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Utilization of Community Health Workers in Emergency Preparedness and Response: A Literature Review

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Abstract

As the frequency and magnitude of disasters worldwide continues to rise, so too does the devastation that follows. This devastation extends to the whole community. In guidance put forward by the Federal Emergency Management Agency (FEMA), emergency preparedness must be represented in and reflective of the whole community, but marginalized groups or segments of the population may be left out of the conversation. Community Health Workers (CHW)s serve as a trusted liaisons and community advocates within the health care landscape. That landscape, as recent events demonstrate, includes emergency preparedness and response. This literature review is designed to assess available publications on the utilization of CHWs in emergency preparedness and/or emergency response. Four themes were identified in the literature review: response, training, political and investment. Assessments grouped by thematic type included author, title, study method, unique CHW term or phrase, and key findings. Additionally, eight articles were evaluated based on their COVID-19 focus and findings, their assessment included: CHW duties, challenges, and recommendations. A detailed narrative analysis, discussion and recommendation is provided on each theme.

Keywords: community health workers, emergency preparedness or emergency response

Chapter 1 – Introduction

Introduction:

Prevention, protection, mitigation, response, and recovery are the five mission areas of the National Preparedness Goal. These mission areas' orbital focus is the preparedness of the "whole community" (National Preparedness Goal, n.d.). The Federal Emergency Management Agency (FEMA) notes that all preparedness work should be guided by and in turn, be reflective of, the people. In 1975, the World Health Organization publicly introduced the concept of community health workers (CHWs) referenced as "barefoot doctors" (Perry et al., 2014, p. 402). In essence, work done by, representative of, and reflective of the whole community. Therefore, the intersection of community health workers and emergency preparedness and response is a natural fit.

Purpose:

The purpose of this capstone project is to review the literature for utilization of community health workers in emergency preparedness and response of the whole community through the following aims.

Aims:

1. Explore literature for examples or documentation of utilization of community health workers in emergency preparedness or emergency response
2. Identify whole community-based roles of community health workers in emergency preparedness or emergency response situations, with a focus on recent COVID-19 pandemic application
3. Recommend further scholarship and publication initiatives for integration of community health workers into the guiding principles of the National

Preparedness Goal

Chapter 2 – Background

Significance:

CHWs are trusted, respected, and valued members of their communities. Documentation from the 1960s and 70s in the US shows CHWs as the bridge from modern healthcare to rural and low-income areas. The 80s and 90s show state and federal initiatives aimed at recognizing the role and standardization of CHWs. The 2000s continued to bring forth documented success of CHWs' impact on targeted heath issues (HRSA, 2007). In 2003, the Institute of Medicine released a report which provided insight into continued use and expanded scope of CHWs. The report parallels the 1975 WHO publication noting social determinants of health are mostly appropriately and effectively attended to by members of their respective communities (Balcazar et al., 2011). Change comes from within.

Defining the workforce role of a CHW is a continual process. "Who is a community health worker? – a systematic review of definitions" examined the definition of CHWs from over 25 countries (Olaniran et al., 2017). Their review demonstrates inconsistencies in the naming, role, education, and training of CHWs. However, the nature of CHW's work as culturally competent healthcare liaisons, with demonstrated effectiveness and worldwide consistent care delivery remains fixed (Olaniran et al., 2017).

In 2007, the Health Resources and Services Administration (HRSA) published a workforce study on CHWs. HRSA cites minimal workforce information as the rationale for this publication and the report estimates that in the year 2000, there were 86,000 CHWs throughout the US. CHWs have been used in a variety of different roles and care

team models: members of care teams, navigator, screening and health education provider, outreach and enrollment or organizers (HRSA 2007). The American Public Health Association defines CHWs as “frontline public health workers who are trusted members of and/or have an unusually close understanding of the community served” (Balcazar et al., 2011). The phrase “unusually close understanding” isn’t commonly associated with health care workers, especially in the United States. The US health care system is famous for barriers to care and inaccessibility (Allen et al., 2017). However, one can begin to see how the role of community health worker, especially at the frontline, could benefit from the natural closeness and understanding of the community and how it could be incorporated into emergency response.

Witmer et al., reports on numerous examples of CHW programs in the United States from the 1960s forward. The article provides accolades to CHWs for their contributions to increasing access to health care, improving the quality of care, reducing the costs of care and many other broader social contributions all in the United States (Witmer et al., 1995). Additionally, Perry, Zulliger and Rogers expand on the evidence for CHWs’ effectiveness in the United States. They provide notable impact on hypertension control and reduction of cardiovascular risk factors. Generally speaking, CHWs care is most widely associated with preventive care, chronic disease management and infection screenings, however, their scope and impact are much further reaching.

Perry et al., describe CHWs in a fashion that mirrors FEMA’s National Preparedness Goal and mission areas. “CHW programs are not stand-alone enterprises. Rather, they are a critical part of a larger system of activities that involve

formal health programs, communities, and specific interventions" (Perry et al., 2014, p. 412). This statement holds true for the National Preparedness Goal as well. The preparedness system does not stand alone, it's part of a larger system of missions that involve core capabilities which require a systematic process of integration. Based on philosophy alone, CHWs and the grassroots implementation of the National Preparedness Goal, should provide a complimentary result.

In their publication "Community Health Workers and Pandemic Preparedness: Current and Prospective Roles", Boyce and Katz analyze examples from the 2014 Ebola and 2015 Zika epidemics where CHWs participated in health security and emergency preparedness. The authors state, "despite [CHWs] establishment at the community level, CHWs are often under-utilized in response to infection disease outbreaks and […] in promoting pandemic preparedness" (Boyce & Katz, 2019, p. 2). This article and others demonstrate the extensive impact CHWs have made and can make on emergency preparedness and response. Additionally, preparedness and response resources like ready.gov and organized programs like "You are the Help Until Help Arrives" and "Community Emergency Response Teams (CERT)s" are framed to be disseminated and implemented by the community and for the community. Each communities' needs are unique and emergency preparedness and response efforts should include the use of CHWs to exemplify the composition of the community. The alignment of CHWs and emergency preparedness and response is strong and this literature review will provide perspective on the demonstrated points of junction.

Chapter 3 – Methods

Search strategy:

This literature review was conducted through access to the University of Nebraska Medical Center Leon S. McGoogan Health Sciences Library. Initial consultation with Jess King, the College of Public Health Education and Research Services Librarian, provided guidance on appropriate use of search techniques and background information on the different available databases. The PubMed database was selected for depth of articles and relevance to the proposal topic. A search strategy was created to produce literature results which incorporated community health workers and emergency preparedness or response. Although preparedness and response are different missions within the National Preparedness Goal, the terms are often used in concert and with their search combination, will provide a thorough landscape of CHWs into the literature.

Inclusion and exclusion criteria:

In order to meet the needs of the literature review's purpose and aim, detailed inclusion and exclusion criteria were enforced. With an underlining focus of CHWs utilization during the COVID-19 pandemic, the search was limited to articles with a publication date between January 2020 and December 2022. Filters for exclusion include abstract availability, full text availability, languages other than English and preprints. Articles, cross-sectional studies, reviews and synthesis from peer reviewed journals and other worthy study types were included in the search.

Data Extraction:

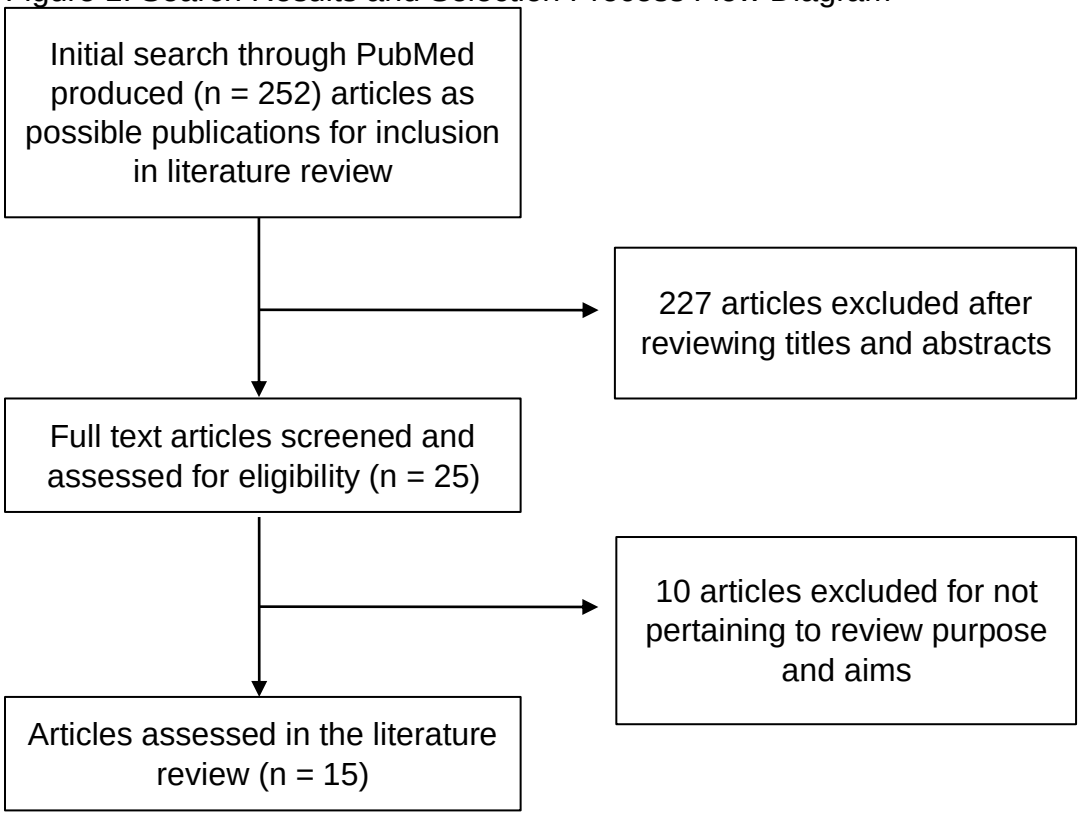
An analysis of the literature content will present a detailed response to the proposal aims. Attributes extracted from the articles include roles of CHWs, training protocols, investment methods based on community needs, emergency response efforts by CHWs, including COVID-19 and impacts of national guiding principles on CHWs. Based on the literature reviewed, research gaps will be identified and recommendations for further scholarship and intersection with the principles of the National Preparedness Goal will be offered.

Search results

The literature search in PubMed initially produced 252 articles. This “n” included search exclusion filters like language and year of publication. After reviewing 252 article titles and abstracts, 227 were excluded. 25 full text articles were then screened and assessed for eligibility into the final literature review. 10 additional articles were excluded for not responding to the purpose and or aims of the review. In final, 15 articles were included and assessed as part of this literature review.

Selection process

Figure 1: Search Results and Selection Process Flow Diagram



Chapter 4 – Results

Description of studies

The fifteen articles included in this literature review were separated into four thematic categories. The four themes are response (n = 4), training (n = 4), political (n = 3) and investment (n = 4). Table 1 through Table 4 provide an overview of each of the studies including authors, title, study method, a uniquely used CHW term and key findings. In addition, Table 5 includes an overview of each article that details a COVID-19 preparedness and or response emphasis (n = 8). Table 5 is labeled by authors, COVID-19 CHW duties, challenges, and recommendations. Four of the articles identified the study method as a mixed methods study or part of a larger mixed methods study and three of the articles were connected to each other as part of a larger 11-part editorial series. Articles were based in and reviewed from a variety of different countries including United States, India, Brazil, Uganda, Kenya, Senegal, and Bangladesh.

Table 1: Overview of Studies with a Response Focus				
Authors	Title	Study Method	CHW Term	Key Findings
(Moir et al., 2021)	The Critical Role Hawai'i's Community Health Workers Are Playing in COVID-19 Response Efforts	Commentary on informal needs assessment & focus groups	"cultural mediators"	• CHWs duties changed and partnerships expanded • CHWs provided education verbally and ensured information was culturally appropriate
(Rahman et al., 2021)	The critical importance of community health workers as first responders to COVID-19 in USA	Mixed methods study-focus groups & survey	"natural researchers"	• CHWs are considered trustworthy, perform risk assessments and consistency address social needs through referrals to services • CHWs work is stressful situations with very limited system level support
(Bhaumik et al., 2020)	Community health workers for pandemic response: a rapid evidence synthesis	Literature review – 36 articles by rapid evidence synthesis	"carriers for infection"	• CHWs most commonly had a role to play in community engagement and awareness • Available resources such as supervision and supplies impacted CHWs participation
(Chengo et al., 2022)	A Situation Assessment of Community Health Workers' Preparedness in Supporting Health System Response to COVID-19 in Kenya, Senegal, and Uganda	Mixed method study-interviews and surveys	"cadre of human resource"	• Surveys of residents from Kenya, Senegal and Uganda suggest CHWs were utilized pre-COVID, with an increase in usage during the pandemic. • While CHWs increased the number of home visits during COVID, they encountered numerous challenges around pay, supervision, education, training, and politics

Table 2: Overview of Studies with a Training Focus				
Authors	Title	Study Method	CHW Term	Key Findings
(Lee et al., 2021)	Workforce Readiness Training: A Comprehensive Training Model That equips Community Health Workers to Work at the Top of Their Practice and Profession	Literature review and training model	For “high touch patient populations”	• Workforce readiness training model for CHWs includes didactic, competency skills labs, practical applications, and professional development • A comprehensive model needs organizational readiness training and continuing education- with a focus on supervisors and agency leaders
(Schleiff et al., 2021)	Community health workers at the dawn of a new era: 6. Recruitment, training, and continuing education	Editorial 6 of 11 in series- literature review	“full partners”	• Review focused on three themes, professionalism, quality and performance and scaling up • Themes matched the evolving nature of health care systems and therefore of CHWs recruitment, training, and education
(Singh & Singh, 2022)	Training community health workers for the COVID-19 response, India	Report on programs and survey	“Regard them as doctors”	• Bihari partnered to create a 400 hour training course for unaccredited CHWs which included theoretical, practical, self-learning, AV and hands on training • An additional one-day COVID-19 training was provided by doctors
(Afzal et al., 2021)	Community health workers at the dawn of a new era: 2. Planning, coordination, and partnerships	Editorial 2 of 11 in series- discussions w/ stakeholders	Not a “panacea”	• CHW programs are piecemealed and based on individual issues • Historically, CHWs have not been involved in coordination and training • Examples of strong and weak coordination and partnership expansion

Table 3: Overview of Studies with a Political Focus				
Authors	Title	Study Method	CHW Term	Key Findings
(Nichols et al., 2022)	The “Corona Warriors”? Community health workers in the governance of India’s COVID-19 response	Part of larger mixed methods study–literature review & interviews	“governance actors”	• Highest officials repeatedly used war metaphors to mobilize CHWs • CHWs COVID-19 tasks created new responsibilities and “power” • CHWs received recognition for their work experienced limited changes in working conditions
(Nunes, 2020)	The everyday political economy of health: community health workers and the response to the 2015 Zika outbreak in Brazil	Editorial	“transmission-belts”	• CHWs acted as extensions of Brazil’s government officials in a neoliberalism style • CHWs, predominantly female, termed “stop gap” were placed in physically demanding and authoritative positions
(Roy et al., 2022)	Examining Roles, Support, and Experiences of Community Health Workers During the COVID-19 Pandemic in Bangladesh	Mixed methods-telephone surveys and in person interviews	scared	• Government provided CHWs (80% of reported) COVID training, Inconsistent experiences from CHWs regarding overall support and education, training = capacity • Bangladesh government considers CHWS as essential workers, but still experienced significant disruptions in their services

Table 4: Overview of Studies with an Investment Focus				
Authors	Title	Study Method	CHW Term	Key Findings
(Ballard et al., 2022)	Community Health Workers in Pandemics: Evidence and Investment Implications	Commentary	"woefully under-supported"	• Integrated Community Case Management is just one of the many promotive and clinical care tasks of CHWs worldwide • Worldwide, CHWs are largely inadequately supervised un/underpaid
(Palafox et al., 2021)	Maintaining population health in low- and middle-income countries during the COVID-19 pandemic: Why we should be investing in Community Health Workers	Editorial	"conduits"	• CHWs provide feedback loop from vulnerable populations to healthcare systems • CHWs are cost effective • CHWs had successful functions during Ebola outbreak in West Africa
(Zulu & Perry, 2021)	Community health workers at the dawn of a new era	Editorial 1 of 11 in series	"local accountability"	• Utilize CHWs to close the "evidence-practice" gap focused on preventative and public health interventions
(Ballard et al., 2020)	Prioritizing the role of community health workers in the COVID-19 response	Nominal group technique (NGT)	"poised"	• CHWs must be protected • Use CHWs to interrupt the spread of the virus with testing • Grant CHWs integration into essential workforces • Add holistic care to CHWs budgets

Table 5: COVID-19 Focus Overview			
Authors	COVID–19 CHW Duties	Challenges	Recommendations
Ballard et al., 2020	community based infection prevention and control, sample collection, contact tracing, home based care, frontline workers –prevent, detect, respond	Providing “Integrated Community Case Management” (iCCM), unpaid work, missing tools, inadequate supervision, and overall lack of support	“Need to be equipped with training, supervision, remuneration, medical commodities and PPE”, utilize WHO CHW guidelines and the Community Health Workers Assessment and Improvement Matrix, philanthropic investments
Palafox et al., 2020	In home visits, simple assessments, referrals and surveillance, combat misinformation, identify new cases, provide feedback from vulnerable populations, utilize telehealth	At risk for severe illness or death, maybe unwilling, PPE shortages, minimize impact on pre-pandemic work	Contributions must be acknowledged throughout health systems, need updated infection control training, and access to PPE, pandemic planning needs to include well equipped and trained CHWs
Roy et al., 2022	Community education about prevention, treatment, and at home care, referrals, surveillance, contact tracing, personal hygiene	Unable to continue normal services, lack of transportation, no group education sessions, could not enter homes, frightened, utilized mobile phones for patient interactions, sharing incorrect information	CHWs with COVID specific training were 6+times more likely to advise on COIVD and provide services, consider geographic limitations and impacts on CHWs work, example refugee camps, consider proportional monetary increases, CHWs demonstrate resilience compared to other health care workers, utilize CHWs in vaccine distribution efforts
Nichols et al., 2022	Community awareness including addressing myths, surveillance including case identification, promote services, mitigate stigma and discrimination, feedback to leaders, personal precautions, information dissemination	Raising morale, understaffed, recent budget cuts, managing new COVID tasks and responsibilities, “risking lives on a daily basis”, lack of PPE, lack of digital devices, shared home technology, required to walk with closed public transport	Recognize through higher wages and worker status, consider by using war rhetoric it can imply casualties and be demotivating, leading to turnover, especially without proper reward, CHWs should be seen for their importance, strongly reviewing working conditions for these woman CHWs, further research on intersection of politics and CHWs

Chengo et al., 2022	Referrals, surveillance, contact tracing, home care, distributed PPE, health educators, demystification, and burial	Lack of salary, supervision, education, identification, home visits, misconceptions, politics	Empowerment and skill training including psychosocial support, adequate PPE, reimbursement for travel, stipends, tools for documentation and reporting, information, and engagement with politics
Moir et al., 2021	Community education, screenings, home deliveries, interrupters, culturally appropriate materials, address misinformation	Increased workload and COVID duties took priority, adopting to new technology	Vaccination efforts, navigating patients through the health care systems, train as contact tracers, ongoing education and training in mental health, mandates and chronic diseases as related to COVID, include in planning and implementation
Rahman et al., 2021	Trustworthy information source, screening, contact tracing, mental health intervention, referrals and advocating	Expected fatigue and mental health issues, job security, salary, and related anxiety, when to make referrals	PPE, hazard pay, priority vaccine distribution, updated training and TA, access to technology, increased supervision and access to mental health care, sustained funding, community engaged research
Bhaumik et al., 2020	Rural focused community engagement, preventative practices, contact tracing, home visits, surveillance	Abandoned prior case management, supply chain disruptions, lack of supervision, travel, worker shortages, closures, movement restrictions	Define and create policies for pandemic CHW roles, sustained investments, awards and recognition, seven-point training program, engage CHWs early in response, psychosocial support, community and engagement plan, follow 2018 WHO guide

Summary of findings – CHW Term

While the search methods for this literature review included the specific phrase of "community health workers" the studies themselves quickly demonstrated that within each community, CHWs are referenced differently. The summary of findings in Tables 1 – 4 include a unique term which was used to describe CHWs by the author. Very few terms were cross referenced among articles, instead, the term is representative of the values of the community, a moment of time in need, or roles and responsibilities. Two themes resonated in the referenced terms. The first related to the scope of work provided by CHWs. They are "full partners" (Schleiff et al., 2021), "poised" (Ballard et al., 2020), scared (Roy et al., 2022), but accountable (Zulu & Perry, 2021). The second is the constant reference to their community ties. The terms used to label CHWs demonstrate an almost living, breathing and equal connection to the community they serve, a lifeline. The terms transcend the current COVID-19 climate and make it obvious that CHWs are valued, trusted, and accepted. The CHWs terms selected for use in each table are words of importance from personal perspective. Some of these phrases are direct quotes from interviewed CHWs, others are terms their community or government labels their work, and some are labels placed by the authors in their efforts to accurately describe the work and role of CHWs in that particular time and place. While any two people can describe something vastly different, the range of standout phrases resonated with the varied expectations and or lack of standardization of the role and responsibilities of CHWs.

Summary of findings with a Response Focus – Table 1

Articles written by Moir et al., Rahman et al., Bhaumik et al., and Chengo et al., were grouped in Table 1 as their articles were aimed at the logistics and involvement of CHWs in emergency response efforts, specifically the COVID-19 pandemic. These articles detailed how CHWs from Hawaii to Uganda struggled to keep up with their pre-COVID duties, received much of their data from social media, used their knowledge skills and attitude of the community to tailor messaging and awareness campaigns to the vulnerable populations they were from and who remained their focus. All articles reported on a large increase in CHW duties, but there were also many examples of a lack of formalized COVID-19 education and very little managerial support and supervision.

Summary of findings with a Training Focus – Table 2

Four articles were grouped together in Table 2 as findings by Lee et al., Schleiff et al., Singh & Singh and Afzal et al. captured particulars of CHW training and education. As these articles demonstrate, there is no universal training procedure for CHWs. The lack of consistent training and education of CHW adds to the complexity of role integration into emergency preparedness and response, but also demonstrates how micro focused CHWs efforts can be. Lee et al., provides a five-step training protocol which has similar training steps to Bingh & Bingh's model from India. Both sets of authors agree, practical, hands on, skills focused training with continued education would benefit CHWs and the health care systems in which they work. Articles by Schleiff et al. and Afzal et al. are part of the series, "Community health workers at the dawn of a new era" and bring differing perspective to the ideal CHW training. Although

all articles in this group share the same understanding that CHWs walk in and through worlds, acting as translators and bridges from one to the other. Training must support the evolving needs of the health care system but be drawn from the depths of the community's needs.

Summary of findings with a Political Focus – Table 3

Articles with a political focus hailed from India, Brazil, and Bangladesh. In these three articles, the nature and tone of the CHWs shifted to represent the responsibility, voice, and authority of the government in which they represented. Nunes's article focused on the 2015 Zika outbreak in Brazil. CHWs in Brazil have been formalized since the 1980s, often have completed secondary education and are described as the "only face of government power" (Nunes, 2020). In all three articles, CHWs were viewed as an extension of the government, labeled as frontline workers in some instances and "street-level bureaucrats" in another. CHWs in Brazil struggled to find fulfillment in their role, workers in Bangladesh reported feeling overwhelmed and scared, and the "Corona Warriors" in India felt legitimized. All the workers were motivated by the government's chosen rhetoric but their roles as "governance actors" depended on that of the government. The sense of influence coupled with the juxtaposition of powerlessness both validated their roles and yet still provided little forward momentum in CHWs quest for system inclusion and representation.

Summary of findings with an Investment Focus – Table 4

The remaining four articles in this literature review provide a CHWs pandemic involvement and emergency response investment assessment. All four articles in Table 4 use very direct and strong language to describe the impact of CHWs in low, middle-

income, and developed countries. The authors of “Community Health Workers in Pandemic: Evidence and Investment Implications” say that with the right support and tools, CHWs “can prevent, detect and respond to pandemics”. Zulu and Perry go so far as to send out a “call” for investment in community and CHWs programs saying the “evidence-practice gap is no longer morally acceptable” (2021). And Ballard et al. details how investment in CHWs can “protect the healthcare workers”, “interrupt the virus”, “maintain existing healthcare services”, and “shield the most vulnerable” (2020).

While each article maintains different investment strategies, common denominators include sustained programmatic and systematic financial support, a strong focus on supervision requirements and uniformity, adequate role compensation for CHWs, and continuing education. Notable unique investment approaches include performance assessments and, accreditation including CHWs as “WHO communicable disease surveillance response team” (Ballard et al., 2020) and needs of the commonly female fulfilled role (Ballard et al., 2022); (Palafox et al., 2021); (Zulu & Perry, 2021). All articles note, though while using different phrases and terms, that CHWs are what allows the health care system entrance to the whole community. Without CHWs, the bridge to care is severed for many communities and access by health care systems is only superficial. CHWs “foster[ing] collective community action and local accountability” (Zulu & Perry, 2021, p 1) and the “opportunity cost of not professionalizing CHWs may be substantially larger than previously estimated” (Ballard et al., 2022, p 2).

Summary of findings with a COVID-19 Focus – Table 5

All articles in this literature review were screened for reference to CHWs participation in COVID-19 response. Eight of the 15 articles are included in Table 5 with

a summary of findings of CHW COVID-19 duties, challenges, and recommendations. Across the eight articles, CHW COVID-19 duties were very similar. Reoccurring most often across the articles were CHWs role in community education and awareness and contact tracing. In the majority of these articles, CHWs focused much of their work in the homes of those they serve. While most of the world closed its doors during the COVID-19 pandemic, families and individuals trusted CHWs enough to allow them entrance.

However, as frontline health workers, CHWs experienced many logistical challenges while completing their new duties. Again, challenges were rather consistent by comparison between articles with supply chain issues and shortages, numerous added responsibilities, and mental and physical fatigue which plagues frontline health care workers. CHWs struggled to balance their pre-pandemic workload and the new COVID-19 roles and tasks. Palofox et al., Moir et al. and Nichols et al., discussed the added challenges of incorporating new and increased technology usage to a workload. When reviewing these challenges, it's important to reframe this extensive and rapidly assigned workload into a landscape without consistent training, a novel virus, minimal investment, and strong political reach. In this context, it is clear to see how the phrases "woefully under supported" and a "cadre of human resources" take shape and use.

COVID-19 related recommendation findings resonate the same tones and themes of this literature review's findings. A need for sustained programmatic investment, standardized roles and trainings, support from the top down both politically and within the health care systems, and an integration of CHWs in the planning and preparedness efforts. Another common recommendation is the need for increased CHW

compensation. With CHWs roles as "carriers of infection", often extensive physical movement, and critical role in reaching rural and vulnerable populations, Rahman et al. suggests CHWs be provided hazard pay for their roles in emergency response. Ballard et al. and Bhaumik et al. both reference incorporation of the 2018 publication "WHO guideline on health policy and system support to optimize community health worker programmes" into CHW emergency response recommendations. Lastly, multiple publications stressed the importance of incorporating CHWs into vaccine distribution workflows. CHWs know their audience. In many cases, they are their audience. By working to redirect misinformation, they can continue act as "conduits", "cultural mediators" and "full partners" in the dissemination of necessary public health COVID-19 interventions.

Additional notes on findings

While each of the fifteen reviewed articles was placed within a theme for easier and more detailed examination and analysis, it is important to note that each article did not only address items within its theme. For instance, within the response theme, the articles also touched on workforce support, political impact and need for long term investment. However, the themes for each article were so strong, that adding or referencing them within multiple tables was not considered in this literature review.

Chapter 5 – Discussion

Reading through these fifteen articles, the Shakespearean quote of “what’s in a name? That which we call a rose by any other name would smell just as sweet.” repeatedly came to mind. Using community health workers as an exemplar, it’s easy to see how a name can be simultaneously powerful and irrelevant. Every article produced a term that functioned as a CHW identifier. In each article, this term was relevant to the authors, the health care landscape, the political climate and/or the role or situation at hand. However, each phrase is only as powerful as its context. The inconsistent expectations, training, roles, and functions of CHWs across the globe is made evident by the variable nomenclature. Missing from the literature was a process for professionalizing CHWs, developing a certification program and frequency, and need for continuing education. Training should be viewed in conjunction with the role, inclusive of the whole community.

Response Focus – Table 1

All articles as part of the response focus discussed the increased and expanded duties expected of CHWs during the response period. This resonates with expectations. However, many of the added tasks were developed as the response was occurring and very few demonstrated planning efforts which included support from CHWs. The roles connected to community engagement and awareness and as trusted sources of information align with the common perception and definitions of CHWs. It was interesting to learn the barriers in which CHWs encountered as community members, effected by the response at hand, but also as frontline workers and the expectation that their work continue. Without thoughtful classification, CHWs struggled to navigate the

logistics of public closures, access to transportation, adequate supervision, differential pay and more. Additionally, without inclusion in planning and preparedness, CHWs felt vulnerable in their newly assigned tasks and in some situations the public also noticed this concern as they moved from house to house in somewhat risky behaviors. In a role that is often filled by women, how can response tasks be combined and then balanced with many of the household management that are often undertaken by women? Knowing as Rahman et al., say, the "critical importance of CHWs as first responders", how do we better setup the systems for their success?

Training Focus – Table 2

Articles written by Lee et al., and Schleiff et al. provided details on CHW training models with similar multi step process including skills and hands on training. All reviewed publications agree, having a blueprint for CHW training is imperative to the readiness of CHWs and their efficient and impactful integration into the health care workforce. Emphasis on inclusive training for supervisors and agencies demonstrated a top-down approach to training, which is much appreciated. Singh & Singh's article demonstrated the immediate impact of just-in-time training, as well as its success and barriers related to the COVID-19 pandemic. The importance of coordination and partnership building as described by Afzal et al., was missing from the other articles and is the upmost importance for a multifaceted role requiring seamless movement to homes, communities, nongovernmental organizations, and political machines.

Political Focus – Table 3

It was surprising to learn the extent of the political reach and CHW role was framed and presented in these three articles. It's hard to imagine a health care

landscape in which the frontline workers present as powerful political figures and extensions of the government. That is the reality for many communities however, placing CHWs in a tug and pull conundrum. Even with the “force” of the government behind them, CHWs still struggle with logistics, supplies, training, and adequate pay. COVID-19 pandemic provided recognition for many CHWs, and COVID training produced demonstrated capacity. However, the gender inequities and reliance on CHW’s quasigovernmental role did not produce improved resources or working conditions.

Investment Focus – Table 4

The articles in the investment grouping demonstrated the need for CHW programmatic investment, both in the immediate response to the COVID-19 pandemic and in a longer-term, sustainable setting. Additionally, these articles gave specific examples the successes and impacts of CHWs in maternal and child health, prevention and control of HIV, TB, malaria and as well as noncommunicable diseases. Interestingly, the funding and overall investment in CHWs seems to be just as disparate as the programmatic work and funding organizations involved. The work is not considerate of the needs of the community, but rather the needs of the funding. Investments in CHWs are made to solve one-directional problems and can be very disease, issue or funding agency directed. How can investment in CHWs be viewed with the same holistic nature in which they practice? We know that CHWs are synonymous with community trust, but how does that trust translate to increased investment and when does the focus shift to the healthcare system trusting CHWs?

COVID-19 Focus – Table 5

CHW tasks associated with COVID-19 were rather uniform across all articles. Considering the timeline associated with COVID-19, the uniformity is impressive. However, the details lie in the outliers. In a few instances CHWs pushed what could be considered the scope of their practice, considering their practice for years revolved around a single disease and or patient age group. Additionally, the new COVID-19 tasks were physically and mentally exhausting. Exceptions were made in name of the pandemic including contact tracing, testing, and prescribing tasks. Details on the outcomes associated with these higher-level tasks could help health systems create cost effective workers with meaningful outcomes. Challenges experienced by CHWs were also similar but did vary by region and demographic served. Some of the challenges were similar to what the general public experienced but some were heartbreaking and painted a very vivid image of what work as a CHW can entail. The theme within the recommendations which resonated loudest is the need for acknowledgement. This was an interesting recommendation considering many of the CHWs seem to draw inspiration from the selfless advocate mentality. However, a little appreciation goes a long way. While COVID-19 pushed the physical and mental limits of many frontline workers, CHWs still struggle for a defined role with comparable and adequate compensation.

Summary – Recommendations

Future publications should consider reporting on lessons learned from CHW pandemic related utilization. With the recent COVID-19 pandemic it would be helpful to have multiple countries' utilization of CHWs crossed compared with each other, especially when comparing first world nations and cities versus with third world nations

or communities with low income and vulnerable populations. Although often hard to disclose, detailed information on how CHW programs are funded and supported, training costs, and information on return-on-investment metrics could substantially help define what is needed for a successful CHW program. Additionally, continued manuscripts on training models and exemplars and data to demonstrate success using said models would guide planning and programming activities for communities and agencies. Finally, the National Preparedness Goal was not mentioned in any of the articles reviewed. How do CHWs fit into the larger missions and structures of emergency preparedness and response?

Public health implications

When contemplating the public health implications, two direct quotes from the literature stuck out. The first is from Zulu and Perry, stating that the “scientific evidence regarding the ability of CHWs to improve population health is incontrovertible” (2021, p.1). The second is from Ballard et al. noting, “CHWs who are equipped, trained, and paid as part of a well-functioning health system can help keep pandemics in check and maintain health services equity and access” (2022, p.1). Many of the articles in this literature review provided data from recent examples of emergency response. The public and their health will continue to be impacted by emergencies and disasters. CHWs reach “high touch patient populations”, and although they are “not a panacea”, they do reach the community at its core and are able to transmit that reach back to health care systems (Lee et al., 2021); (Afzal et al., 2021).

Strengths and limitations

This literature review is timely but limited in scope. Articles included in this literature review were published between January 2020 and December 2022. Therefore, this timeframe produced many publications with a COVID-19 pandemic focus. To garner a deeper understanding of the utilization of CHWs in a variety of emergency preparedness and response scenarios, wider publication date parameters would need to be used. Additionally, since the publication date range is narrow, the study methods of the articles were limited to mixed method studies and quick turnaround literature reviews. This literature review included publications from many different countries. For considerations specific to the National Preparedness Goal, another review might consider only US based studies, but from a broader time period. While the keyword search included emergency preparedness, results were heavily focused on the response aspect, likely due to the current state of the COVID-19 pandemic.

Gaps in evidence

While the COVID-19 pandemic and its implications were part of the aims of this literature review, it definitely produced gaps in evidence relating to utilization of CHWs in other emergency preparedness and response situations. The literature search produced COVID-19 focused articles, especially considering the publication timeframe. Gaps in evidence could be reduced by exploring prepandemic timeframe searches and or taking the newfound COVID-19 pandemic lens and reevaluating older emergency responses.

Conclusions

How do you define a term that is so intertwined with the distinctive needs of a community, its time, place and people? This literature review demonstrated that the definition and role of CHWs will be ever developing and evolving, and that is of value to the health care system, not a detriment. CHWs can successfully be utilized in the prevention, protection, mitigation, response, and recovery of the whole community.

Application of Public Health Competencies

Master of Public Health Foundational Competencies

MPHF7: Assess population needs, assets and capacities that affect communities' health

This foundational competency will be addressed in the literature review by gathering, reviewing, and presenting details on the integration of community health workers and emergency preparedness and response. By demonstrating the current intersection, assessments can be made on the overall capacity of CHWs within the whole community preparedness model.

Emergency Preparedness Concentration Competencies

EMPMPH2: Recognize protective behaviors in responders' actions during disasters and recommend appropriate adjustments

This concentration competency will be addressed in the literature review by detailing how emergency preparedness and response actions are incorporating community health workers. Recommendations on gaps in the literature will be presented as well as a discussion of actions during emergency events (disasters).

EMPMPH3: Research and analyze epidemiological, environmental, or health data from previous and current disaster responses

This concentration competency will be addressed in the literature review by researching and analyzing the health data presented in selected publications from prior disaster/emergency responses. This data will pertain to the use of community health workers in emergency preparedness and/or response.

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AMELIA STOLTMAN

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Education

University of Nebraska Medical Center

- Master of Public Health, Emergency Preparedness – May 2023

Creighton University

- Master of Science, Bioscience Management
- Bachelor of Science, Biology and Theology

Experience

UNMC College of Nursing (CON), Omaha, Nebraska

Administrator II, Transformational Practice and Partnerships - April 2021 to Present

Administrator I, Transformational Practice and Partnerships - April 2017 to April 2021

- Manage operations of the Transformational Practice and Partnerships (TPP) Unit:Morehead Center for Nursing Practice (MCNP), Continuing Nursing Education (CNE) and Global Health (GH) departments
- Provide financial oversight and accountability for budgets and financial transactions of all programs within TPP, with department yearly revenues over $2 million
- Manage faculty practice enterprise for CON, recruiting, creating and maintaining contractual statewide partnerships with community agencies and leading 30+ CON faculty over five divisions
- Administrator of two innovative HRSA healthcare workforce development grants funding totaling over $4.25 million over four-year period
- In partnership with grant PIs, created two new CON programs: uNParalleled Residency and PriCare Fellowship and Scholar Program with significant workforce outcomes
- Facilitate and manage CON Global Health program of work, manage international relationships as well as evaluating and developing new worldwide partnerships, initiating many UNMC trailblazing program developments
- Facilitate many TPP umbrella programs such as Faculty Practice Scholar, international student exchange, faculty scholar exchange, creative writing project, mobile unit utilization, and contracted clinic management
- Editor of CON Annual Report, CON Creative Writing Project Books as well as content creator of targeted website, print and social media marketing materials
- Member of CON Incident Command, CON Faculty Practice Committee, UNMC Gender Diverse Workforce Community of Practice, UNMC Title IX Hearing Officer & Decision Maker

All Care Health Center, Council Bluffs, Iowa

Director of Development - April 2015 to March 2017

- Managed corporate relationships related to contracts, human capital and industry partnerships
- Directed ACHC's fundraising program of work including financial oversight and accountability of the Foundation's operations
- Identified, cultivated and solicited donors, managed donor database and developed Foundation community strategic plan
- Sought and reviewed grants, constructed applications and reported out on required metrics
    - Awarded two year $700,000 HRSA Oral Health Expansion Grant, $40,000 ACS Colorectal Cancer Screening Grant and multiple grants under $5,000

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- Developed and administered ACHC's marketing program and budget including: press and media relations, website, video, events, social media and print collateral, with a focus on patient acquisition, community relations and brand management
- Designed and analyzed patient engagement approaches with an emphasis on quality improvement
- Acted as Board of Directors Liaison, facilitated all board meetings, supported effective communication between board members and ACHC operations like implementation of strategic plan

All Care Health Center, Council Bluffs, Iowa

Outreach and Education Coordinator, CAC, SHIIP Counselor - September 2012 to April 2015

- Created clinic-wide health insurance education and enrollment program, reducing ACHC's uninsured population by over 30% in 15 months
  - Established and reported on financial and clinical metrics to funding source, HRSA
  - Designed and implemented personnel training pertaining to the ACA, designating roles and responsibilities of staff; eg. clinical process change to include ACA in patient care
- Developed successful outreach program, building over 20 long-term community partnerships
- Co-led Patient Centered Medical Home certification including launch and oversight of Patient Advisory Committee and Patient Satisfaction Survey
- Developed new ACHC branding, oversaw marketing initiatives and staff education

SCORR Marketing, Omaha, Nebraska

Account Coordinator - January 2012 to May 2012

Northstar Financial Services Group, Omaha, Nebraska

Marketing Coordinator - January 2011 to January 2012

Presentations

National

- Gonzales, K., Holmes, L., & **Stoltman, A**. (January 2022). Leveraging Faculty Practice to Lead Change Towards Health Equity Across Nebraska. Podium presentation at AACN Doctoral Education Conference. Naples, Florida.
- Gonzales, K., Holmes, L., & **Stoltman, A**. (2021, January 15). Resilience in practice: Adapting faculty practice during a pandemic. Podium presentation at AACN Faculty Practice Pre-Conference. Virtual.
- Gonzales, K. & **Stoltman, A.** (January 2019). Creating and administering a faculty practice fund. Poster presentation at AACN Faculty Practice Pre-Conference. Coronado, California.
- Gonzales, K., **Stoltman, A**., & Fiandt, K. (January 2019). Optimization of faculty practice revenue: Lessons learned from the past four years. Poster presentation at AACN Faculty Practice Pre-Conference. Coronado, California.

Regional

- **Stoltman, A**. & Hendershot, K. (September 2015). Closing the Gap, Iowa Medicaid Expansion and Implications for Nebraska Social Workers. Podium presentation at National Association of Social Workers-NE Annual Conference. Omaha, Nebraska.
- **Stoltman, A**. (October 2016). Evaluating Your Fundraising Strategy. Panel presentation at Iowa Primary Care Annual Conference. Des Moines, Iowa.

State

- 2017 Spring Creighton University Humanities and Fine Arts Alumni Panel Presentation.
- 2017 Fall Creighton University Arts and Science Alumni Panel Presentation.

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Publications

- Gonzales, K., & **Stoltman, A.** (2020). Optimization of faculty practice. Journal of Professional Nursing, 36(1), 56-61. doi: 10.1016/j.profnurs.2019.06.013
- Gonzales, K., Barry Hultquist, T., Holmes, L., **Stoltman, A.**, Fiandt, K. (2022). Rural Midwestern primary care nurse practitioner's transition to practice. The Journal for Nurse Practitioners, 18(3), 292-297. doi: 10.1016/j.nurpra.2021.11.018
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Current Grants and Funding

1. A State-Wide Nursing Education Model for Improving Primary Health Care in Nebraska
   PI: Kathryn Fiandt
   Role: Grant Administrator
   Funding Agency: Health Resources and Services Administration (HRSA)
   Award Total: $2,600,000
   Funding Period: 7/2018-7/2023

2. Developing a State-Wide Primary Care NP Residency through an Academic-Practice Partnership
   PI: LeAnn Holmes
   Role: Grant Administrator and Project Manager
   Funding Agency: Health Resources and Services Administration (HRSA)
   Requested Award: $1,670,000
   Funding Period: 7/2019-7/2023

Awards

1. UNMC SilverU – April 2020
2. UNMC GoldU – June 2022

Personal Outside Activities

3. Board Member – Montessori Coop School