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ARCHWAY: an innovative educational program advancing the public health workforce

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Abstract

Background Community health workers (CHWs) are vital yet often invisible contributors to care coordination, health equity, and public health (PH) in medically underserved areas. The **Atlanta Regional Community Health Workforce Advancement (ARCHWAY) Program** leverages cross-sector partners to increase the number of CHWs on integrated care teams in metro Atlanta in the United States.

Methods The ARCHWAY Program provides an innovative educational curriculum guided by United States Department of Labor CHW competencies and cross-walked with the Georgia CHW Initiative competencies. The 12-week in-person/online curriculum includes 155 h of content on becoming a CHW, mental health first aid, social determinants of health, trauma informed care, population health, community outreach, engagement, and capacity building, resiliency, communication, care coordination, advocacy, emergency preparedness, health promotion/disease prevention, 20 h of simulation including motivational interviewing, point of care testing, first aid, and 80 h of experiential learning through field placements. Project team members represent racial, ethnic, linguistic, and gender diversity ensuring culturally congruent content.

Results Since program inception, the public health workforce in the region has been expanded by over 200 CHWs to date (goal of 446 CHWs) with specialized training offered in both English and Spanish.

Discussion Positioning well-trained CHWs as members of integrated care teams promotes health equity by advancing PH, strengthening the PH workforce, reducing health disparities, and helping underserved populations address social determinants that can undermine health. The ARCHWAY program, by increasing CHW employment readiness through developing field placements with cross-sector partners, aspires to set the standard for apprenticeships in CHW training programs.

Keywords Community health workers, Public health, Workforce, Health equity, Prevention

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Text box 1. Contributions to the literature

- The public health workforce is underdeveloped and CHWs lack standardized training.
 - Lack of health promotion, disease prevention, and care coordination activities at the point where people live is contributing to poor health outcomes.
 - Public health policies are urgently needed to promote equity essential to the health of Americans.
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The COVID-19 pandemic painfully revealed the widening inequities and health disparities that people who live in under-resourced communities across the United States (U.S.) are experiencing. These communities are often economically and medically underserved. Their residents frequently have multiple chronic conditions, have limited healthcare access, and do not always trust the mainstream public sector agencies that are supposed to serve them, thus, predisposing many to severe disease exacerbations and poor physical and mental health. While the reasons for these poor health outcomes may vary, a constant is the limited resources that are available to them, especially those that approach treatment and support via a “whole person” lens, that is, centering care around assessing and addressing social needs and other factors related to the social determinants of health (SDOH). SDOH are the conditions in the environment where people live and work that affect various health conditions and risks, day-to-day functioning, and quality-of-life outcomes [1, 2]. Given their connections to the communities and the trust they garner among those they serve, community health workers (CHWs) have emerged as connectors and practical providers of supportive health and social services; they are well-positioned to work with hard-to-reach populations and influence health outcomes across the U.S. Unfortunately, in spite of their growing presence, this public health workforce is underdeveloped in this country.

Background

Often invisible, CHWs are lay frontline workers with deep ties to and demonstrated working knowledge of the communities and individuals they serve. Because of their close community connections, lay CHWs can often succeed where highly credentialed providers cannot in connecting with hard-to-reach populations. With their outreach efforts addressing SDOH, CHWs can advance health equity for individuals in underserved areas in the U.S. by establishing relationships and building community trust to encourage individuals to seek care, continue care and treatment, and adopt healthy behaviors that result in better health outcomes [3]. CHWs can strengthen communities’ connections to health care

providers and community trust in health care information, thus improving health outcomes by connecting at-risk individuals to local resources, social supports, care coordination, and home and community-based services [4, 5]. For example, CHWs as peer navigators have shown to be the most promising strategy to increase the likelihood that persons living with HIV connect to community healthcare and not fall off treatment during crises such as returning to the community after a jail stay [6–8]. Since the start of the COVID-19 pandemic, CHWs became much more visible and critical to mitigating the impact of this disease through proactive community education and engagement, and by implementing vaccine outreach [9]. They continue to lead education, access, and community-based health promotion initiatives post-pandemic. Nonetheless, many communities in the U.S. lack CHWs or have CHWs informally trained by a healthcare organization on the job.

Atlanta’s population would greatly benefit from more well-trained CHWs, especially in the five counties with risk factors, poor health outcomes, and health professional shortage areas (HPSAs) targeted by the ARCHWAY Program. Georgia has not yet formalized a CHW certification program, but the Georgia Department of Public Health’s CHW Initiative documented numerous existing gaps in CHW service delivery. With a ranking of 46 out of 50 for healthcare access [10], Georgia would benefit from the increased healthcare access and cost savings from reduced emergency department visits, hospitalizations and readmissions, and nursing home placements that a state policy for CHW full integration into the healthcare system would yield [11]. Well-trained CHWs are positioned to impact basic health needs and improve health equity [12], and they are particularly effective in urban areas like Atlanta. Collaborative teams of CHWs and nurses have created a program for low-income persons with, or at risk for, hypertension, diabetes, and/or overweight that was evaluated to be accessible, empowering, and successful [13]. Other evaluation research determined that CHWs are highly effective in reaching patients and that programs should tailor community health work to the unique needs of the program’s purpose and target population for maximum impact [14]. Depending on the content learned, field training, and scope of practice, CHWs can be prepared for work with community-based organizations, work with health-focused community-based organizations, or ambulatory care settings [15]. They play an essential role in community-based participatory research studies [16]. The paper aims to describe the Atlanta Regional Community Health Workforce Advancement (ARCHWAY) Program, an innovative educational curriculum offered

by a school of nursing in the southeastern U.S. that leverages cross-sector partners to increase the number of CHWs on integrated care teams. The program is funded through the *American Rescue Plan* and administered by the U.S. Department of Health and Human Services (DHHS) Health Resources and Services Administration (HRSA) to expand the nation’s community and public health workforce. Trainees receive a \$3,500 stipend paid biweekly over the 12-week program.

Educational program

The ARCHWAY Program is expanding, extending, and upskilling the public health workforce by training new and existing CHWs in standardized competencies, increasing CHW employment readiness, and advancing health equity and support for underserved communities in Atlanta, GA. The curriculum was developed after conducting an environmental scan of existing CHW programs and current CHW competencies and completing a needs assessment including the following domains: (1) social determinants of health factors, (2) health equity, (3) populations at highest risk for health disparities, (4) health and technology literacy, (5) leadership and communication skills, (6) emergency response, (7) vaccine hesitancy, (8) prevention and treatment of chronic diseases, and (9) digital literacy competencies of critical thinking, online safety skills, digital culture, collaboration and creativity, finding information, communication and netiquette, and functional skills.

The 12-week curriculum includes 155 h of didactic learning, 20 h of simulation, and 80 h of experiential learning through field placements. Program goals are listed in Table 1. The curriculum was developed and mapped to the United States (U.S.) Department of Labor CHW competencies aligned with registered apprenticeship programs (RAP) and cross-walked with the Georgia CHW Initiative competencies. Selected examples are illustrated in Table 2.

Prospective participants apply online at www.georgiaichw.org and must be 18 years or older and high school

graduates or completed general educational development (GED) equivalent. Participants are sent welcome emails, and they are asked to complete a demographic survey. Once this survey is complete, applicants are invited to participate in the ARCHWAY program. Demographics of CHW trainees are listed in Table 3. Enrollment for each 12-week session ranges between 28 and 54 participants. Faculty include subject matter experts (SMEs) who are nurses, public health professionals, researchers, social workers, community health workers, and mental health professionals. Professional actors provide motivational interviewing practice.

Online modules

In collaboration with SON’s continuing education department, instructional designers, and SMEs, the ARCHWAY team developed 55 engaging multimedia eLearning modules, in English and Spanish, including assessments and knowledge checks available on the Canvas Learning Management System and Catalog Cloud platform. In addition, the team partnered with two additional school of nursing HRSA-funded projects, Atlanta’s Resiliency Resource for frontline Workers (ARROW) and Talk with me Baby to offer educational content on resiliency and childhood literacy developed as part of their work [17]. Table 4 includes the weekly asynchronous online module offerings and their associated learning objectives.

In-person sessions, simulated-based learning, and skills

The ARCHWAY Program is offered every 12 weeks with start dates in January, April, July, and October with weekly online modules augmented with four one-day in-person sessions including 20 h of simulation at Weeks 1, 2, 6, and 10. During the Week 1 session, participants complete and are certified in Mental Health First Aid. Week 2 begins with an orientation and review of the course calendar, an introduction to the field placement process, and documentation of individual and group visits. The visit log is provided as a supplemental file. The Atlanta Fulton Family Connections Executive Director

Table 1 ARCHWAY program goals

Program Goal	Description
1	Expand the public health workforce by training new (75%) and existing (25%) CHWs and with specialized training and financial support to offset expenses that would impede success in training.
2	Extend and upskill the public health workforce by developing a new curriculum to increase the knowledge, skills, and competencies of new and existing CHWs.
3	Increase CHW employment readiness through field placements and apprenticeships developed in collaboration with a network of partnerships that will enable trainees to respond to and support essential public health services and provide them with employment opportunities.
4	Advance health equity and support for underserved communities by increasing the number of CHWs that are employed as integral members of integrated care teams that use their expanded skills to reduce health disparities.

Table 2 Selected topics mapped to U.S. Department of Labor (DoL) and Georgia CWH competencies

Topic	U.S DoL Competency	U.S. DoL Sub-Competency	GA CHW Competency
Health Equity	#1 Provide cultural mediation among individuals, communities, and health and social service systems.	1B Educates health and social service systems and providers about community perspectives and cultural norms (including supporting implementation of Culturally and Linguistically Appropriate Services (CLAS) 1 C Expands health literacy among constituents served. 1D Facilitates cross-cultural appropriate health education and information.	Cultural Competence
Social Determinants of Health	#2 Provide culturally appropriate health education and information.	2 A Conducts health promotion and disease prevention education in a manner that matches linguistic and cultural needs of participants or community.	Cultural Competence
Care Coordination	#3 Coordinates care, provides case management support, and assists individuals and communities in navigating health and social service system.	3 A Participates in care coordination or case management, including as part of a team. 3B Provides referrals and follow-up support to ensure that services were obtained. 3 C Facilitates, obtains, or coordinates transportation to services and helps ameliorate other barriers to services. 3D Documents and tracks individual- and population-level data. 3E Identifies and informs people and systems about community assets and challenges.	Service Coordination
Mental Health First Aid Certification Advocacy	#4 Provides coaching and support #5 Advocates for Individuals and Communities	4 A Provides individual support and coaching. 5 A Assists individuals in building and expanding their personal capacity to identify and manage their health conditions, obtain services as needed, identify opportunities to help others, and represent their needs through communication and advocacy. 5B Assists communities in building capacity by identifying resources, coordinating service and support providers, linking groups or systems that provide synergistic support, and implementing advocacy strategies to address unmet need.	Mental/Behavioral Health Advocacy
Public Health/Population Health	#6 Helps build individual and community capacity.	5 C Identifies and works with CHW peers to help others grow professionally, act ethically, and meet the needs of the individuals and communities served. 6 A Assists individuals in building and expanding their personal capacity to identify and manage their health conditions, obtain services as needed, identify opportunities to help others, and represent their needs through communication and advocacy. 6B Assists communities in building capacity by identifying resources, coordinating service and support providers, linking groups or systems that provide synergistic support, and implementing advocacy strategies to address unmet need. 6 C Identifies and works with CHW peers to help others grow professionally, act ethically, and meet the needs of the individuals and communities served.	Special Topics in Public Health

Table 2 (continued)

Topic	U.S. DoL Competency	U.S. DoL Sub-Competency	GA CHW Competency
Basic Skills	#7 Provides direct health and social service assistance.	<p>7A Conducts and accurately reports and communicates results and implications of basic screening tests (height, weight, blood pressure, glucose level, etc.).</p> <p>7B Provides basic health support services (e.g. first aid, diabetic foot checks).</p> <p>7 C Collects and distributes materials that meet basic needs (e.g. provides food, blankets, clothing to those in need).</p>	Chronic Disease
Individual and Population Health Assessment Skills	#8 Implements individual and community assessments.	<p>8 A Participates in design, implementation, and interpretation of individual-level assessments (e.g. home environmental assessment).</p> <p>8B Participates in design, implementation, and interpretation of community-level assessments (e.g. windshield survey of community assets and challenges, and community asset mapping).</p>	Communication and Organizational Skills
Community Outreach and Engagement	#9 Conducts outreach to individuals, communities, service providers, and groups.	<p>9 A Identifies and recruits individuals, families and community groups to services and systems.</p> <p>9B Follows up on health and social service encounters with individuals, families, and community groups.</p> <p>9 C Conducts home visits to provide education, assessment, and social support.</p> <p>9D Presents at local agencies and community events to share information and educate individuals and communities about health and social service concerns and resources.</p>	Community Engagement
Program Evaluation and Research	#10 Participates in evaluation and research	<p>10 A Participates in evaluation and research.</p> <p>10B Identifies and engages community members as research partners, including community consent processes.</p> <p>10 C Identifies priority issues and evaluation/research questions.</p> <p>10D Develops evaluation/research design and methods.</p> <p>10E Collects and interprets data.</p> <p>10 F Shares results and findings.</p> <p>10G Engages stakeholders to take action on findings.</p>	Chronic Disease Organizational Skills Special Topics in Public Health

shares information about their organization and collaborations across sectors to achieve better outcomes for children and families. Local healthcare partners describe violence prevention programs. Faculty experts present their research focused on childhood literacy, spirituality, and storytelling. The day ends with a case-based session on professional conduct and interpersonal skills.

Week 6 is devoted to Motivational Interviewing (MI) and simulated practice. MI is a communication technique that has been demonstrated to be effective for healthcare workers in building vaccine confidence particularly among populations with vaccine hesitancy [18]. Experts in MI provide a 90-minute didactic session before trainees, in groups of 3 to 4 rotate through five 20-minute simulations with standardized patients (SPs). The five scenarios focus on issues about COVID-19 vaccine hesitancy most commonly seen in populations facing misinformation and disinformation: (1) a Black male truck driver who distrusts the vaccine development process due to the unethical Tuskegee experimentation that the Black community experienced in the 1930s, (2) a young healthy male professional who worries that the side effects of the COVID vaccine would be more severe than the disease itself, (3) a young undocumented woman who worries that the vaccine side effects would make her sterile and the information collected by the vaccinators would be shared with immigration officials, impacting her chance of obtaining legal status, (4) a veteran whose distrust in the COVID vaccine stems from the government’s changing recommendations on the number of booster doses, and (5) a pregnant mother of a teenage son who worries that the COVID vaccine would harm her unborn child while causing heart inflammation in her teenage son. The SPs are trained in MI techniques, scripts for each of the five roles, and feedback techniques. Trainees receive standardized pre-briefing and rotate through five scenarios, receiving feedback from SPs on MI techniques after each scenario. They also receive standardized debriefing when they wrap up all five scenarios. The other half of the day is spent on basic life support and first aid skills for infants and adults and learning about Narcan administration.

Week 10 provides interactive sessions focused on cardiovascular health, autism, harm reduction and health coaching, and content about the CHW’s role in program evaluation and participatory community research. There are two sessions in the afternoon. The first session focuses on skills including handwashing, vital signs, calculating body mass index, blood pressure and diabetes screening, and health education. The second session is

Table 3 Demographic Characteristics (N = 202)

	Frequency
Age (mean = 49 years ± 12.13S.D.)	
18-20	9 (4.4%)
21-30	19 (9.4%)
31-40	29 (14.3%)
41-50	45 (22.3%)
51-60	53 (26.3%)
61-70	31 (15.4%)
71-80	16 (7.9%)
Gender	
Female	170 (84.1%)
Male	30 (14.9%)
Non-Binary	1 (0.5%)
Transgender	1 (0.5%)
Race	
African American/Black	165 (81.7%)
Asian	6 (3%)
Hispanic/Latino	13 (6.4%)
Two or More Races	13 (6.4%)
White	5 (2.5%)
Ethnicity	
African	9 (4.4%)
African American	148 (73.3%)
Afro-Caribbean	12 (5.9%)
Asian/Pacific Islander	5 (2.5%)
Hispanic/Latino	15 (7.4%)
Multi-Ethnic	9 (4.5%)
White	4 (2%)
Currently Employed/Serving as a CHW (in a CHW Role)	
Yes	43 (21.3%)
No	159 (78.7%)

a simulated civic advocacy pitch panel with legislative representatives.

Experiential learning/field placements

Participants complete 80 h of experiential learning with field placements with community-based organizations. ARCHWAY’s network of partnerships includes AID Atlanta, Georgia Harm Reduction Coalition, Boat People SOS, Emory Hillandale Hospital, Latino Community Fund of Georgia, Georgia Department of Public Health District 4, two federally qualified health centers, Family Health Centers of Georgia and Four Corners Primary Care Centers, Refugee Women’s Network, Southeastern Primary Care Consortium, and Georgia Primary Care Association. The overarching program goal is for CHW trainees to be recruited for employment opportunities within these and other organizations in metro Atlanta or the state.

Table 4 Weekly Online modules and learning objectives

Week	Modules	Learning Objectives
1	Becoming a Community Health Worker Social Determinants of Health and Health Equity Individual and Population Health Assessment	<p><u>Course Introduction</u> -Advocate for individuals and communities -Identify and works with CHW peers to help others grow professionally, act ethically, and meet the needs of the individuals and communities served</p> <p><u>Social Determinants of Health and Health Equity</u> -Define the various determinants of health -Evaluate the impact of the various determinants of health of populations -Compare and contrast health equity, health equality, and health justice</p> <p><u>Individual and Population Health Assessment</u> -Understand and describe your community -Assess bias and quality of information -Identify current strengths and needs within your community -Gather information from individuals</p>
2	Cultural Humility and Congruence Community Outreach and Engagement Communication Strategies & Organizational Skills for Community Health Workers Talk with Me Baby	<p><u>Cultural Humility and Congruence</u> -Define culture, cultural humility, and cultural competency -Describe how cultural humility and cultural competency are critical to addressing health inequities -Recognize the importance of being aware of our unconscious and implicit biases -Identify the limits of our knowledge and make commitments to life-long learning and growth -Practice openness towards cultures and groups different from our own</p> <p><u>Community Outreach and Engagement</u> -Define outreach -Identify the range of health issues addressed through outreach -Recognize different outreach levels and different methods of outreach -Explain strategies for engaging community members and key stakeholders -Develop an outreach plan and document your outreach services</p> <p><u>Communication Strategies & Organizational Skills for Community Health Workers</u> -Define the work of CHWs -Understand different types of communication -Review strategies for effective communication and organizational skills useful for a CHW -Learn the importance of self-care</p> <p><u>Talk With Me Baby</u> -Provide an overview of the science behind early language exposure and the impact early, rich language transactions have on a child socially, neurologically, developmentally, and linguistically</p>
3	Introduction to Health Insurance Basics Preventing Heart Disease, Stroke, and Diabetes Promoting Healthy Lifestyles: Disease Prevention	<p><u>Introduction to Health Insurance Basics</u> -Describe different health insurance plans and associated coverage documents -Differentiate between Medicare, Medicaid, Affordable Care Act, and PeachCare for Kids -Explain patient eligibility and how to apply for different health insurance plans and coverages</p> <p><u>Preventing Heart Disease, Stroke, and Diabetes</u> -Define heart disease, stroke and diabetes -Identify the important risk factors that contribute to heart disease, stroke and diabetes development in adults -Describe prevention strategies used for heart disease, diabetes and stroke at the community and individual level -Identify the various methods that community health workers use to help prevent heart disease, diabetes and stroke</p> <p><u>Promoting Healthy Lifestyles: Disease Prevention</u> -Examine current culturally congruent dietary regimens that prevent cardiac disease along with recommended exercise regimen for adults -Explore dietary regimens best fit for preventing stroke; including salt restriction -Learn about the dietary regimens that are best to follow to prevent type II diabetes, understand healthy weight and exercise approaches -Understand the importance of stress management techniques and mental health awareness -Discuss two or three strategies for managing stress -Explore two or three ways mental health affects physical health</p>

Table 4 (continued)

Week	Modules	Learning Objectives
4	Social and Literacy Support Environmental Health and Justice Public Health and Population Health	<p>Social and Literacy Support</p> <ul style="list-style-type: none"> -Define literacy -Analyze literacy rates in the United States versus Georgia -Distinguish health literacy as a social determinant of health -Adapt effective patient communication strategies -Recall approaches to promote health literacy principles -Emphasize the importance of cultural competence <p>Environmental Health and Justice</p> <ul style="list-style-type: none"> -Comprehend and distinguish the terms: environmental health and climate change -Be able to identify common environmental hazards -Recognize the relationship between the environment and health outcomes -Understand the basics of environmental justice and its role in environmental health -Comprehend the role of the CHW in environmental health and climate change <p>Public Health and Population Health</p> <ul style="list-style-type: none"> -Define population health and public health terms -Describe how public health prevents disease and injury -Apply the principles of public and population health when providing education and resource linkage to community members
5	Community Capacity Building Advocacy Trauma Informed Care Caring for the LGBTQI+ Community	<p>Community Capacity Building</p> <ul style="list-style-type: none"> -Define capacity building -Understand the benefits of capacity building -Identify best practices in building capacity -List the various roles and models used by CHWs engaged in capacity building <p>Advocacy</p> <ul style="list-style-type: none"> -Define advocacy -Recognize various scenarios in which CHWs act as advocates -Identify different levels and types of advocacy -Understand the skills needed to engage effectively as an advocate <p>Trauma Informed Care</p> <ul style="list-style-type: none"> -The Impact of Trauma on Health and Development -Responses to Trauma: What is Trauma-Informed Care? -Supporting Well-Being: What is Resiliency-Informed Care? <p>Caring for the LGBTQI+ Community</p> <ul style="list-style-type: none"> -Pertinent LGBTQI+ health related terminology -How to use cultural humility during encounters with LGBTQI+ patients
6	Emergency Preparedness Care Coordination How Healthcare Professionals Can Promote COVID-19 Vaccine Confidence in the Community	<p>Emergency Preparedness</p> <ul style="list-style-type: none"> -Complete an emergency response plan -Describe how you could assist community members to develop emergency response plans -List the types of emergencies that can occur in your community and what role you would play during a disaster <p>Care Coordination</p> <ul style="list-style-type: none"> -Define care coordination and transition management -Identify the dimensions of care coordination and transition management important to the community health worker's practice -Recognize the activities of care coordination and transition management important to the community health worker's practice <p>How Healthcare Professionals Can Promote COVID-19 Vaccine Confidence in the Community</p> <ul style="list-style-type: none"> -Recognize the challenges surrounding COVID-19 vaccine confidence. -Employ validated methods for managing crucial conversations with patients around the COVID-19 vaccines -Employ best practices for managing social media about COVID-19 vaccines

Table 4 (continued)

Week	Modules	Learning Objectives
7	Interprofessional Education and Collaborative Practice Models of Treatment for Addiction Community Resilience	<p>Interprofessional Education and Collaborative Practice</p> <ul style="list-style-type: none"> -The Evolution of IPE and IPECP Competencies -Competency Domain 1: Values/Ethics for Interprofessional Practice -Competency Domain 2: Roles and Responsibilities -Competency Domain 3: Interprofessional Communication -Competency Domain 4: Teams and Teamwork Competencies <p>Models of Treatment for Addiction</p> <ul style="list-style-type: none"> -Understand the definitions of Addiction, Substance Use Disorder (SUD), and Dependency -Be familiar with the scope of SUD in the U.S. -Be familiar with each step in the SBIRT process -Understand the 3-prong approach to treating SUD -Be familiar with Medication Assisted Treatment for the 3 Use Disorders with FDA approved medications -Be familiar with treatment modalities for SUDs without an FDA approved maintenance medication -Understand the roles that Behavioral Health Care and Recovery Support play in treating SUD -Understand the philosophy of Harm Reduction and name examples -Be familiar with barriers to treatment and begin thinking about ways to address them <p>Community Resilience</p> <ul style="list-style-type: none"> -Describe the impact of stress and trauma on mental and physical health and potential mechanisms of healing via sensory-motor awareness -Explain the six skills of the Community Resiliency Model (CRM) -Apply the 3 core skills of CRM to self and others: tracking, resourcing, and grounding.
8	Teaching Skills HIV Prevention Stigma	<p>Teaching Skills</p> <ul style="list-style-type: none"> -Familiarize yourself with best practices in adult learning -Identify the steps involved in planning and organizing a training -Develop goals and objectives for a training -Learn effective facilitation techniques -Understand how to create a simple evaluation of a training <p>HIV Prevention</p> <ul style="list-style-type: none"> -Give clients baseline information about HIV -Recall current HIV prevention tools -Describe the critical role CHWs can play in addressing inequities in HIV outcomes <p>Stigma</p> <ul style="list-style-type: none"> -Define stigma -Recognize the different levels in which stigma operates -Describe frequently stigmatized populations and conditions -Identify the effects of stigma in healthcare settings -Explain how you can combat stigma
9	Understanding and Preventing Suicide Individual-Level Approaches to Improve Resilience Cultivating Compassion Stress, Depression, and Anxiety Trauma and Post-Traumatic Growth Making Your Workplace Work for You	<p>Understanding and Preventing Suicide</p> <ul style="list-style-type: none"> -Understand the scope of suicide as a public health problem -Explain suicide risks and protective factors -Describe evidence-based interventions for preventing suicide <p>Individual-Level Approaches to Improve Resilience</p> <ul style="list-style-type: none"> -Understand why stress management is crucial to health and well-being -Describe how our brain and bodies respond to stress -Explain why stress can become harmful -Understand how to train the mind to respond more optimally to stressors <p>Cultivating Compassion</p> <ul style="list-style-type: none"> -Explored a contemplative approach to cultivating compassion -Reviewed new perspectives on the causes and downsides of burnout -Learned the potential of compassion to mitigate or protect against burnout <p>Stress, Depression, and Anxiety</p> <ul style="list-style-type: none"> -Understand the difference between stress and anxiety -Identify current prevalence of anxiety and depression -Define symptoms of anxiety and depression -Identify work/life interfering behaviors and symptoms related to anxiety and depression -Understand the evidence-based interventions for treatment of anxiety and depression -Understand the clinical consequences of untreated and insufficiently treated anxiety and depression -Identify self-care tips to help with stress, anxiety and depression <p>Trauma and Post-Traumatic Growth</p> <ul style="list-style-type: none"> -Understand that trauma can occur across the lifespan and settings -Define post-traumatic growth (PTG) -Describe resources to support posttraumatic growth for individuals and their workplace teams <p>Making Your Workplace Work for You</p> <ul style="list-style-type: none"> -Understand key, self-focused agility practices -Apply self-focused agility practices in the workplace -Understand the responsibilities of a health system in supporting agility and resilience

Program evaluation

ARCHWAY's performance evaluation plan has two primary foci: (1) to ensure that the project objectives are being met and address any barriers to achieving the objectives, and (2) to ensure essential data about trainees and grant activities are collected throughout the project period. The team's performance evaluation and rapid cycle quality improvement (RCQI) approach is based on the Plan-Do-Study-Act (PDSA) cycle. Assessments include:

- 1) Initial demographic survey.
- 2) Self-report of confidence in achieving competency (pre- and post-survey).
- 3) Individual module course evaluations.
- 4) Weekly narrative reflections.
- 5) Community health work encounter log.
- 6) Facilitator and stakeholder assessments.

All participant assessments are collected and reported using REDCap, a secure portal for collecting and storing program data. A Non-Human Subject Research Determination Form was submitted, and this project was deemed not human subject research as it is an educational activity.

Online modules

Preliminary evaluations for the online modules have been robust, with ratings between 4.5 and 4.8 (English modules) and 4.2 and 5.0 (Spanish modules) on a scale from 1 to 5, with 5 representing strongly agree and 1 representing strongly disagree.

Self-report confidence in achieving competency

Before beginning the program, and during the last week, CHW trainees are asked to self-report their confidence in achieving the Department of Labor CHW competencies, and enhanced competency from program inception to completion, results are presented in Table 5.

Reflections

Each week, the CHW trainees were asked to reflect on three prompts about how they will use the knowledge and skills they are learning, how they see themselves as a connector, and what meaning they are experiencing. Examples of responses are listed below.

How can you see yourself using the knowledge and skills you have learned this week?

"The information I learn from each day of in person class is invaluable; the interactive learning is equip-

ping me to be more interactive with the people in my community."

"Each week of this Community Health Worker Training Course equips me with valuable knowledge and skills I can apply as a CHW. For example, when I learn about community capacity building, I can use that knowledge to foster collaborations, facilitate communication, and mobilize community resources. This can involve organizing community events, facilitating group discussions, or creating platforms for community members to participate in decision-making actively. Similarly, as I learn about advocacy, I can utilize that knowledge to advocate for the needs and rights of individuals and communities. This can include raising awareness about health issues, influencing policies and systems, and engaging in community organizing efforts. By utilizing my communication skills and understanding of advocacy strategies, I can effectively amplify the voices of marginalized communities and work towards creating positive change."

"Gaining all the knowledge that is needed for me to become a CHW has propelled me to play a vital role in my community. For example, learning about HIV can help me to better educate people about the risk involved and how to prevent having it and how to keep up with the treatment if they have it. Also letting people know that there is treatment and that it is not a death sentence. Learning about mental health and the stigma associated with mental health, access to care and how to help a person that is going through a mental health crisis was very helpful for me also."

How can you see yourself being a connector for individuals and groups in your communities?

"I have already noticed me using some of the lessons I've learned while taking this course. The mental first aid responder class has been especially helpful because I have some family members and friends who are dealing with mental illness. I have even been able to speak with someone in a very careful and heartfelt way about how to deal with some of the hindrances that this illness is causing them."

"What I learned in week 6 will help me to be a better CHW. I can be a connector for individuals and groups in my community by imparting the knowl-

edge gained. I have gained the knowledge to help myself my family and my community in CPR and First Aid, Disaster preparedness. Care Coordination, and vaccine confidence. I am now in the process of making an emergency kit for my family. If someone is in distress and needs help, I could help them with this valuable information."

"I see myself being a connector for example through my Homeowners Association and throughout some of the schools and churches in my community. This course has helped me to see the many different roles that I would play as a community healthcare worker. For example, I have experienced situations in which someone is depressed and I have encouraged them and gave them resources to help themselves. I have also realized that when it comes to mental health there are still a lot of obstacles in our community. I have seen situations where someone was highly depressed and suicidal ideation, but that person did not want to call the help hotline because they feared that the cops would be involved and they are scared that they might not get the help they need."

What meaning are you making of the new CHW knowledge and skills you are learning as you grow more into the role of being a CHW?

"This new knowledge means a new challenge or project for my life, I definitely want to achieve a personal change and in my community... increase my income with these new tools, it would be a definite personal achievement... I hope to get a job where I can develop everything learned and keep moving forward..."

"As I continue to acquire new knowledge and skills through this CHW training course, I am developing a deeper understanding of the importance and impact of my role in the community. The new knowledge and skills I am learning enable me to approach my role as a CHW with confidence, competence, and a sense of purpose. Being a CHW goes beyond providing basic health information; it involves actively empowering individuals and communities to take control of their health. By acquiring knowledge about health insurance, healthy lifestyles, and disease prevention, I am equipped with valuable tools to educate and support community members."

"As I continue to gain new CHW knowledge and skills through this training course, I am finding

deeper meaning in my role as a CHW. The knowledge and skills I acquire enhance my ability to promote health equity, advocate for social justice, and empower individuals and communities. By embracing a client- and community-centered approach, I recognize the importance of valuing the experiences, wisdom, and skills of others. This drives me to approach my work with cultural humility and respect, ensuring that I provide care and support sensitive to diverse backgrounds and needs. Overall, the meaning I am making of the new CHW knowledge and skills is rooted in the opportunity to make a tangible difference in the lives of individuals and communities."

Themes that emerged from these insightful reflections include building personal efficacy, professionalism as a CHW, and enhancing leadership capacity.

Facilitator and stakeholder assessments

Two facilitators and one stakeholder provided overall assessments of the entire ARCHWay experience. "Being a facilitator in the ARCHWay program has been a rewarding experience. The participants, each with a wealth of knowledge shaped by their diverse backgrounds and lived experiences, bring invaluable perspectives to our sessions. Their unique insights, rooted in community involvement, create a rich learning environment. Our sessions on harm reduction have not only encouraged self-reflection among participants but have also provided me with opportunities for personal growth. Facilitating these discussions has opened the door to honest, often difficult conversations around drug use, harm reduction, compassionate care, and the profound impact of stigma. These dialogues have fostered mutual learning, empathy, and understanding."

"As a facilitator, ARCHWay was by far the most rewarding experience as it partnered with community members. CHWs hold a trusted role in working with families in their communities and thus are an ideal champion to help support early childhood development. Through this experience, I was able to learn directly from CHWs the challenges faced in the community and ways to better support families. They noted the importance of strength-based approaches, including Talk With me Baby, that focus on a family's strengths and abilities, rather than deficits."

"As a stakeholder with Boat People SOS, our organization has served as an experiential learning site over the past 18 months, providing valuable hands-on experience for CHW trainees through various

Table 5 CHW confidence Self-Report. Prior to beginning the program, and during the last week of the program, CHW trainees were asked to self-report their confidence in achieving the Department of Labor CHW competencies, confidence in achieving competency increased from the start of the program until the end of the program

Survey Item	Pre-Survey % fairly or completely confident	Post-Survey % fairly or completely confident
Educate individuals about how to use health and social service systems.	67.2	91.7
Educate communities about how to use health and social service systems.	56.3	89.6
Provide culturally appropriate health education and information.	57.1	89.1
Coordinate care for individuals and communities.	68.7	95.8
Provide case management support.	60.3	85.1
Assist individuals and communities in navigating health and social service system.	63.5	91.6
Provide coaching and social support.	65.6	93.8
Advocate for individuals and communities.	54.1	95.8
Help build individual and community capacity.	65.7	91.7
Provide direct health and social service assistance.	63.5	95.8
Implement individual and community assessments.	59.4	86.7
Conduct outreach to individuals.	66.1	91.7
Conduct outreach to communities.	60.3	89.3
Conduct outreach to service providers.	57.8	91.7
Participate in evaluation and research.	62.5	97.9

community programs. These initiatives, ranging from health fairs and flu shot clinics to breast cancer screening education and domestic violence prevention, have benefited thousands in underserved communities. Although integrating trainees and identifying experienced CHW preceptors posed challenges, strong communication with ARCHWAY liaison and a shared understanding of the curriculum ensured trainees met their learning goals, while Boat People SOS gained from their diverse life and work experiences."

Lessons learned

Several lessons have emerged from this innovative approach to public health education, emphasizing the critical role of CHWs in improving health equity and outcomes. Several challenges have also been encountered.

Formalizing training

One significant lesson from the ARCHWAY Program is the importance of formalized training for CHWs. The program’s structured curriculum, which includes both didactic and experiential learning components, ensures that CHWs are well-prepared to address the complex health needs of underserved populations. By incorporating standardized competencies and aligning with recognized frameworks, the program enhances the readiness and effectiveness of CHWs. The inclusion of hands-on experiences and real-world scenarios ensures that CHWs

are not only knowledgeable but also adept at applying their skills in diverse situations. Simulation exercises, particularly those addressing vaccine hesitancy, prepare CHWs to handle challenging conversations and build confidence in their ability to influence health behaviors positively.

A systematic review found that when CHWs receive insufficient opportunities for training and education, they felt that healthcare providers “look down on them” for their lack of education [19]. This is important to note, as integrating CHWs into healthcare teams will be needed to ensure the successful adoption of the CHW model.

Building capacity

Capacity building is crucial to ensuring CHWs are prepared to serve their communities to achieve health equity. Capacity building can include culturally and linguistically appropriate training to address health conditions and social needs while addressing self-care. For instance, Steinman et al. (2023), in a study of CHWs working with Latino communities to improve equitable access to depression care in the U.S., found that participants working with CHWs with culturally appropriate training saw a significant reduction in depression severity at 6-month follow-up [20].

The ARCHWAY program also highlights the value of cross-sector partnerships in enhancing the impact of CHWs. Collaborations with various community-based organizations, healthcare providers, and public health

agencies enrich the training experience and expand the reach of CHWs. These partnerships facilitate a more comprehensive approach to health promotion, integrating resources and expertise from multiple sectors to address community needs holistically.

A mixed methods study identified position validation, professional development, and billing and reimbursement as needed to ensure successful integration into the healthcare workforce in Indiana [21]. Additionally, CHWs in the sample desired opportunities for continued professional development, clear pathways to promotion, and opportunities to teach and supervise other CHWs as part of their capacity building. However, CHWs and employers differed in their definitions of success. Employers defined services with metrics such as numbers enrolled, referrals, client-reported outcomes, and follow-up rates. In contrast, CHWs defined success as establishing relationships and the quality of resources provided to clients [21]. Finding common ground between the medical and community healthcare models will be needed to integrate CHWs into healthcare teams successfully. Positioning well-trained CHWs as members of integrated care teams will achieve health equity by advancing PH, strengthening the PH workforce, reducing health disparities, and helping underserved populations address social determinants that can undermine health.

Advancing health equity

Another key lesson is the potential of CHWs to advance health equity. The ARCHWAY Program's focus on underserved areas in Atlanta, characterized by health professional shortage areas (HPSAs) and high risk for poor health outcomes, illustrates how CHWs can make significant inroads into health disparities. By fostering trust and building relationships within communities, CHWs can engage hard-to-reach populations, encouraging them to seek and continue care. This trust-building is essential for overcoming barriers related to mistrust and misinformation, particularly in the context of vaccine hesitancy.

Globally, a systematic review of CHWs related to health equity in low- and middle-income countries from 2014 to 2020 found that increased training and mentoring for CHWs led to higher compliance and referrals for women from low socioeconomic backgrounds seeking care for their newborns with illness in Ghana [19]. Training opportunities for CHWs to expand their scope of practice and keep up with best practices will be necessary to ensure health equity for vulnerable populations.

Reducing health disparities

The ARCHWAY Program provides valuable insights into addressing health disparities in underserved

communities through the strategic training and deployment of CHWs. One of the most significant ways CHWs strengthen the public health workforce is through their vital role in helping reduce health disparities and addressing the observed diversity of community needs. Given their deep ties to communities, they often have lived experience and understanding of factors contributing to disparities, including barriers that community members face in accessing care. As frontline workers within the healthcare workforce, CHWs are well positioned to provide health education and care that is cost-effective [22, 23], person-centric [24], and helps mitigate and manage chronic conditions, particularly in underserved communities [25].

A paper from the Institute of Medicine at the National Academies suggested that given the demonstrated efficacy of CHWs reducing health disparities "if these were the results of a clinical trial for a drug, we would likely see pressure for fast-tracking through the Federal Drug Administration" (p. 1) [26].

Improving health outcomes

By training CHWs to identify and intervene in factors such as housing, education, and socioeconomic status, the ARCHWAY Program demonstrates how targeted community interventions can lead to improved health outcomes.

Challenges

Implementation challenges included variability in enrollment. While the program has hundreds of applications, over 88 welcome emails need to be sent to enroll 45 to 50 participants. However, the retention rate is 99%, participants who start the program complete the program. The only barrier to program expansion is/was the 30-person class limit for the mental health first aid training, a requirement of the national organization; and the program adds a second day so that 60 participants can be accommodated.

Additional challenges that have been encountered include currently there is no CHW certification in the state, and recent legislation introduced in the state legislature in January 2024 was not passed, and without a certification process, CHWs are not able to be reimbursed for their services. Post-training employment opportunities have been limited as many employers view CHWs as a volunteer workforce rather than a paid employee workforce. While CHWs are being trained, some are not able to find paid employment. In addition, the funder requires a percentage of the CHW trainees be placed in registered apprenticeship programs. Employers do not have funding to employ CHW apprentices, and if funds are available,

employers are hesitant to sign the Department of Labor Employer Partner agreements. Next steps for the ARCHWAY team are to meet with field placement partners and other employers about funding paid positions through the Department of Labor's registered apprenticeship programs. The program will also begin hosting job fairs on Week 10 of the program to bring CHWs and employers together.

Conclusion

Investing in and leveraging CHWs to advance health equity, reduce disparities, and improve the health and well-being of individuals and communities is imperative. However, research-driven programs often lack plans for sustainability for the continued support of CHW programs. Finding ways to sustain grant-funded programs after grants end should be considered when designing demonstration projects. The program will continue to be offered after funding ends, with the exception of providing stipends to participants. The ARCHWAY program's robust evaluation framework offers insights into the importance of ongoing assessment and quality improvement. Using tools like the Plan-Do-Study-Act (PDSA) cycle, the ARCHWAY team continuously monitors and refines the program based on participants' feedback and outcome data. This iterative approach ensures that the training remains relevant and effective, adapting to the evolving needs of the community and the healthcare landscape.

The ARCHWAY Program's approach to CHW training is providing a model for other regions seeking to enhance their public health workforce and address health disparities. The lessons learned from this program emphasize the importance of formalizing training, building capacity, leveraging cross-sector partnerships, addressing SDOH, advancing health equity, reducing health disparities, incorporating practical skills and simulation-based learning, and maintaining a focus on evaluation and continuous improvement. By integrating these elements, programs can better prepare CHWs to meet the needs of underserved communities and contribute to improved health outcomes and greater health equity.

Supplementary Information

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Supplementary Material 1.

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Authors' contributions

BAS, Conceptualization, Funding acquisition, Investigation, Methodology, Project administration, Resources, Supervision, Writing – original draft, Writing – review & editing. QP, Investigation, Methodology, Writing – review & editing. KC,

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Data availability

No datasets were generated or analysed during the current study.

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Not applicable; Emory IRB determined the project was non-human subject research, deemed program evaluation.

Consent for publication

Not applicable.

Competing interests

The authors declare no competing interests.

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