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Promoting Covid-19 Vaccination Rates thru Community Health Ambassadors/ Advocates in Racial/Ethnic Minority Communities

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Abstract

Objective: We describe a community-academic collaboration empowering Community Health Advocates (CHAs), using health promotion strategies, to advance COVID-19 vaccination rates in their respective communities: African American/(Black), Latino, Maya) and populations with economic disadvantage in Omaha, Nebraska.

Methods: We trained and educated newly recruited and existing Creighton University certified CHAs. A communications plan was implemented for COVID-19 community education and vaccine acceptance. Goals were to encourage and increase the vaccination rates in these diverse communities. CHAs facilitated communitywide messaging for vaccine resources and presented in town hall meetings.

Results: From February to July 2021, sixty-five (65) CHAs were trained on COVID-19 vaccine-related topics: Basics of COVID-19 vaccine science, vaccine development timeline, myths vs. facts for overcoming vaccine hesitancy, and CDC Guidelines for preventing community COVID-19 transmission. CHAs experienced 943 educational encounters with residents in community venues such as retail stores, grocery stores, and gas stations, reaching 5,989 individuals. Nearly 3,600 promotional advertising contacts and outreach were facilitated through flyers, brochures, newsletters, public service announcements, newspaper articles, posters, banners, slogans, and public presentations. An average of 127,000 billboard views per week was recorded over 22 weeks. Twelve (12) town hall meetings were facilitated.

Conclusion: We successfully educated and trained lay individuals about COVID-19 vaccines and vaccinations' importance in reducing minority morbidity and mortality. The CHAs subsequently promoted vaccinations through town hall meetings, and on-line church and community encounters, using virtual and in-person gatherings, following guidelines for masks and social distancing recommended by the Center for Disease Control and Prevention. The virtual training format was effective, but with some technical challenges. Given the project size and multilayered needs, we recommend a team technology approach. Future project planning, when not urgent, must include extensive collaboration with community leaders prior to project design and implementation. Impact evaluation should assess vaccination rates due to CHA encounters.

Keywords: Community health advocates; Community-academic collaboration; COVID-19 vaccination

Abbreviations

(CHAs) Community Health Advocates/Ambassadors; (CU) Creighton University; (CDC) Center for Disease and Control and Prevention; (CPHHE) Center for Promoting Health and Health Equity; (REACH) Racial and Ethnic Approaches to Community Health; (SDOH) Social Determinants of Health; (CHW) Community Health Workers; (DCHD) Douglas County Health Department; (NCHF) Nebraska Center for Healthy Families; (OHA) Omaha Housing Authority; (UCOM) Creighton University Communications and Marketing

Introduction

To overcome many pre-pandemic challenges in addressing local health status, extensive evidence documents how many communities have turned to community-based approaches [1-3].

These strategies include engaging trained lay individuals to increase awareness and promote early detection of health risk, resilience, and outcomes; advance community health; and reduce health disparities. Foci may include diabetes, cardiovascular disease (including hypertension), cancer, social determinants of health (SDoH), and much more. These individuals encourage healthy lifestyle changes through health education, address specific health conditions, and help peers navigate healthcare systems. Their roles and titles vary, the latter including Community Health Worker (CHW) [4], Community Health Advocate/Ambassador (CHA), Healthcare or Health Navigator, Lay Health Educator, and Promotores de Salud [5].

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In Phase 1 of this project, we educated and trained new and existing CHAs on the COVID 19 virus biological effects. Then, CHAs informed their communities about the infection's dangers, especially for people with immune compromise and/or chronic disease, and the aged/elderly. CHAs and their communities needed training and education, respectively, in prevention measures such as handwashing and sanitizing, mask wearing and social distancing to curtail infection transmission. The education and training further addressed resources available to help the community with food insecurity, job loss, transportation challenges, healthcare access, childcare, and mental health issues. SDoH and issues of health equity were also discussed.

Topics included housing, job concentrations (e.g., meat packing), education, language barriers, prevalence of chronic diseases and long-standing structural racism [6-10].

Communities of color and people with economic disadvantage experience inequities in SDoH that significantly increase virus-induced morbidity and mortality rates, compared to the White population. Thus, in the 2020 Phase 1 project, to promote COVID-19 prevention, we educated, trained and certified a cadre of existing Community Health Advocates (CHAs) from diverse communities of African Americans (Black), Latinos, Maya and individuals from populations experiencing economic disadvantage and living in public housing in Douglas County and Omaha, Nebraska [11]. Extensive and diverse communication messaging complemented these encounters. The Douglas County Health Department funded the previously reported project and funded this vaccination education and promotion project, using federal resources for COVID.

In Phases 1 and 2, the Center for Promoting Health and Health Equity (CPHHE), a community-academic partnership, was the project driver and developer. Creighton University sponsors CPHHE through distributions of state of Nebraska Tobacco Settlement fund LB692. CPHHE's mission is to eliminate health disparities and promote health equity. The Phase 1 2020 COVID-19 CHA endeavor built on CPHHE's 2014-2018 project to employ a train-the-trainer approach with CHAs to promote physical activity in the Omaha African American community. The earlier project involved a cooperative agreement with the funding Centers for Disease Control and Prevention: The Center for Promoting Health and Healthy Equity Racial and Ethnic Approach to Community Health (CPHHE-REACH) [11-16].

In 2021 COVID vaccinations became available. Since vaccination and boosters significantly reduce hospitalizations, morbidity, and mortality, individuals of color desperately needed COVID vaccinations, as did the general population. In populations of color, COVID-19 vaccination rates were significantly lower. Studies showed that key reasons for vaccination disparities included mistrust related to historical abuses, misinformation, access disparities, falsehoods that science behind vaccine development was unsound, and beliefs in (incorrect) myths about COVID vaccines [17-22]. The Douglas County Health Department (DCHD) data showed that the same underserved populations described in our previous publications were disproportionately affected by COVID-19 and needed enhanced vaccination promotion. Thus, DCHD again funded CPHHE for a CHA-based education and training program. Disparities regarding vaccination acceptance and rates are now much improved but significant booster disparities remain [23].

This paper summarizes how CPHHE ensured that the existing cadre of certified CHAs from communities of color and lower income communities were further educated and trained to enhance COVID-19 vaccination rates through town hall meetings and enhanced diverse communication strategies to reach racial and ethnic minority communities, individuals with economic challenges, and both English and Spanish-speaking audiences. The paper depicts (1) the curriculum, (2) education strategies, (3) outreach strategies, (4) CHA community encounters, (5) data reporting methods (6) town hall approaches and (7) evaluation (See Figure 1 Summary Project Historical Development) (Figure 1).

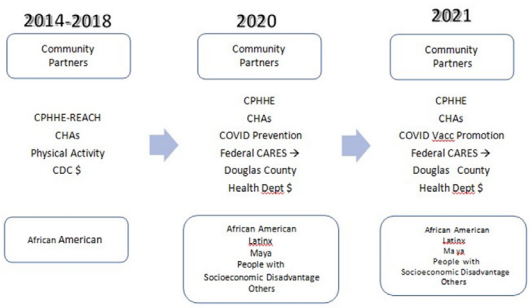

Figure 1: Communication strategies to reach racial and ethnic minority communities, individuals with economic challenges, and both English and Spanish-speaking audiences

The scope of this project required stakeholder collaboration among the Omaha community, academic institutions, and local government. The Principal Investigator (Author OKL) and CPHHE key team members comprised the project Executive Committee. The group met weekly to plan and discusses all project strategies and activities. Community partners included the Nebraska Center for Healthy Families (NCHF); Lee Brown and Associates (Healthcare Consulting Firm); 12 Faith-Based organizations (a community of African American churches); Urban League of Nebraska, Omaha (Author VE); Charles Drew Health Centers; One World Community Health Centers; Omaha (Public) Housing Authority (OHA) (Author SI); the Latino community; and the Maya community; together with the 23 CPHHE Community and Academic Partners and Consultants. The NCHF President (Author DL) led curriculum development with education committee input. The NCHF President was also the main presenter and coordinator for train-the-trainer education and training sessions. The Lee Brown and Associates CEO (Author RLB) developed and implemented marketing and communication plans. A Latina academic partner (Author ISS) and a Latino community partner from One World Community Health Center (Author LV) co-led activities with the Latino community. Maya community leaders (Author LM) collaborated with the two Latino and a CPHHE leader to guide Maya project activities. CPHHE academic partners provided further expertise, advice, and guidance in public health, linguistic, cultural ethnic and ethical issues. Evaluation was designed and implemented by an internal evaluator who died before project completion. Another internal evaluator resumed formative evaluation. An external evaluation group completed data analysis, interpretation, summative (output and outcome)

evaluation, and project reports.

Methods

CHA education and training

Goals and objectives: The current project's overall educational goals and specific objectives for CHAs previously certified for COVID-19 prevention and outreach, and new CHA recruits were:

Goals

- Provide training and education about vaccination issues and promotion
- Facilitate and coordinate community outreach and education.

Objectives

Educational learning objectives regarding community encounters:

- Demonstrate cultural competency and proficiency
- Illustrate respectful and equitable engagement
- Explain health literacy needs
- Understand health systems navigation and access
- Summarize COVID-19 vaccine hesitancy issues

Training objectives for CHA community encounters were:

- Employ cultural competency and proficiency.
- Demonstrate respectful and equitable outreach
- Apply education about COVID-19 vaccines
- Document educational and communication efforts

Curriculum development and education and training sessions

Author DL, NCHF President and community partner led the executive team members collaboratively developed curriculum content and presentation materials. As the COVID-19 pandemic evolved, curriculum content and strategies were commensurately changed. New pandemic guidelines (CDC, DCHD) necessitated adaptations in presentations and discussion cases. The education and training sessions comprised eight (8) consecutive weekly sessions, once a week for 1.5 hours. To advance experiential learning, case studies were discussed in breakout small groups of CHAs, each led by a trained and experienced executive committee member. Sessions were virtual.

Weekly COVID-19 updates from CDC and DCHD preceded case study discussions. The syllabus for the curriculum in Appendix A details session topics and presentation format. Thus, the approach was (1) educational PowerPoint slide presentation with ample question and answer opportunities, and then (2) training through cases developed specifically to reinforce that day's education study discussions in small group settings. Other discussion topics during educational sessions included minorities' greater susceptibility to COVID-19 infection (morbidity and mortality), ethical and cultural considerations in promoting training objectives. Other discussion topics were resources for addressing food insecurity and rent protection.

Case study design and use

Case studies were developed considering emerging evidence, leaders' expertise, and CHAs' experiences and in real time to reinforce the education provided to the CHAs. Case studies fostered dynamic discussion that included peer questions, and emerging issues in the news media. See some examples in Appendix B. These case studies illustrated everyday scenarios and posed circumstances and questions the CHAs might encounter while advising diverse community members in the real world. CHAs and leaders were assigned to a virtual breakout room. The group design ensured that every group member (5-6 participants per group), discussed assigned case studies. At the case discussion outset, the group leader requested volunteers to record the discussion. Another individual read the case and discussion questions aloud. Each room discussed the same cases to ensure training consistency. Breakout groups promoted universal CHA participation and sharing of diverse lived experiences. After 20 minutes of small group discussion, all the participants reconvened to debrief, including discussion summaries. Non-CHA leaders and facilitators commented.

Instructions to the lead facilitator in each breakout room included the following:

- Share zoom screen and exhibit the case study, including case description and discussion questions
- Read the case aloud or ask for a volunteer CHA reader and translate into Spanish as needed
- Identify a recorder and reporter to inform full group discussion
- Guide CHA discussion that addresses assigned questions

Communication strategies and methods

Under Author RLB leadership, the overarching goal regarding community vaccination promotion was to utilize targeted and tailored approaches using public health, literacy based, communication strategies as outlined by the CDC, including social marketing [24].

The communication plan objective was strategically implemented to ensure that messages about COVID-19 and vaccination promotion were disseminated to the minority populations of Douglas County, who were disproportionately affected by the virus. Through previous relationships established by CPHHE and its REACH project, this communication plan was designed to include dissemination of information to social network partners: Public Housing, (serving 4,287 residents), 100 Black Men of Omaha, fraternities and sororities, select churches, African American Empowerment Network, Federally Qualified Health Centers, NAACP, Urban League, Hispanic newspaper, and Native American newspaper. Other community-based organizations and some elected city and state officials were also involved.

Communication plan description: A six (6) month plan was designed to work with community-based organizations and communication media outlets across Douglas County to educate the populace about resources to fight the coronavirus pandemic. Preventive measures like masking, social distancing and vaccination promotion were emphasized. The plan aimed to

strengthen existing efforts regarding COVID-19 testing, access to healthcare, and social services. Some sources utilized for dissemination of information included: Social media, radio, TV, newspaper, newsletters, music, bulletin boards, billboards, and public zoom meetings both in English and Spanish.

Town hall (TH) meetings: The overarching goal of the Town Hall meetings was to provide a forum for community members to discuss pandemic relevant topics and question experts and panelists. The main objective was to help attendees overcome vaccine hesitancy, understand the scientific validity of vaccine development and dispel myths and misinformation.

Infrastructure: A roadmap for the structure of the town hall meetings was developed and reviewed by the Executive Committee (see Appendix C). Meetings were structured to fit cultural and linguistic needs, lasted 1.5 hours, and occurred over six weeks (July 2021-August 2021). For consistency and branding, Creighton University Communications (UCOM) developed and/or approved all communication materials. These materials were translated into Spanish. Bi-lingual (English and Spanish) moderators facilitated Latino town hall meetings. The Maya community town hall presentations and comments were first in Spanish and then translated into the Maya language Q'anjob'al and sometimes English. Leaders used a conference call number to troubleshoot issues during the town hall meetings.

Structural components: Executive Committee members moderated town hall meetings. Selected CHA(s) presented (See Table 1 for role descriptions). Practice sessions piloted strategies and materials to be used during town hall meetings (Table 1).

Table 1: Town hall (TH) meeting structure

TH personnel title	Roles and responsibilities
Welcome	The organizational leader of the town hall welcomed the audience to the meeting and explained the background and purpose of the project. "Leader" refers to any of the following: Pastor for the faith community, leader of the public housing authority or resident leader, Latino community leader, Maya community leader, or leader within the general public.
Moderator	An assigned individual guided and moderated each TH. Tasks included opening the TH, describing the purpose and audience role, and establishing the ground rules for the questions and answers. The moderator introduced the panelists and facilitated a smooth flow to the program (avoiding silent moments).
Co-Moderator	Co-moderators monitored zoom chat room comments and questions, and those from Facebook. Chat questions were consolidated and introduced to audiences during question-and-answer periods.
Panelist	Expert panelists were members of the executive planning team, presenters for train-the-trainer sessions, external experts, and CHAs. Only CHAs comfortable presenting were recruited. Panelists each presented for 5-10 minutes on pre-selected topics fitting their knowledge and expertise. Panelists answered questions as they arose.
Technology Assistance (TA)	TA produced and distributed TH invitations, facilitated meeting entrance (if by zoom), and addressed technical issues. Tasks also included: Control of muting, screen sharing, and background conference call troubleshooting.

The topics and themes of the town hall meetings were pre-selected and varied based upon the target audience. The Maya community, for example, may have had background music that is culturally sensitive that varied from the theme and music selected for the general public town hall meeting. Overarching project themes used in the town hall meetings included: "Don't Hesitate, Vaccinate," or "Myths vs. Facts." These themes were promotionally described as "a serious discussion with health experts and Community Health Ambassadors." COVID-19 music produced as part of the project was played at the beginning of each TH as the audience was entering the meeting and at the end during the evaluation survey.

Implementation of town hall (TH) meetings: The TH meetings were available on two virtual platforms: Zoom and Facebook. Moderators introduced panelists who each spoke for 5-10 minutes. Attendees submitted questions either in advance or posted in the chat room during the town hall meeting. TH meetings concluded with 30-45 minute question and answer sessions.

Town hall evaluation: Attendees completed a brief survey measuring knowledge, attitudes and beliefs. This evaluation was administered during the final 15 minutes of the TH, and available in English and Spanish. No personal identifiers were collected, and data was aggregated for the final evaluation report.

CHA encounters with their community: CHAs were tasked with creating opportunities to meet with their neighbors and community members to impart pandemic and vaccine information and resources. CHAs individually met with community members within their community and provided education on the COVID-19 virus and vaccinations individually and in small groups. There were 5 encounter coordinators representing Omaha (public) Housing Authority, the faith-based community, Latino community, Maya community, and the general public.

An electronic survey tool was created for CHAs to capture information during community educational encounters. Encounter topics included infection preventive measures, COVID-19 testing and overcoming vaccine hesitancy. Each CHA was trained on how to implement the electronic survey using their cell phone and how to report findings. CHAs met weekly with their coordinators to discuss results, additional educational materials needed, and troubleshooting for the delivery of the educational settings. CPHHE staff collected the data from the

database and shared it with the evaluation team.

Evaluation

Evaluation began at project inception. Author JS attended all the planning and executive meetings and helped in the creation of the pre and post tests for all education sessions. After his demise, Author OE and his team were hired as external evaluators who worked closely in collaboration with Authors KN, and EE.

Using the realist theory of evaluation, and applying approaches to determine the import of both qualitative and quantitative data for credible evaluation, each component activity was assessed using mixed methods data collection, review and analysis [25-27]. Each component was then assessed concerning specific data, relationships/relativity between data with a focus on both formative (planning and process) and output/outcome (summative) evaluation.

Phases:

- Evaluation Planning and Monitoring systems development
- Data Collection
- Analyses for formative, process, output and outcome evaluation.

Phase 1: In Phase 1, Author JS submitted a mid-term report which guided the new independent (outside) evaluator to continue and complete the project.

Phase 2: Data were collected on various events and activities that focused on project objectives. Each specific responsible member of the Executive Committee provided reports of their activities, while data collected were housed at CU under the supervision of Author KN and the project staff. After submitting their reports, each member was engaged for contextualization, clarification and data verification.

Phase 3: Formative, process, output and outcome evaluation data were assessed using quantitative, qualitative and mixed methods approaches by the evaluation team.

Monitoring development

In collaboration with the Executive Committee, project coordinators, community key players and partners, data to be collected from activities and events were developed on an ongoing basis. The data variables and values were determined from the implementation procedures and tools, and their procedures were developed from proposed activities and after consultations and committee meetings on what was needed. Data points and data collection procedures were developed and implemented as the project progressed. Evidence was obtained from each event during implementation in the form of a post-event survey.

Results

All 50 Creighton University certified CHAs were invited to the training. We also recruited another 15 individuals from the same diverse populations, totaling 65 CHAs. On average, 50 CHAs attended each session. Absent CHAs attended make up sessions. Completion certificates were not provided to CHAs missing more than two sessions and the make-up sessions.

CHA train-the-trainer education and training

As per the syllabus for the curriculum, the train-the-trainer program employed 18 learning objectives. These 18 objectives guided each weekly session's aims. Each session had 3-5 training objectives that shaped the presentations. The eight weekly sessions trained 50 CHAs using a curriculum predicated on the above objectives. Depending on the topic, target audience needs and the evolving science of the pandemic, presentation length varied between 35-48 slides per session. Pre-session polls illustrated attendees' varied knowledge, attitudes and beliefs about session topics. An overview class of the entire program comprised a "make-up" session for attendees who missed sessions. This session included post training assessment through case studies for qualitative data. CHAs were trained in COVID-19 vaccine compliance, overcoming vaccine hesitancy, how the COVID-19 vaccines were developed and work and town hall meeting facilitation. Results from case study discussions during each training session were qualitative and demonstrated CHA's competency in applying knowledge gained and practical wisdom from years of lived experience within their communities. When breakout sessions resumed for debriefing, CHAs contributed special knowledge and insights about possibly challenging and puzzling community encounters.

Evaluation

After completing all training sessions, a post-assessment survey measured changes in knowledge, attitudes, and beliefs across all 8 weeks. Results from case study discussions during each training session were qualitative and demonstrated CHA's competency in applying knowledge gained and practical wisdom from years of lived experience within their communities. When the general session resumed for debriefing, CHAs contributed special knowledge and insights about possibly challenging and puzzling community encounters. In whole group debriefing, CHAs reported what the small groups discussed, insights were noted, and misunderstandings corrected. Successful breakout sessions and whole group discussions of case studies occurred in 6 of 8 sessions. After completing all training sessions, post-assessment surveys measured changes in knowledge, attitudes, and beliefs across all 8 weeks. Successful breakout sessions and whole group discussions of case studies occurred in 6 of 8 sessions. CHAs reported what the small groups discussed; insights were noted, and misunderstandings corrected. Observations of application of what was learned, and skills gained were also discussed. Attendees' technological capabilities varied. Challenges included Zoom features, online survey responses, posing questions in chat, and muting needs.

Communication

Promotional material specially targeted communities of color to promote the project throughout the Omaha, NE metropolitan area. Nearly 3,600 promotional advertising contacts and outreach were facilitated through promotional flyers, brochures, newsletters, public service announcements, newspaper articles, posters, banners, slogans and public presentations. Over 127,000 total weekly views of billboards over 4 of the 6 months project were recorded (Table 2).

Town hall meetings

Survey results showed that attendees gained new knowledge and would promote vaccination in their family, friends, neighbors and coworkers. Survey results also indicated that the majority viewed the events positively and would likely use the

information with their neighbors. However, a minority of respondents would not use the information to change their vaccination views. One participant indicated they changed their mind and would vaccinate. Of the responses, 91.8% (English survey) and 65% (Spanish survey) were vaccinated. Almost all survey respondents would spread the COVID-19 vaccination promotion message (95% of Spanish survey respondents and 100% of English survey respondents). Also, 93% of English and 96% of Spanish survey respondents gained new information. Attendees' technological capabilities vary. Challenges included Zoom features, online survey responses, posing questions in chat, and muting needs. The evaluation survey covered 19 town hall meetings. 11 town hall meetings in English (6 in June and 5 in July, with a total of 80 participants-33 in June and 47 in July, and 8 in Spanish (4 in June and 4 in July, with 25 survey respondents in Spanish-11 in June, 14 in July). The highest survey participation days in English were June 5th (18), June 15th (16) and July 17th (13) while for Spanish, they were July 20th (9) and June 18th (4). The town hall events were held by zoom conference and some were streamed live on social media (Facebook), while one was streamed on a faith-based organization's website.

Medium used	Type	Results
Newspaper articles	Omaha Star	8 (Circulation: 2500)
	Mondo Times	3
Radio	Ads	25 (23,000 digital impressions)
	Appearances	2 (95.7 FM)
Newsletters	Creighton University email	18 (300 individuals)
	Creighton University HS-MA-CA	2
	Church Bulletins	Weekly services
Presentations	Juneteenth Festival, Malcolm X Foundation (performed RAP music with dancers); Native Omaha Celebration Golf Outing; Native Omaha Celebration parade (performed Rap COVID-19 message)	6
Testimonial recordings (Why did you come to get vaccinated? Would you encourage others to get vaccinated)	Public testimonials Recorded at Morning Star Church vaccination clinic	4
Promotional materials	Magazines-Revive (#); Flyers, Posters, Banners, Message slogans; Public Service Announcements (PSAs); Vaccination messages on T-shirts for staff; CDs promoting COVID-19 safety and vaccination promotion (2 in English; 1 in Spanish)	715
Billboards (4 months; by location in Omaha, NE Metropolitan Area)	13th and Mason (Location 1)	50,727 weekly views
	39th and Ames	35,773 weekly views
	36 and Q St.	40,678 weekly views

CHA community encounters

CHAs experienced 943 educational encounters with residents throughout communitywide venues from April to August 2021. There were 5,989 people reached through CHA encounters. Common locations where the encounters took place included churches (17.5%), general community (42%), Latino Community (.11%), Maya Community (.21%), Omaha (public) Housing Towers (12.51%), and Other (e.g., casinos, dollar stores, gas stations, parks, grocery stores) (27.47%). Some encounters took place using cellular devices to conduct conversations or text messaging (5% of the "Other" category). The encounters' physical location does not reflect the extent of the outreach to a specific population.

Topics discussed during the encounters included wearing a mask (19.81% n=724); social distancing (16.42% n=600); washing/sanitizing hands (14.09% n=515); COVID-19 Testing (6.46% n=236); Other (1.86% n=68); vaccine education/literacy (10.15% n=371); vaccine hesitancy (10.70% n=391); vaccination sites (11.11% n=406); vaccination side effects (9.41% n=344).

Evaluation

All the project goals were achieved with areas of innovation and diligence in implementation. The implementation required intensive planning, formation, implementation science and assessment. Cultural competence and respect were embedded in all implementation areas. The project was well planned and implemented with high fidelity. Data were collected from project activities, including pre and post-evaluation (attendance, duration, locations of events, Zoom and social media attendance). Town hall meetings survey participants N=96 (73 English surveys and 23 Spanish surveys). Communications outputs are reported.

Recommendations

- Process and formative evaluation should be ongoing throughout the project.
- Enhance the curriculum with pre and post-test assessments of CHAs and ensure tests are administered and completed prior to and after education and training sessions.
- Pre-project, develop a data collection, organization and monitoring plan, rather than during the project and a cen-

tralized data repository to inform and enhance quality improvement and effectiveness.

- Add pre-town hall surveys to complement post-town hall surveys.
- Employ a system of standardized data items and collection, based on published best practices.

Discussion

To promote COVID-19 vaccination for racial and ethnic minorities and people with economic disadvantages, this paper shows how the education and training of CHAs can empower outreach to their diverse communities. The project built on CPHHE's existing community-academic infrastructure and CPHHE-Douglas County Health Department collaboration. Existing and new CHAs were provided educational and training sessions that included formal presentations and case discussions. The case scenario reviews helped CHAs anticipate real-world, practical challenges, questions, and issues they could face in respectfully promoting COVID vaccination. Selected CHAs and project leaders then practiced and facilitated town hall meetings with community members, everything online. Extensive community outreach followed through varied communication strategies. Evidence documents how CHAs, and people in comparable roles, significantly advance community health. Our current project is a "nuts and bolts" example, targeting COVID vaccination promotion through CHAs that informs other community efforts. The appendices provide details. The town hall practices and deliveries largely achieved their goals. But needs for practical adjustments emerged. The town halls' impact is unclear because their influence on vaccination rates was not assessed. Therefore, whether a town hall caused a community member to get vaccinated is yet unknown. This project had successes and challenges at structural (e.g., technology approach and personnel changes) and process (e.g., implementation) levels. For example, the structural approach effectively developed the curriculum through typical lesson planning in secondary education (e.g., set learning goals and objectives for each lesson). The technology approach to the project experienced structural challenges (e.g., one person was identified to address all technical problems). Given the project size and multilayered needs, a team technology approach would have helped.

Process level successes were that the CHA education and training sessions achieved their objectives, communication strategies' implementation, and CHAs' knowledge and skill applications in the simulated real-world scenarios. We predict that CHAs who successfully applied skills learned during the training will more likely apply those same skills at community encounters. Also, each case study was an opportunity to identify the appropriate scope of CHA practice and when to refer peers to community resources. Importantly, addressing case study conundrums fostered CHAs' orientation to overcome challenges during real community encounters. Such challenges would include vaccine hesitancy for diverse reasons. Town hall meetings helped broaden the project's community outreach. The town hall digital online format was generally effective. However, a technical challenge in implementation was unavailable Wi-Fi to residents of the public housing buildings. An alternative location was established for in-person TH attendance, requiring social distancing, masking, and paper surveillance for the evaluation. In such instances, a television screen and computer projected the TH meeting. For specific community town halls, a further requirement was understanding communication styles, skills, and local issues (e.g., access to Wi-Fi and other technology, and social media literacy level). For example, some potential attendees were unaware of how to use Zoom and Facebook, the two platforms used throughout the project. Unfortunately, these requirements prevented some from town hall participation. We noted not only digital divides (e.g., inconsistent WiFi access), but also generational gaps in technology literacy (e.g., related to muting, chat room and digitally raising your hand). Both challenges limited town hall access and post-town hall survey participation. How to address such challenges must be considered for similar project planning. As pandemic restrictions are lifted, CHAs can enhance vaccination promotion through face-to-face or virtual settings as appropriate and feasible. Changes in vaccination rates related to participation in this project were not assessed. Our project was not tasked with this measure. The purpose of this project was to train CHAs with the ultimate purpose of promoting vaccination among populations disproportionately affected by COVID-19. Evidence evaluation using verification, contextualization and clarification provided opportunities for continuous quality improvement and identification of needs for project enhancement. However, the post-data application of these techniques would provide opportunities for quality improvement after the project.

Limitations

- Surveys and polls were self-reported and thus non-objective.
- Measuring vaccination rate impact was not possible (impact evaluation).
- Pre-intervention data collection (e.g., pre-surveys before each training session) would have strengthened evidence on outcome and impact.

Conclusion

This paper describes a community-academic collaboration empowering CHAs to promote COVID-19 vaccination in racial and ethnic minorities and populations with economic disadvantage in Omaha, Nebraska. CHAs also stressed that individuals' vaccinations reduce morbidity and mortality from COVID-19. CDC Guidelines for preventive measures were emphasized throughout. Douglas County Health Department funded the project through the Federal CARES Act. Existing and newly recruited CHAs were trained through educational sessions to promote COVID-19 vaccination. Emphases were dispelling misinformation, overcoming mistrust, and respectful and culturally appropriate encounters. Communication mediums were town hall meetings, church gatherings, and other community outreach that included residents in public housing. In training sessions, case studies effectively simulated real-world scenarios that helped CHAs anticipate challenges. CHAs then successfully initiated their own community outreach in-person or digitally. Vaccine promotion also included diverse public communication outlets and formats. Diverse, communitywide, communication strategies complemented CHA work. Plans for data collection, organization, management, and storage should be evaluated at project inception. The virtual digital format

was generally effective, but some technical challenges emerged. Given the project size and multilayered needs, we recommend a team technology approach. Future project planning, when not urgent, must include extensive collaboration with community leaders prior to project design and implementation. Further, impact evaluation is imperative regarding vaccination rates related to CHA encounters or attending town hall meetings.

Implications

Community-academic partnerships can empower Community Health Advocates (CHAs) to address health inequities, including COVID-19 issues. Partners bring complementary knowledge and skills to CHA education and training, where community partners ensure cultural fit. For example, each partner group can contribute to developing and facilitating vaccination promotion programs. In populations who are traditionally underserved, CHAs can implement strategies that include virtual or in-person town hall meetings, church gatherings and community encounters. Given predictable CHA turnover, succession planning is crucial for project sustainability. Data collection, organization, management, and storage approaches should be evaluated and embedded at project inception. How to overcome challenges in technology access (digital divide) in underserved populations needs further investigation. Funding for equipment, services and user training are key for closing the digital gap.

Appendix A: Syllabus

Covid-19 Phase II Community Health Advocate Training

Co-Training Facilitators [PROJECT EXECUTIVE TEAM NAMES]

Lead Training Facilitator [TRAINING COORDINATOR NAME(S)]

Training objective: The goal of this training is to reduce COVID-19 cases and death rates in Douglas County through education and train-the-trainer interactive activities to diverse and multicultural Creighton University certified Community Health Advocates.

Learning objectives: Through weekly interactive participation, individuals completing this training will be able to:

1. Describe the goal of the Creighton CPHHE COVID-19 Phase II Project.
2. Discuss the history of vaccines and foundational ethical principles.
3. Share information regarding COVID-19 vaccine to the community in Douglas County and Nebraska.
4. Share COVID-19 resources and facilitate referrals for those in need of vaccination.
5. Collect and provide data to project staff regrading vaccine education and dissemination of information.

Training logistics

Dates: Thursdays, March 11 through April 29, 2021

Time: 5:30 PM to 7:30 PM

Location: Zoom

Training Week 1-March 11th

Topics

- Review Douglas County COVID-19 Vaccine Dashboard
- Pre-test
- Review COVID-19 and its impact on communities of color and other populations at risk
- COVID-19 and chronic diseases review
- Introduction to Vaccine 101, including myths
- COVID-19 Vaccine and COVID-19 Variants: What variants are, why you should be vaccinated
- Introduction to Ethical and cultural Issues

Training Week 2-March 18th

Topics

- Review Douglas County COVID-19 Vaccine Dashboard
- Pre-test
- Historic and Current Mistrust
- Unethical Medical Research History and Present Concerns
- Structural Racism
- Institutionalized Racism
- Vaccine Facts

Activity: Facilitated case study discussion in small groups *via* zoom break out rooms

Training Week 3-March 25th

Topics

Review: [COUNTRY NAME] COVID-19 Vaccine Dashboard Stats

- Pretest
- What are trust and trustworthiness?
- Ethical principles: Focus on Respect and Fairness
- Review ethical factors in COVID-19 vaccine development
- COVID-19 Vaccine Updates-Guidance, Ordinances, New Findings/Discoveries

Activity: Facilitated case study discussion in small groups *via* zoom break out rooms

Training Week 4-April 1st

Topics

- Review [COUNTY NAME] COVID-19 Vaccine Dashboard
- Pretest
- COVID-19 Vaccine Updates-Guidance, Ordinances, New Findings/Discoveries COVID-19 and Pregnant Women
- Ethical Principles Continued-Focus on Vaccine Ethics

- Activity: Facilitated case study discussion in small groups *via* zoom break out rooms

Training Week 5-April 8th

Topics

- Review [COUNTY NAME] COVID-19 Vaccine Dashboard
- Pre-test
- Describe what the COVID-19 vaccine does
- Summarize role of data and medical science in vaccine development
- Review ethical factors in COVID-19 vaccine development
- Expanded reasons to recommend COVID-19 vaccination
- Types of tailored COVID-19 Vaccine Communication/ Messaging

Activity: Facilitated case study discussion in small groups *via* zoom break out rooms

*Training Week 6-April 15th

Topics

- Pre-test
- Review [COUNTY NAME] COVID-19 Vaccine Dashboard
- Distribution of the COVID-19 Vaccine: Issues and Challenges-J and J Pause
- Vaccine Ethics
- Why Get the Vaccine

Activity: Facilitated case study discussion in small groups *via* zoom break out rooms

*Revised to reflect Johnson and Johnson Pause and subsequent actions that needed to be addressed by the trainers and facilitators.

Training Week 7-April 22nd

Topics

- Review [COUNTY NAME] COVID-19 Vaccine Dashboard
- Pre-test
- Delivering COVID-19 Community Messaging/Education
- Review of vaccine myths and strategic responses
- Town hall Meetings tailored for Faith based organizations/ Public Housing Organization/Latino/Maya Communities
- Data Collection Training

Activity: Facilitated case study discussion in small groups *via* zoom break out rooms

Training Week 8-April 29th

Topics

- Review [COUNTY NAME] COVID-19 Vaccine Dashboard
- Pre-test
- Review of core course elements
- Post test
- Graduation ceremony
- Next Steps.

*Please note that new information regarding COVID-19 was discussed as it became available each week.

Appendix B: Few Selected Case Studies

Case Study #1

Episode 1

Mr. Jones oversees the largest housing authority in Omaha. He is 45 years old. Last week the Pfizer's booster vaccine was brought to the organization. The instruction was to first give the vaccine to individuals aged 60 and over. Mr. Jones wants to use his position to be one of those that get the vaccine first.

Is this a right thing to do?

- Why or why not?

Episode 2

Mr. Jones has diabetes. That is his reason for wanting to get the vaccine early.

- Is this a good reason?

Episode 3

Mr. Jones is African American. He knows African Americans die more often from COVID-19 infection than others do.

- At age 45, is being African American and diabetic a good reason to get the vaccine earlier, when it is only being given to those 60 years and older?

Episode 4

Mr. Jones succeeded in getting the vaccine. Suddenly his phone rings. It was his 40 year-old wife. He told her that he got the vaccine. His wife begged him to help her also get the vaccine early.

- What should Mr. Jones do?

Episode 5

- A week after he got the vaccine, Mr. Jones' father wanted to visit them. His dad had not seen his grandchildren in 1 year because of the pandemic.

What should Mr. Jones say to his father?

Episode 6

Mr. Jones's father visited. He told Mr. Jones that he had just been diagnosed with cancer.

- Should the father take the vaccine?

Episode 7

All the organization's staff wanting the vaccine have received it. Some vaccines are left over.

- Should Mr. Jones's father get one of the leftover vaccines assigned to OHA?

Case Study #2

Maria tried to attend a vaccination site meant to serve a hard-hit Latinx neighborhood, but she could not get registered to get the vaccine because it appeared more Whites from other suburban neighborhoods were able to register and obtain the vaccine ahead of her.

- What should Maria do?
- What should health departments do to prevent this?
- How can community agencies/CHAs help Maria?

Appendix C: Town Hall Structure Template

Purpose: The purpose of the Town Hall meetings is to provide a forum for community members to discuss topics of interest and ask questions of experts and panelists regarding COVID-19. The Town Hall meetings are an added feature of our COVID-19 Phase 2 Project that proposes to assist minority members of the North and South Omaha community to learn more about the COVID-19 vaccine efforts in Douglas County. A major goal is to help individuals to overcome hesitancy to receiving the COVID-19 vaccine.

Welcome role: The organization leader will welcome the audience to the town hall meeting. This will be [NAME OF COMMUNITY LEADER] for the [POPULATION/COMMUNITY/TARGET AUDIENCE]. Others willrepresent their organizations. Public Housing Organization, Latino, Maya, General Public etc. as appropriate. (Subject to modification)

Leaders of the [SPONSORING ORGANIZATION NAME] as available will explain the background and purpose of the [Project Name]. (Subject to modification)

Moderator role and responsibility: A single individual will be assigned to each TH to guide the event. This role includes opening the town hall and describing the purpose of the meeting, the role of the audience and to establish the ground rules for questions and answer session, muting chat room, etc. The moderator will introduce the panelists, monitor the chat room comments and questions. Keep meeting flowing to avoid silent periods etc.,

Co-moderator role and responsibility: Monitor the Zoom (or other platform) chat room comments and questions. (Training will be provided for facilitators as needed). Consolidate questions and introduce them to the audience and determine who on the panel can best answer the question during Q and A session. Some questions may lend themselves to answers by each panelist. (Subject to modification)

Panelist role and responsibility: Each town hall meeting will include a panel of experts, consisting of a combination of those who have provided instruction during the CHA training, members of the executive planning group, external experts and CHAs from the various groups (AA, Latino, Native American, Church, public housing organization, etc.) Only those who are comfortable presenting and are available to do so should be selected Alternates should be identified.

Next steps in preparation: This individual will develop the flyer/invitation and send it to the group leader and to Project Lead. This person will facilitate entrance into the meeting and handle any technical issues that arise during the Town Hall. Functions include control of muting, screen sharing, behind the scene conference (leaders of the Town Hall should have a cell phone number to call each other for troubleshooting).

Possible panel topics (as relevant to current topics):

- Pandemic update (national and local stats)
- Vaccine development and availability
- COVID-19 Impact on the Minority Community (health issues)
- Vaccine hesitancy
- Myths and facts--CHAs
- Latest CDC guidelines (masks, social distancing, vaccination sites)

Potential town hall themes: "Don't Hesitate, Vaccinate." "Facts vs. Myths"

[A serious discussion with health experts and Community Health Ambassadors (CHAs)]

Agenda:

- Our COVID 19 music will be played at the beginning while audience is entering the meeting and at the end during the evaluation survey
- The TH will be available on both Zoom, Facebook and [SPONSORING ORGANIZATION NAME] website
- Panelists will make a 5-10 minute statement on assigned topic
- Hold pre-meeting with panelists (mock town hall)
- Describe agenda to participants and adhere to it
- Request participants to submit questions in advance of TH and in the chat room during the panelist remarks
- Questions in the chat during the TH to be answered at the end
- Leave 30 to 45 minutes for questions at the end
- Start and end on time
- The evaluation link to survey questions will be entered into the chat room at the end of the town hall meeting

Next steps in preparation:

- Dates and times to be determined. Each TH will be 1 and ½ hrs.
- TH for FAITH BASED group. The coordinator will lead the decision on who will serve as moderator and for each TH.
- TH for [PUBLIC HOUSING ORGANIZATION NAME] (1 town hall meeting consisting of representatives from [BUILDINGS] and other residents). The TH Coordinator will lead the decision on who will serve as the moderator,

co-moderator and panelist for each TH.

- TH for Latino group (2 town halls). The Latino Coordinator will decide on the moderator and co-oderator and panelist for each TH.
- TH for Maya group (2). The Maya Coordinator decides on the moderator, co-moderator and panelist for each TH.
- The TH that will be open to the general public (2) will be planned and implemented by [PROJECT LEAD FOR SPONSORING ORGANIZATION] and the executive team.

Time and dates:

- Each town hall meeting will last 1 and ½ hours.
- The town hall meetings will consist several sessions. The first session will occur on [DATE OF 1ST TH] and the last TH should take place by the first week in [ENTER END DATE HERE].
- No meetings are to be scheduled on [ENTER ANY BLACK-OUT DAYS OR DATES]. Each TH group should identify their dates and submit to [TH DATE COORDINATOR NAME] as soon as possible, and no later than [ENTER DEADLINE DATE HERE].
- The first town hall meeting was scheduled and occurred on [ENTER DATE HERE].
- The second town hall meeting was scheduled and occurred on [ENTER DATE HERE]
- Scripts for each panelist topic should be developed and approved for continuity of each Town hall meeting.

Invitation/notification process for Covid-19 executive members prior to each TH: All names of moderators, panelists, including pictures, titles and any slide presentations must be submitted to [TECHNOLOGY LEAD PERSON and PROJECT LEAD] [HOW MANY DAYS PRIOR HERE] prior to the town hall date. Production materials can be submitted any time prior to the 7 day deadline.

- There will be no access to Zoom meetings until 30 minutes before start time
- To access Zoom, click on the link on the marketing flyer/invitation. The zoom meeting can be accessed *via* the open link, Facebook or [ORGANIZATION NAME] website, if available.
- The behind-the-scenes conference number is [ENTER NUMBER HERE] and will remain the same for each TH.
- Each zoom meeting will have a different ID code but this not needed to access the TH.
- TH rehearsals should use a separate Zoom link.

Invitation/notification process for Covid-19 executive members prior to each TH:

- [TECHNOLOGY PERSON LEAD] will send completed TH invitation/flyer to [PROJECT LEAD] and to the appropriate TH group leader
- All [FAITH BASED LEADER] will receive the TH invitations from [FAITH BASED COORDINATOR/ORGANIZOR]
- Latino group will receive the TH invitations from [LATINO GROUP LEAD]
- Maya group will receive the TH invitations from [MAYA GROUP LEAD]
- Public housing group will receive the TH invitation from [PUBLIC HOUSING GROUP LEAD]
- [PROJECT SPONSORING ORGANIZATION NAME] partner group will receive the TH invitation from [PROGRAM COORDINATOR]
- All CHAs will receive the TH invitation from [CHA COORDINATOR FOR THE PROJECT]
- All people on the COVID-19 newsletter e-mail list will receive the TH invitation from [TECHNOLOGY PERSON LEAD (IF RESPONSIBLE FOR NEWSLETTERS)]

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Conflict of Interest

None.

References

1. Institute of Medicine (US) and National Research Council (US) Roundtable on Health Disparities. (2009) Focusing on children's health: Community approaches to addressing health disparities. Workshop Summ Nat Acad Sci Engg Medicine.
2. Miller RL, Shinn M (2005) Learning from communities: Overcoming difficulties in dissemination of prevention and promotion efforts. Am J Community Psychol 35(3-4):169-183.
3. Sullivan JL, Adjognon OL, Engle RL, Shin MH, Afable MK, et al. (2018) Identifying and overcoming implementation challenges: Experience of 59 noninstitutional long-term services and support pilot programs in the Veterans Health Administration. Health Care Manage Rev 43(3):193-205.
4. CDC (2020) Resources for community health workers,

community health representatives, and health promoters.

5. Office of Minority Health & Health Equity (OMHHE) (2019) Promotores de salud/community health workers.
6. Núñez-Cortés R, Ortega-Palavecinos M, Soto-Carmona C, Torres-Gangas P, Concha-Rivero MP, et al. (2021) Social determinants of health associated with severity and mortality in patients with COVID-19. Gaceta Medica de Mexico 157(3):263-270.
7. Caron RM, Adegboye ARA (2021) COVID-19: A syndemic requiring an integrated approach for marginalized populations. Front Public Health 9:675280.
8. Chatters LM, Taylor HO, Taylor RJ (2020) Older black americans during Covid-19: Race and age double jeopardy. Health Educ Behavior 47(6):855-860.
9. Lundon DJ, Mohamed N, Lantz A, Goltz HH, Kelly BD, et al. (2020) Social determinants predict outcomes in data from a multi-ethnic cohort of 20,899 patients investigated for covid-19. Fro Pub Health 8:571364.
10. Powell-Wiley TM, Baumer Y, Baah FO, Baez AS, Farmer N, et al. (2022) Social determinants of cardiovascular disease. Circ Res 130(5):782-799.
11. Ekúndayò O, Kosoko-Lasaki O, Smith JM, Hayashi GI, Sanders R, et al. (2020) Neighborhood characteristics and effects on physical activity in an urban minority community-application of health belief model to findings from Creighton University center for promoting health and health equity (CPHHE_REQCH) initiative. Int J Health Prom Educ 58:199-222.
12. Stone JR, Kosoko-Lasaki, Brown SKR, Smith JM, Lassiter D, et al. (2021) COVID-19 education: Reducing COVID-19 pandemic morbidity and mortality in the minority population through education and training of diverse community health. J Comm Med Health Educ 11(4).
13. Smith J, Ochuba O, Kosoko-Lasaki O, Stone J, Ejike E (2021) Community health ambassadors' work challenges covid-19 spread in spatially segregated minority communities in Omaha, Nebraska. J Health Sci Educ 5(2): 208.
14. Stone JR, Kosoko-Lasaki SK, Jackson SP, Lassiter D (2021) Community-academic collaboration and ethics: Building on the center for promoting health and health equity-racial and ethnic approaches to community health (CPHHE-REACH). J Comm Med Health Educ 11(3):708.
15. Kosoko-Lasaki O, Ekúndayò OT, Smith J, Ochuba O (2019) Urban minority community safety and its impact on physical activity: The center for promoting health and health equity-racial and ethnic approaches to community health (CPHHE-REACH) initiative. J Nat Med Assoc 111(3): 334-344.
16. Kosoko-Lasaki O, Stone JR, Smith J, Brown RL (2017) The center for promoting health and health equality's racial and ethnic approaches to community health program. J Comm Med Health Edu 7(3):1-6.
17. Balasuriya L, Santilli A, Morone J (2021) COVID-19 vaccine acceptance and access among black and latinx communities. JAMA Network Open 4(10):e2128575.
18. Bateman LB, Hall AG, Anderson WA, Cherrington AL, Helova A, et al. (2021) Exploring covid-19 vaccine hesitancy among stakeholders in African American and latinx communities in the deep south through the lens of the health belief model. Am J Health Prom 8901171211045038.
19. Kricorian K, Turner K (2021) COVID-19 vaccine acceptance and beliefs among black and hispanic Americans. PLoS One 16(8).
20. Reverby SM (2021) Racism, disease, and vaccine refusal: People of color are dying for access to COVID-19 vaccines. PLoS Biology 19(3): e3001167.
21. Safo SA (2021) Exploring barriers and facilitators to covid-19 vaccine uptake among black and latinx communities. JAMA Network Open 4(10):e2129675.
22. Thompson HS, Manning M, Mitchell J, Kim S, Harper FWK, et al. (2021) Factors associated with racial/ethnic group-based medical mistrust and perspectives on covid-19 vaccine trial participation and vaccine uptake in the US. JAMA Network Open. 4(5):e2111629.
23. Demographic characteristics of people receiving covid-19 vaccinations in the United States.
24. CDC (2022) Communication strategies; Health literacy.
25. Mark MM, Henry GT, Julnes G (2000) Evaluation: An integrated framework for understanding, guiding, and improving policies and programs. Wiley.
26. Coryn CLS, Loakes LA, Westine CD, Schroter DC (2011) A systematic review of theory-driven evaluation practice from 1990 to 2009. Am J Evaluation 32(2):199-226.
27. Donaldson S, Christie C, Mark M (2015) Credible and ac-