help build trust and buy-in in advance of an emergency	1, 40, 75, 76, 628
	Culturally-tailored materials	• Better alignment to the needs of target audiences	40, 74, 68, 628
	Faith-based organizations and legal considerations	• Leveraging faith-based organizations can be an effective strategy • Legal issues regarding separation of church and state may arise	123, 75, 628
What benefits and harms of different strategies for engaging with and training community-based partners	New partnerships, improved coordination, and increased reach to underserved communities		1, 40, 75, 61, 628
	Improved cultural competency and	• Greater alignment with needs of underserved communities through vetting processes	1, 26, 124, 74

have been described or measured?	alignment with needs of underserved populations	• Empowerment of deaf individuals to participate in the development of culturally and linguistically sensitive materials • Reduced fear and anxiety among first responders • Cultural humility and acknowledgement of historical context	
	Improved preparedness and readiness to serve underserved populations		68, 74, 122, 86
	Improved trust and potential for shared learning		1, 628, 25

4.3 Evidence-to-Decision Discussion

Constructs from the evidence-to-decision framework were also applied when reviewing the case reports. This section describes considerations related to the effectiveness of engaging and training community-based partners in improving outcomes of underserved populations and associated preferences; resources and economic considerations; equity issues; and the feasibility of engagement. Findings are limited by the lack of detail provided in many of the case reports and are noted accordingly.

Acceptability and Preferences

Acceptability and preferences related to engagement strategies were not discussed in any detail in the case reports reviewed for this report. A case report focused on developing partnerships between leaders of local health departments, faith-based organizations, and an academic health center found that four out of five local health department leaders that were approached agreed to participate in the partnership, and all four submitted signed letters of collaborative intent (68). Although the level of acceptability is unclear, the signed letters may indicate that the partnership concept was acceptable to local health departments. Another case report found that on-site training and train-the-trainer models with brief, 1-hour presentations and supporting materials for community health center staff were the preferred trainings formats (61).

Resources and Economic Considerations

Few case reports discussed resource and economic considerations, however, those that did pointed to resource constraints impeding the ability to attend trainings, or competing needs faced by underfunded tribal health programs (74). As previously mentioned, issues of staff turnover, inadequate staffing and competing priorities were also considerations for community-based partners with limited resources. While some trainings encouraged participants to think realistically about their organization's resources in order to prioritize by vulnerable population, partner availability to even attend such a training should also be considered (123).

Equity Issues

Greater focus on inclusion for the purposes of reaching underserved populations is presumed to lead to more equitable outcomes for these communities. None of the case reports assessed

equitable outcomes, however, some noted historical context and inadequate focus on addressing the unique needs of underserved populations as defined by race, access and functional needs, income, etc. (40). The community-based participatory research model promotes a two-way knowledge exchange across diverse stakeholders, with a focus on equal power and authority of community and academic partners to develop and evaluate programs, while building community capacity to use findings. Employing such models may help promote equitable outcomes, mutual respect, and inclusive participation.

For some case reports, it is unclear how representative their participants were of the populations they seek to serve. For instance, faith-based organizations were mostly described as churches (123). It is possible that people belonging to smaller faith-based communities were overlooked in planning processes, and that findings may not be generalizable to other communities. To further promote equitable distribution of resources and improved outcomes, it is recommended that public health agencies intentionally focus on issues of equity and social justice when engaging community-based partners.

Furthermore, use of terminology that is acceptable to underserved populations is also an important consideration. Case reports used varying terms including "at-risk," "vulnerable," "under-privileged," "underserved," etc. to refer to their population of interest. Some terms may unintentionally promote stigmatization of certain communities. Therefore, consulting partners in the appropriate use of terminology is recommended to minimize the risk of "othering" members of the community and/ or overlooking their strengths.

Feasibility

A handful of case reports addressed the feasibility of their engagement strategies. Successful recruitment of church leaders and community members into projects was considered a proof of concept for engaging faith-based organizations through meetings with ministerial associations, e-mail, church-bulletin inserts, community flyers, word-of-mouth, and presentations (123). A psychological first aid training model in Maryland for rural populations was considered practicable based on quantification of partner readiness, willingness, and ability to collaborate on project aims (68). Findings from the case report suggest that it is feasible to design, promote, conduct and evaluate a model of capacity development for public mental health emergency response within six months with local health departments, faith-based organizations, and academic health centers.

Limitations

Findings in this report are limited by the lack of availability of case reports focused on the specific research questions of interest. Few case reports discussed the effectiveness of specific strategies for engaging community-based partners for improving outcomes among underserved populations. An additional limitation is that many of the case reports did not provide sufficient detail regarding methods or any methods at all. Therefore, there is a potential for possible bias based on unknown methods and level of representativeness of the study sample. Case reports also did not examine the potential for unintended consequences, making it unclear whether they simply do not exist, or if authors neglected to address the potential harms of ineffective engagement.

5 Conclusion

Although case reports did not specifically hone in on the key questions of interest, review findings suggest that engaging and training community-based partners to improve outcomes for underserved populations is a worthwhile endeavor. Some case reports pointed to less than ideal outcomes resulting from inadequate engagement, including breakdown in trust, promotion of misinformation, and inaccessible services. Whereas, strategic partnership models and collaborative trainings were found to enhance readiness, increase reach, build trust, and even establish new services based on identified need. Participatory and culturally-appropriate approaches, organizational commitment, and investment of sufficient time and resources may further strengthen the effectiveness of engagement strategies. Additional research is recommended to better understand the effectiveness of specific strategies in improving outcomes for underserved communities.

6 References

Report ID/ Reference

01 Klaiman, T., Knorr, D., Fitzgerald, S., Demara, P., Thomas, C.J., Heake, G., & Hausman, A.J. (2010). Locating and communicating with at-risk populations about emergency preparedness: the vulnerable populations outreach model. *Disaster Medicine and Public Health Preparedness, 4*(3), 246-51 .

25 Chandra, A., Williams, M. V., Lopez, C., Tang, J., Eisenman, D., & Magana, A. (2015). Developing a tabletop exercise to test community resilience: Lessons from the Los Angeles County Community Disaster Resilience Project. *Disaster Medicine and Public Health Preparedness*, *9*(5), 484–488.

26 Cripps, J. H., Cooper, S. B., & Austin, E. N. (2016). Emergency preparedness with people who sign: Toward the whole community approach. *Journal of Emergency Management*, *14*(2), 101–111.

40 Wells, K. B., Springgate, B. F., Lizaola, E., Jones, F., & Plough, A. (2013). Community engagement in disaster preparedness and recovery: a tale of two cities--Los Angeles and New Orleans. *The Psychiatric clinics of North America*, *36*(3), 451–466.

57 Gebbie, K. M., Horn, L., McCollum, M., & Ohara, K. (2009). Building a system for preparedness: The Nycepce nest experience. *Journal of Public Health Management and Practice*, *15*(SUPPL. 2), 3–7.

61 Koh, H. K., Shei, A. C., Bataringaya, J., Burstein, J., Biddinger, P. D., Crowther, M. S., … Auerbach, J. (2006). Building community-based surge capacity through a public health and academic collaboration: the role of community health centers. *Public Health Reports*, *121*(2), 211–216.

68 McCabe, O.L., Perry, C., Azur, M.J., Taylor, H.G., Bailey, M.J., & Links, J.M. (2011). Psychological first-aid training for paraprofessionals: a systems-based model for enhancing capacity of rural emergency responses. *Prehospital and Disaster Medicine, 26(4)*, 251-8 .

74 Peate, W. F., & Mullins, J. (2008). Disaster preparedness training for tribal leaders. *Journal of Occupational Medicine and Toxicology*, *3*(1), 1–5.

75 Plough, A., Bristow, B., Fielding, J., Caldwell, S., & Khan, S. (2011). Pandemics and health equity: Lessons learned from the H1N1 response in Los Angeles County. *Journal of Public Health Management and Practice*, *17*(1), 20–27.

76 Plough, A., Fielding, J. E., Chandra, A., Williams, M., Eisenman, D., Wells, K. B., … Magaña, A. (2013). Building community disaster resilience: Perspectives from a large urban county department of public health. *American Journal of Public Health*, *103*(7), 1190–1197.

86 Troy, D. A., Carson, A., Vanderbeek, J., & Hutton, A. (2008). Enhancing community-based disaster preparedness with information technology. *Disasters*, *32*(1), 149–165.

101 Bouye, K. E., Truman, B. I., Hutchins, S., Richard, R., Brown, C., Guillory, J. A., & Rashid, J. (2009). Pandemic influenza preparedness and response among public-housing residents, single-parent families, and low-income populations. *American Journal of Public Health*, *99*(SUPPL. 2), 287–293.

122 Levin, K. L., Berliner, M., & Merdjanoff, A. (2014). Disaster planning for vulnerable populations: Leveraging community human service organizations direct service delivery personnel. *Journal of Public Health Management and Practice*, *20*(SUPPL. 5), 79–82.

123 Mccabe, O. L., Perry, C., Azur, M., Taylor, H. G., Gwon, H., Mosley, A., … Links, J. M. (2013). Guided preparedness planning with lay communities: Enhancing capacity of rural emergency response through a systems-based partnership. *Prehospital and Disaster Medicine*, *28*(1), 8–15.

628 Kiser, M., & Lovelace, K. (2019). A national network of public health and faith-based organizations to increase influenza prevention among hard-to-reach populations. *American Journal of Public Health*, *109*(3), 371–377.

Appendix A: Case Report Sorting Tool

Sorting Criteria: Significance	Prioritization	Comments	Reviewer guidance	*Notes*
1. Does the report include information relevant to engaging community-based partners to improve outcomes for at-risk populations after a public health emergency?	**High/ Low** ***Yes = High*** ***No = Low***	[Reviewer to provide brief explanation for prioritization]	*Yes = High Priority*: The report provides sufficient relevant information to inform a thematic analysis. It adds context, is meaningful, useful, and may be used to inform decision making *No = Low Priority*: The report either briefly mentions, or does not mention the key areas of interest. Insufficient information to inform a thematic analysis.	*Adapted from AACODS checklist - "This is a value judgment of the item, in the context of the relevant research area"* *Reports categorized as "High" priority will be analyzed by key area of interest.* *Reports categorized as "Low" priority will be randomly sampled. The number sampled will be dependent on # of low priority reports and time available. If initial random sample yields new themes, additional reports will be randomly sampled until saturation is reached.* *Reports covering tabletop exercises will be categorized as low priority given that findings from tabletops are not based on real experience or simulations. However, if a tabletop report is relevant to the research question, it will be included in the analysis if the specific area of relevance did not otherwise emerge from analysis of the high priority report.* *Some reports may have little to no information related to engaging community-based partners to improve outcomes for at-risk populations to warrant inclusion into the analysis. These reports will not be included in the analysis.* *Note: Rigor is not used as a sorting criterion because the primary purpose of this case report review is to synthesize experiential data to add weight to findings from research studies, provide a different perspective from research studies, or to provide the only available perspective concerning specific phenomena of interest. Additionally, reports eligible for the Case Report thematic analysis are those that have been excluded from the analysis of research studies. Therefore, they already do not meet a certain threshold for rigor.*

Appendix B: Sorted Case Reports

ID	Case Report Reference	CP Prioritization
1	Klaiman, T., Knorr, D., Fitzgerald, S., Demara, P., Thomas, C.J., Heake, G., & Hausman, A.J. (2010). Locating and communicating with at-risk populations about emergency preparedness: the vulnerable populations outreach model. *Disaster Medicine and Public Health Preparedness, 4*(3), 246-51 .	High
25	Chandra, A., Williams, M. V., Lopez, C., Tang, J., Eisenman, D., & Magana, A. (2015). Developing a tabletop exercise to test community resilience: Lessons from the Los Angeles County Community Disaster Resilience Project. *Disaster Medicine and Public Health Preparedness, 9*(5), 484–488.	High
26	Cripps, J. H., Cooper, S. B., & Austin, E. N. (2016). Emergency preparedness with people who sign: Toward the whole community approach. *Journal of Emergency Management*, *14*(2), 101–111.	High
40	Wells, K. B., Springgate, B. F., Lizaola, E., Jones, F., & Plough, A. (2013). Community engagement in disaster preparedness and recovery: a tale of two cities--Los Angeles and New Orleans. *The Psychiatric clinics of North America*, *36*(3), 451–466.	High
57	Gebbie, K. M., Horn, L., McCollum, M., & Ohara, K. (2009). Building a system for preparedness: The Nycepce nest experience. *Journal of Public Health Management and Practice*, *15*(SUPPL. 2), 3–7.	High
61	Koh, H. K., Shei, A. C., Bataringaya, J., Burstein, J., Biddinger, P. D., Crowther, M. S., … Auerbach, J. (2006). Building community-based surge capacity through a public health and academic collaboration: the role of community health centers. *Public Health Reports*, *121*(2), 211–216.	High
68	McCabe, O.L., Perry, C., Azur, M.J., Taylor, H.G., Bailey, M.J., & Links, J.M. (2011). Psychological first-aid training for paraprofessionals: a systems-based model for enhancing capacity of rural emergency responses. *Prehospital and Disaster Medicine, 26(4),* 251-8.	High
73	Paige, S., Jones, M., D'Ambrosio, L., Taylor, W., Bonne, D., Loehr, M., & Stergachis, A. (2010). Strengthening community partnerships with local public health through regional pandemic influenza exercises. *Public Health Reports,* 125(3), 488–493.	Low
74	Peate, W. F., & Mullins, J. (2008). Disaster preparedness training for tribal leaders. *Journal of Occupational Medicine and Toxicology*, *3*(1), 1–5.	High
75	Plough, A., Bristow, B., Fielding, J., Caldwell, S., & Khan, S. (2011). Pandemics and health equity: Lessons learned from the H1N1 response in Los Angeles County. *Journal of Public Health Management and Practice*, *17*(1), 20–27.	High
76	Plough, A., Fielding, J. E., Chandra, A., Williams, M., Eisenman, D., Wells, K. B., … Magaña, A. (2013). Building community disaster resilience: Perspectives from a large urban county department of public health. *American Journal of Public Health*, *103*(7), 1190–1197.	High
86	Troy, D. A., Carson, A., Vanderbeek, J., & Hutton, A. (2008). Enhancing community-based disaster preparedness with information technology. *Disasters*, *32*(1), 149–165.	High
101	Bouye, K. E., Truman, B. I., Hutchins, S., Richard, R., Brown, C., Guillory, J. A., & Rashid, J. (2009). Pandemic influenza preparedness and response among public-housing residents, single-parent families, and low-income populations. *American Journal of Public Health*, *99*(SUPPL. 2), 287–293.	High
122	Levin, K. L., Berliner, M., & Merdjanoff, A. (2014). Disaster planning for vulnerable populations: Leveraging community human service organizations direct service delivery personnel. *Journal of Public Health Management and Practice*, *20*(SUPPL. 5), 79–82.	High
123	Mccabe, O. L., Perry, C., Azur, M., Taylor, H. G., Gwon, H., Mosley, A., … Links, J. M. (2013). Guided preparedness planning with lay communities: Enhancing capacity of rural emergency response through a systems-based partnership. *Prehospital and Disaster Medicine*, *28*(1), 8–15.	High
124	Neuhauser, L., Ivey, S. L., Huang, D., Engelman, A., Tseng, W., Dahrouge, D., … Kealey, M. (2013). Availability and readability of emergency preparedness materials for deaf and hard-of-hearing and older adult populations: Issues and assessments. *PLoS ONE,* 8(2), 9–11.	Low
628	Kiser, M., & Lovelace, K. (2019). A national network of public health and faith-based organizations to increase influenza prevention among hard-to-reach populations. *American Journal of Public Health,* 109(3), 371–377.	High