January 2024

National Impacts of the Public Health Essentials Training

Evaluation Brief

Executive Summary

For more than 100 years, Cooperative Extension offices across the nation have partnered with communities to support productive agriculture, healthy ecosystems, and economic prosperity. Cooperative Extension (CE) educators are trusted leaders who help promote investments in social determinants of health to spur community development. However, the inclusion of CEs in county or state-drive public health initiatives is underutilized, partly because few CE educators identify as public health leaders or feel equipped to describe their community development work in formal public health language.

This pilot project aimed to use the Public Health Essentials training program to help 71 CE educators better understand their vital role in community public health improvement. Public Health Essentials (PHE) uses asynchronous online learning and mentoring to build public health competencies and confidence. A total of 59 completed the training (83%).

In 2023, Cornell University conducted surveys and case studies to evaluate impacts of PHE among CE educators. This evaluation brief presents how PHE activated educators' roles as public health promoters in seeding collaboration to target rural health disparities.

Key findings show that CE educators who completed PHE:

1. Demonstrated competence in all 54 PHE learning outcomes and reported a significant increase in self-assessed capacity in all nine public health competency domains emphasized by the U.S. Public Health Workforce Interests and Needs Survey (PH WINS).
2. Engaged in active listening to build trust and community connections.
3. Integrated different perspectives of key populations to improve designs of programs to increase cultural relevance and reduce stigma, increasing program utilization.
4. Leveraged coalition-building and communication skills to develop partnerships with public health institutions.
5. Applied systems thinking and community engagement skills to develop community health leaders to address local health concerns.

The Public Health Essentials training program was effective at building public health competence among CE educators. Pre- and post-program survey evaluations show significant changes in competence and confidence, and the case studies presented show the benefits this yields to community public health improvement. The intervention provided learners with flexible and engaging learning that encouraged them to develop and expand their public health identity and their reach for potential community health impact.

> "Public Health Essentials has been a remarkable experience. I have such a better understanding of public health and how it relates to Extension. As someone had mentioned in one of the live sessions, "this was the missing piece" to connect the work that we do in Extension. Truly a remarkable experience! Thank you to all the instructors and support and enthusiasm to improve our understanding of public health. Thanks again. So appreciated."
>
> – A PHE Participant

Public Health

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Public Health Workforce Gaps

A skilled workforce helps ensure the health of communities. To deliver the core functions and essential services that advance health equity, a competent workforce requires core knowledge and skills in strategic areas, including effective communication; data-based decision making; policy and planning; community engagement; cross-sectoral partnerships; leadership; and justice, equity, diversity, and inclusion. The U.S., however, has a shortfall of public health workers, limiting efficacy, reach, and impact.

Estimates suggest that at least 100,000 additional public health workers are needed across the U.S. to ensure core functions and essential services are delivered. Further, current governmental public health workforce reports critical skills gaps. There are clear opportunities to build skills and abilities among those who do and can deliver public health services in communities.

"Budget and staffing cuts have weakened the nation's collective health and increased its vulnerability to emerging infectious disease and unchecked chronic disease.

In the past decade, state and local health departments lost 15% of their essential staff. These cuts have limited the ability of health departments to plan for and respond to emergencies like the COVID-19 pandemic and the meet the daily needs of their communities."

Source: The de Beaumont Foundation in *Staffing Up: Investing in the public health workforce* (2021)

Expanding the Public Health Workforce

To help fill the critical public health workforce gaps in the U.S., several policy and systems interventions have been suggested. These include:

- Reinforcing pipeline programs from bachelor and Master of Public Health programs to county and state public health roles
- Providing skills-building and continuing education to current public health workers, expanding competence and confidence to promote public health
- Increasing workplace satisfaction to improve retention, including increased pay rates, promotions, and funding to augment hiring

In response to the COVID-19 pandemic and the critical public health workforce gaps, increased federal funding helped to spur action in some of these areas. However, critical gaps persist. Considering the calls to action emerging from Public Health 3.0, we sought to explore a complementary approach:

- Highlighting the critical contributions that community organizations play in assuring community health and ensuring that their workers feel equipped to be community public health leaders.

Public Health 3.0

Public Health 3.0 is an approach to public health focused on collective impact and improving the social determinants of health. The focus is on cross-sector partnerships and reaching the whole population.

This framework calls for public health leaders to take on the role of Chief Health Strategist in the communities in which they live and work. This role means developing relevant partnerships to address upstream factors that influence the social determinants of health.

Source: DeSalvo, et al in *Public Health 3.0: A call to Action for Public Health to Meet the Challenges of the 21st Century*

Cooperative Extension

Given their roles as anchor institutions in rural communities across the U.S., Cooperative Extension organizations are a natural partner in public health promotion. Similarly, CE staff play crucial roles in their rural communities, places where health inequities are significant.

Cooperative Extension comprises a national network of organizations that bridge universities and communities. The goal of the Cooperative Extension network is to leverage research and education from universities to enable communities to thrive. Across the country, Cooperative Extension organizations supports productive agriculture, healthy ecosystems, and prosperous communities. Their work is fundamentally public health.

Cooperative Extension organizations are partners in public health because they are embedded in communities and are trusted leaders who support better health access and outcomes. While they may not identify as public health leaders or feel equipped to engage in formal public health initiatives, they are often promoting deep investments in the social determinants of health that promote equity in communities. The Public Health Essentials training program encourages participants to explore their public health identity and develop the confidence to become public health leaders in their communities.

"'Extension' means reaching out and extending university research and resources to meet public needs through non-formal educational programs at the community level. The Cooperative Extension System (CES) engages people in these opportunities to help them solve problems, develop skills, and build a better future where they live and work."

Source: The Extension Foundation (2023)

Cooperative Extension as Public Health Leaders

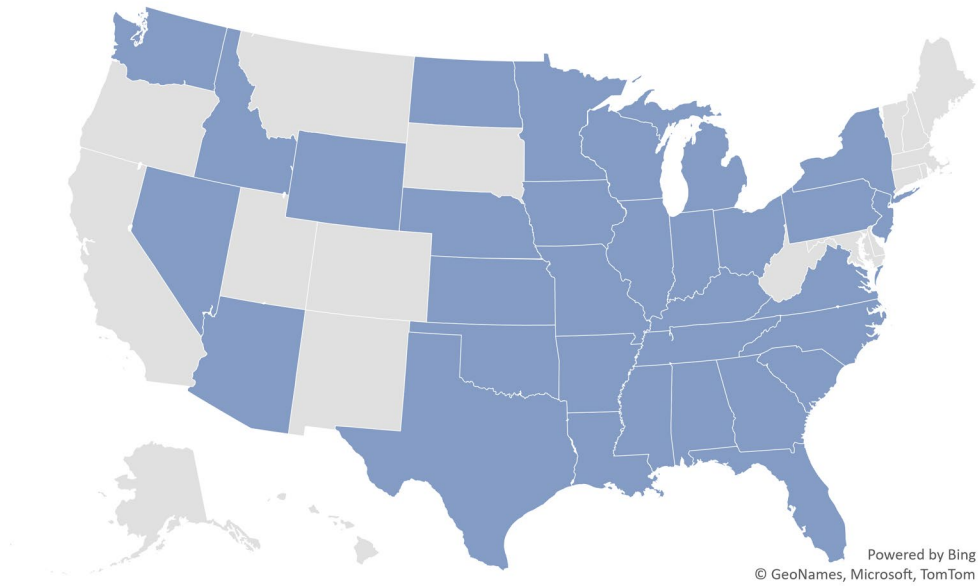
For a two-year period (2021-2023), Cornell University's Public Health Program set out to pilot an approach to highlight the critical contributions that Cooperative Extension educators play in assuring community health, and ensuring that the educators appreciate their significance, and feel equipped to be a community public health leader.

A two-part intervention was designed to:

1. Help educators develop or expand their public health identity through training and mentoring
2. Help educators translate their learning into action in reaching underserved communities through expansion of existing programs

The goal of the pilot project was to widely expand public health skills and knowledge through the organization through Cooperative Extension educators in different states. There were 71 representatives from 32 states that participated in the program (Figure 1).

Figure 1: States with participating Cooperative Extension educators



104 Cooperative Extension educators who participated in the pilot project came from 32 unique states.

Representation from each state varied; some states had one representative and some states had two taking the training program pilot project. In some cases where there were 2 educators, they were from the same Cooperative Extension university. This provided a mix of people that knew each other and people that were meeting for the first time through the course. The pilot project provided a way to collaborate about public health issues and incorporating public health frameworks.

The Intervention: Public Health Essentials

To help address gaps in public health worker skills and abilities, Cornell University's Public Health Program developed an online training program: Public Health Essentials. Public Health Essentials (PHE) is designed to build transferrable public health knowledge, skills, and confidence among current and future public health workers.

The Public Health Essentials (PHE) intervention comprises 18 modules that are completed through 75 hours of applied learning (Table 1). Learners are enrolled into cohorts that interact in an online Canvas platform. Information is delivered by short videos from Cornell University public health professors and is complemented by self-directed research, tool use, skill application to case scenarios, reflection, and cohort engagement. Self-paced instruction is complemented by expert facilitators who host live office hours and provide detailed feedback on submitted assignments.

Learning outcomes of each module are assessed through short quizzes, discussion posts, and applied assignments (Table 1). Learners who successfully demonstrate all outcomes receive Cornell University's Public Health Essentials Certificate.

Table 1: Public Health Essentials course outline and learning outcomes

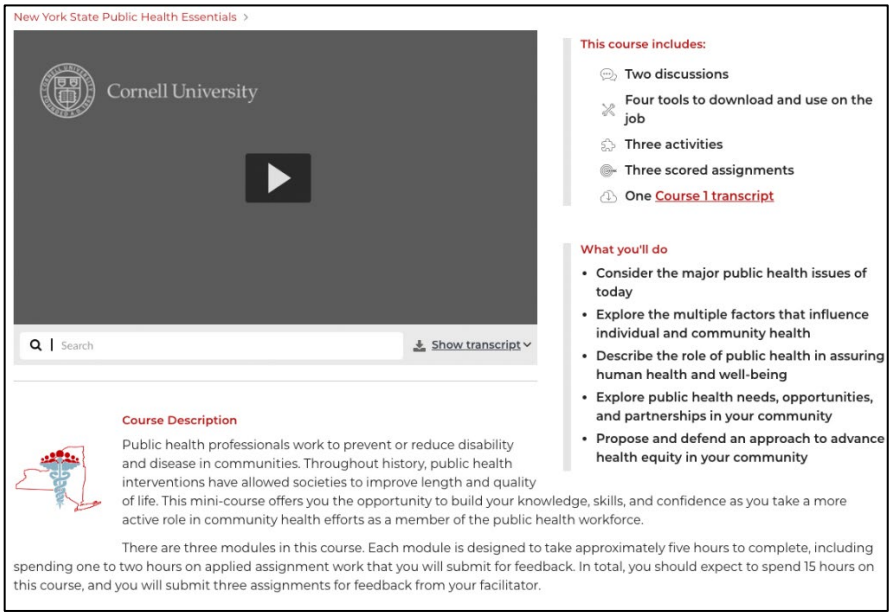
Module	Learning Outcomes
Public health initiatives	• Describe the roles and responsibilities of government public health offices • Review local CBOs and summarize the public health services they provide • Develop a personal vision of how to become a key part of the vast field of public health
COVID-19	• Expand understanding of COVID-19 as an emergent disease • Examine COVID-19 disease dynamics to better support prevention efforts • Describe how you can become involved in COVID-19 prevention efforts
Promoting vaccination	• Investigate community vaccination efforts and lessons learned from other campaigns • Build understanding of COVID-19 vaccine development • Identify ways to play a role in boosting community immunity
Broadening influence	• Explore the science of human behavior and why change is challenging • Discover strategies to influence others, combat misinformation, and encourage health • Identify ways to help people consider a new behavior — like COVID-19 vaccination
Health issues & the role of public health	• Explain the role of public health leaders • Describe focal public health issues, including leading causes of morbidity and mortality • Help others understand, and appreciate how to prevent priority public health areas
Models for considering the public's health	• Explain the significance of social determinants and equity as drivers of public health • Apply various models to help envision ways to address and improve public health • Use a SWOT analysis to propose a strengths-based public health intervention
Public health values	• Explain why prevention, and the determinants of health are important in public health • Provide examples of primary, secondary, and tertiary prevention interventions • Research local organizations to partner with on public health and health equity projects
Interpreting public health data	• Review public health data to identify leading causes of death and disability in a region • Compare, contrast, and interpret data • Develop a fact-based argument around why to address a public health need
Analyzing local public health data	• Compile public health data; develop a state and county public health data profile • Interpret data to describe disparities and justify a public health intervention • Propose a public health intervention that might address local public health needs
Connecting public health resources	• Develop a resource directory of federal and state agencies linked to public health • Identify local resources who can be allies in a public health response • Summarize community demographics, public health gaps, and opportunities for change
Behavior change strategies	• Describe how factors from multiple layers influence what humans do • Discuss racism, and the impacts it has on health and health outcomes • Apply behavior change theory to identify factors that may help or hinder action
Effective public health communication	• Complete an audience analysis to inform an effective public health campaign • Define public health communication goals to inform an effective public health campaign • Develop a public health communication plan to meet goal and match target audience
Building trust and community relations	• Describe how you are working to build cultural awareness and competence • Explain social identities and influence on trust building and cultural competence • Apply LARA method to shift from debate to discussion and dialogue
Air pollution + health	• Describe what air pollution is, and how it affects people's health • Predict who, in local communities, bears health effects disproportionately • Develop a statement of need and an action plan to learn more about air pollution
Climate change + health	• Describe what climate change is, and how it affects people's health • Predict who, in local communities, bears health effects disproportionately • Develop a statement of need and an action plan to learn more about climate change
Biodiversity + health	• Describe what biodiversity is, and how it affects people's health • Predict who, in communities, bears health effects of biodiversity loss disproportionately • Develop a statement of need and an action plan to learn more about biodiversity
COVID-19 + health	• Differentiate viruses from bacteria, and describe zoonotic transmission • Discuss how human interactions with nature have led to emergent diseases • Describe how environmental factors increased the severity of COVID-19 in communities
Emergency preparedness	• Describe what extreme weather events are and why they're becoming more dangerous • Describe the impacts of extreme weather events on health, property, and economies • Research ways to become more skilled in emergency preparedness and response

Uptake of Public Health Essentials

Since September 2021, close to 1,000 learners have enrolled in Public Health Essentials. Sixty percent of enrollees completed the training and earned their PHE Certificate. Graduates have diverse demographics (Table 2). Seventy-one Cooperative Extension educators enrolled in the intervention; 59 (83%) completed PHE.

Table 2: Public Health Essentials Completer Demographics

Highest Education Level	
High School Diploma/GED	3%
Associate's	6%
Bachelor's	37%
Master's	47%
Doctorate	6%
Other	2%
Years of Public Health Experience	
0-2 years	63%
3-5 years	17%
6-10 years	10%
11-20 years	7%
more than 20 years	3%
Race/Ethnicity	
White (Non-Hispanic)	56%
Black (Non-Hispanic)	16%
Asian (Non-Hispanic)	12%
Other (Non-Hispanic)	5%
Hispanic	5%
Not-reported	7%
Gender Identity	
Male	21%
Female	77%
Other	2%

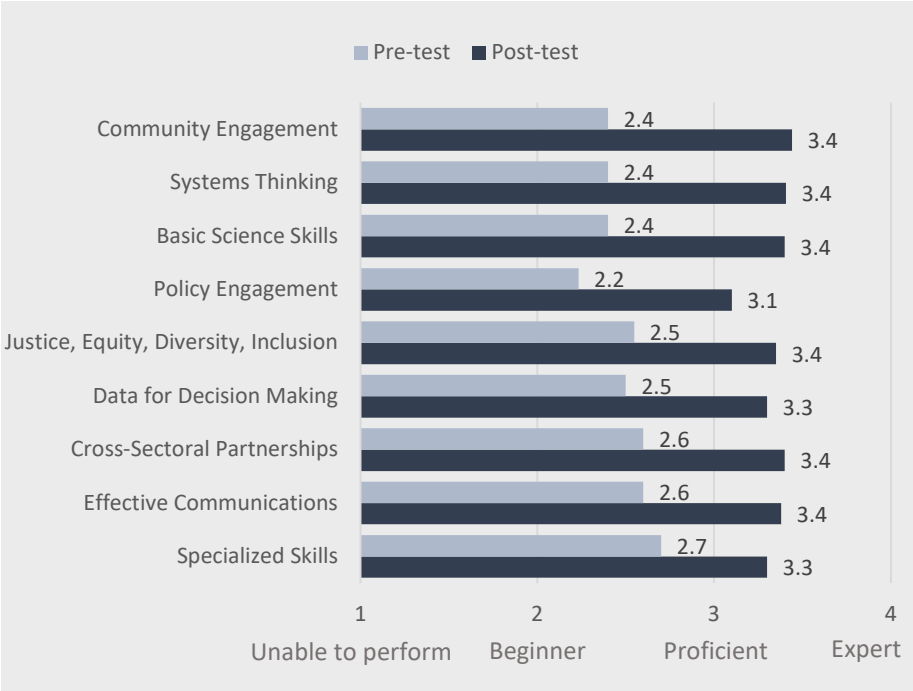


Screenshot of one page within the Public Health Essentials online training platform.

Outcomes from Public Health Essentials

Evaluation of Public Health Essentials learner outcomes shows that regardless of demographics—including years of public health experience—learners were able to demonstrate competence in all 54 learning outcomes as assessed by course facilitators, and report a significant increase in self-assessed capacity in all nine public health competency domains PHE focused on. These domains are emphasized by the U.S. Public Health Workforce Interests and Needs Survey (PH WINS). Across all competency domains, learners moved from beginner/proficient before taking PHE to proficient/expert after taking PHE (Figure 2). All changes in competency were statistically significant (p<.005).

Figure 2: Changes in public health competencies pre-to-post PHE



Ordinal scale range: 1 to 4 (1=unable to perform; 2=beginner; 3=proficient; 4=expert). All changes in competency were statistically significant (p<.005).

Related to the utility of the PHE intervention to their daily work, the vast majority of PHE completers report that they "Agree" or "Strongly Agree" with the following statements: "After completing Public Health Essentials…"

- I am able to apply the knowledge and skills to my work (94%)
- I am confident that I gained new knowledge and skills (92%)
- The skills and knowledge gained benefit my organization (92%)
- I developed a better understanding of public health (86%)
- I broadened my public health skills base (84%)
- I enhanced my competitiveness in the job market (78%)

In addition, PHE completers report that, as a result of participating in PHE:

- I increased my confidence as a public health practitioner (49%)
- I incorporated new public health concepts into my work (21%)
- I expanded my public health network and partnerships (13%)
- I started a new program to improve public health (7%)

Impacts: Case Studies of Public Health Essentials in Action

Cooperative Extension educators reported that PHE helped influence their work. The case studies below highlight the work of five CE educators* who have volunteered to share the application of PHE learnings into their CE work.

- Some CE educator names have been changed to preserve anonymity.

These case studies show how educators who complete PHE are empowered to see themselves as public health workers in their communities. Additionally, they the power of diffusion of innovation and the positive impact that educators who take PHE can have in working on these issues with others.

Case 1: Helping Youth Lead

Engaging youth in the health of their community is critical to optimizing lifelong health and wellness. However, they are often left out of the conversation when public health interventions are planned; as a result, interventions often shift away from what matters most to the youth. Susan at the University of Wisconsin-Madison Cooperative Extension completed PHE and reported reflected on how it allowed her to have greater reach with youth in her community.

Along with her colleagues, Susan has been working with local middle school students to address a key issue the students articulated in their community: **not feeling physically safe in their environment** due to bullying at school or domestic violence in their homes. To design a right-fit program to support this determinant of health, Susan engaged students using the *Youth Advocates for Community Health* framework. The process allowed youth to ideate the design of interventions to address the public health issues they faced with help from Susan's team. The primary intervention identified is access to self-defense classes to build youth ability to protect themselves, gain confidence, and engage in physical activity.

Youth participants getting ready to present their plan to the school board. Photo courtesy of University of Wisconsin-Madison Cooperative Extension.

An environmental scan showed that the closest self-defense or martial arts classes are over 30-minutes away, creating a significant access gap. To close this gap, Susan and the students decided to advocate offering such classes in local schools, via the physical education curriculum, opening access to all. To prepare to present their idea to leadership the (a) they brought in guest speakers to share the benefits and practical application of self-defense classes; (b) identified stakeholders who could assist with implementation, and (c) set up meetings with the school principals and the school board.

Susan reflected that after completing PHE, she applied what she learned directly to this work. While she was already prepared to implement the Youth Advocates for Community Health framework that prioritizes engaging with youth to plan youth-led community health improvement projects through partnerships with adults, Susan shared that she was able to leverage and apply the coalition-building and communication skills she gained from PHE to build partnerships with key stakeholders: institutions and adults in charge in the community. She was then able to connect the students with these leaders to elucidate the key public health issues that youth in the community experience and want to address. Susan used the **LARA Method of Communication** to build partnerships that centered the youths' experiences and ideas. As a result, the students were excited that adults were listening to them and taking their voices and choices seriously.

With Susan's guidance, these youth worked throughout the school year and summer to map and implement their proposal of providing self-defense classes at school, integrating public health and community needs into their messaging. While the project is ongoing, these youth have confidence in advocating for positive change in their community.

Case 2: Increasing Food Access and Nutrition Literacy

Access to nutrient-rich food is a crucial component of healthy eating and active living. This is especially true in Nebraska's rural counties where grocery stores are few and far between, making the businesses vulnerable to closures. When this happens, food deserts expand, making it more difficult for members of food-insecure households to access healthy, affordable food near where they reside.

Rita, a Food, Nutrition, and Health Extension educator with the Nutrition Education Program in Nebraska, has been working to address this issue using an upstream approach. Funded by the Supplemental Nutrition Assistance Program-Education (SNAP-Ed), she and her team are working to address both the nutritional needs of food-insecure teens and the needs of local grocers and food suppliers in the rural areas where these teens reside.

LARA Method of Communication

The LARA Method of communication is a four-step tool designed to facilitate meaning across diverse perspectives. It serves as a guide for users to reframe the way that they think about and approach communication to develop a shared understanding.

Listen to what the person is saying. This is a time to withhold judgement, notice body language, and be guided by empathy.

Affirm you appreciate the person's contribution, honesty, and authenticity. Confirm what you heard through paraphrasing and make a connection.

Respond by using "I" statements in a way that is honest and respectful. Avoid debate and use this as an opportunity to engage in conversation.

Add Information to build meaning and relationships. This is a way to develop understanding and share resources.

Source: *Intergroup Dialogue Project*, Cornell University (2016)

The co-designed program distributes meal kits to youth in schools once per month. Each kit is stocked with the non-perishable foods needed to make five nutritious meals, as well as cash-equivalent coupons that the youth can use to purchase perishable foods at their local grocery stores to complete the meals. Together, these ingredients make up the building blocks for easy-to-make recipes and the process introduces the youth to food labels, food safety, and the MyPlate concept of healthy eating. The collaboration between nutrition educators, local grocers, and schools has created a partnership that bolsters benefits for youth, their families, local grocers, and regional food producers.

Rita reported that participating in PHE heavily informed her approach to designing and improving the meal kit program. For example, Rita shared that PHE reminded her to not have preconceived notions about why something is occurring, but rather, to remain open and inquisitive through the planning and improvement phases, and to center participant and user voices and perspectives. She also noted that the LARA Method of Communication bolstered her ability to make the case for the program to different community sectors that questioned the need for the program. Rita had the idea to prioritize use of local grocery stores in the program to align with the Social Determinants of Health introduced to her by PHE, a theory that emphasizes the interplay between the health of individuals and the resources in their environment. By including these local anchor institutions, the youth gained access to fresh ingredients all month, and the grocery stores had the benefit of receiving guaranteed program funding through cash-equivalent coupons. Public Health Essentials' focus on the social determinants of health helped Rita think through the long-term mission of the program and how access to community institutions such as grocery stores could contribute to healthy nutritional habits later in life, preventing chronic diseases and food deserts.

Finally, PHE also increased Rita's sensitivity to the issues of stigma around food assistance for youth. As a result, Rita actively sought to engage the youth in program design. A main element of this was positioning youth as recipe testers rather than food assistance beneficiaries. Youth were provided with the boxes as a means of payment for their efforts to test the recipes and provide useful feedback to the University's Nutrition and Health team.

Case 3: Building Cultural Relevance into Nutrition Education

For Gloria, teaching youth about food and nutrition requires making a connection between the food and their lived experiences. She and her colleagues led a summer program in rural Nebraska that provides ***nutrient-rich food and healthy cooking*** courses to fourth graders in Colfax County. To ensure that the program was tailored to the youths' lives and tastes, Gloria modified the recipes and foods to incorporate Latin American foods to reflect the large Latin American population in the county.

The program, Growing Healthy Habits, is the education component of the USDA-funded grant. The target population is primary school-aged children in rural Nebraska and involves gathering food surpluses from local community gardeners and distributing the produce to the youth while also building nutrition educational information and recipes around the foods provided. To modify recipes to suit the tastes of the youth, the program instructors adapted the recipes to have more Latin American ingredients and flavors. Additionally, they encouraged students to bring their tortilla presses from home and students, in turn, taught the instructors how to make tortillas to go along with the meals. In that way, lesson plans were co-created to educate the youth based on their own dietary practices and preferences. Through this tailored program, the youth gained a better understanding of where their food comes from and different ways to prepare their own food.

"I think that the PHE classes helped me take a step back and not come in with my preconceived notions about why something's occurring, but just to be more inquisitive."

– Rita, PHE Training Participant (2023)

The Social Determinants of Health

Social Determinants of Health (SDOH) are the conditions in the environments where people are born, live, learn, work, play, worship, and age that affect a wide range of health, functioning, and quality-of-life outcomes and risks.

The five key social determinants of health are:

- Economic Stability
- Education Access and Quality
- Health Care Access and Quality
- Neighborhood and Built Environment
- Social and Community Context

Source: U.S. Department of Health and Human Services, Office of Disease Prevention and Health Promotion In *Healthy People 2030*

Incorporating culturally relevant foods such as tortillas into the standardized nutrition education curriculum. Photo courtesy of University of Nebraska-Lincoln Cooperative Extension.

Gloria says this tailored focus of adapting the program to this community was something she began while completing the PHE training, which encouraged her to apply the learnings to her work. She noted that she might not have led the Growing Healthy Habits program if it were not for her participation in PHE. She noted, for example, that the Social Determinants of Health presented through PHE influenced the trajectory of the program to help her think in an upstream way. PHE helped her understand how large an issue food security is in her communities, and that this change would be a vital lever to address it, pushing beyond the program's initial focus on healthy eating to providing regular, accessible food for participants. She noted that learning about the nested influences on health access and outcomes was impactful and that she now uses this framework on daily basis.

"The PHE Training was such a great reminder of how I need to always take a step back and look at the larger picture of things and address step one before I'm trying to jump to the finish line."

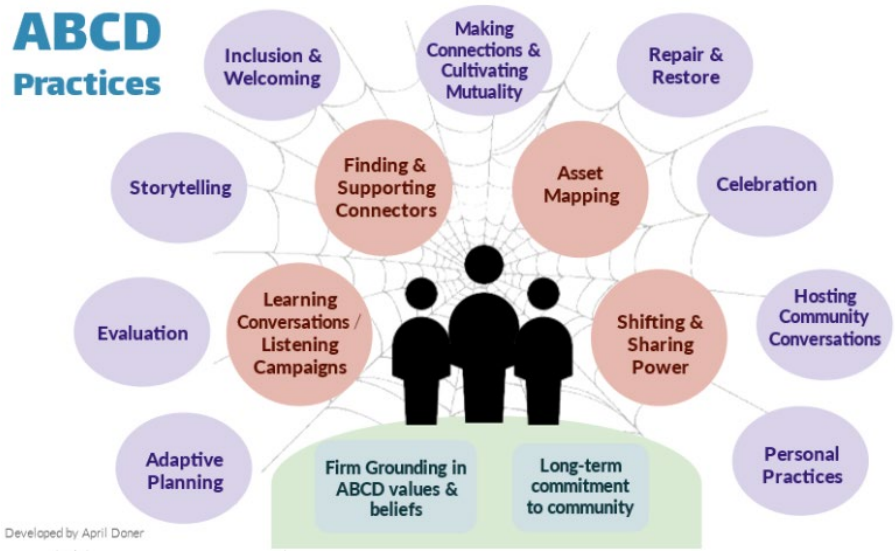
– Gloria, PHE Training Participant (2023)

The Growing Healthy Habits program took effort to plan, design, and launch, and Gloria noted that it would have been difficult to incorporate issues of food access to the program without her PHE training. Additionally, Gloria stated that PHE helped her develop an open approach to communication with the youth to understand them: where they live; do they have consistent access to food; and what is their financial situation. PHE helped her have these difficult conversations with her participants so that she could tailor the program to be as effective as possible in addressing some of their lived experiences.

For Gloria, Growing Healthy Habits is an avenue to addressing food access from a variety of angles. Now, she is initiating new conversations with local food banks to further address food access issues beyond that of these youth.

Case 4: Developing Community Health Leaders

Cooperative Extension has a long history of working with local communities to influence positive change and promote health. However, a new program called the Extension Health Ambassador Program out of the University of Arkansas's Division of Agriculture Research and Extension is taking this involvement to the next level by teaming up with community members and incorporating public health frameworks. The objective of this program is to identify five ambassadors from each participating county to complete a training, work with a county agent to identify relevant programming for their community, and to then deliver that health program to community members. The program uses the Asset-Based Community Development (ABCD) model to create sustainable solutions to community health issues that are guided by local community members. This model involves actively listening to community members to understand what is happening in the community and what is important to its members.



Core principles of the Asset-Based Community Development (ABCD) model. Source: ABCD Institute at DePaul University.

While completing PHE, Vivian was invited to be a co-investigator on the grant that led to the *Extension Health Ambassador Program* being implemented. Vivian's role includes supporting the county extension agents that work with the community ambassadors and helping to build the training curriculum. The resulting training curriculum consists of three sections: (1) Public Health Foundations, (2) Supporting Public Health Behaviors in Arkansas, and (3) Extension 101 & Volunteering.

Vivian and her team are implementing the *Extension Health Ambassador Program* in six counties that have the highest prevalence of obesity and heart disease. In these counties, an extension agent was tasked with identifying and recruiting community volunteers to become ambassadors. The next phase of the program has agents working with the ambassadors to understand the community and identify public health solutions that community members want to engage with. The goal of the program is to see a reduction in health disparities and an improvement in overall health within the target counties.

Vivian says that participating in PHE gave her the confidence to participate in the grant that led to the *Extension Health Ambassador Program,* and it prepared her to contribute when invited to the table. And, while the ABCD model is at the core of the *Extension Health Ambassador Program*, other models presented in PHE, such as the Social Determinants of Health, were important in helping Vivian understand all the factors that influence the health of a community. Vivian was also able to use her knowledge of public health and public health communication from PHE to make the training curriculum relevant to community ambassadors.

Vivian's story is an example of how public health can be incorporated into the Cooperative Extension system in a way that benefits community members at the state and county level.

Case 5: Leading Statewide Collaborations

Every ten years, North Carolina releases a new health plan for the state. The *Healthy North Carolina* plan aims to ***improve health and wellbeing*** across the state. To implement the programs or interventions to improve health through the State Health Improvement Plan, the state develops collaborative taskforces. The current plan is supported by 19 Community Work Groups, each representing a health factor identified in the *Healthy North Carolina* plan.

Janice from North Carolina State University is a co-chair of three Community Work Groups for the North Carolina State Health Improvement Plan: (1) ***Access to Exercise Opportunities***, (2) ***Limited Access to Healthy Food***, and (3) ***Sugar-Sweetened Beverage Consumption***. These Work Groups were tasked with prioritizing strategies and identifying stakeholders to implement health improvement initiatives across the state. Taking on a leadership role in these groups came naturally to Janice and she has earned a reputation for being a supportive collaborator in these groups to harness the resources and abilities of all organizations at the table.

The vision of a healthy North Carolina. Photo courtesy of Kim Ballentine Fine Art Raleigh, North Carolina.

Janice ascribed some of her success as a leader to skills that she honed through PHE. For example, she reported using systems thinking skills gained via PHE to understand the nuances of each workgroup. She recalled the value, in particular, for the Sugar-Sweetened Beverages group. Their mandate was to find ways to reduce consumption of sugar-sweetened beverages and to increase consumption of safe water. Janice and the work group discussed systems-approaches to the goals, such as state taxes on sugar-sweetened beverages, issues of water quality, and water fluoridation across the state, especially areas with fewer resources. By focusing on the systems that influence the way that North Carolinians consume sugar-sweetened beverages, Janice and her collaborators were taking a holistic approach to their goal of decreasing sugar-sweetened beverage consumption and increasing access to safe water.

Additionally, Janice used her time in the PHE course to listen and learn from peers and instructors. For example, while she had confidence in her communication skills before PHE, she found the LARA Method of Communication interesting and helpful when talking with partners. She also noted that she used what she learned in the data portion of PHE to collect data to support the Work Groups.

Janice has already seen the benefits of her collaborative approaches. She shared that the Sugar-Sweetened Beverages Work Group implemented a “Rethink Your Drink” campaign in schools. This intervention provided access to safe, clean water in schools, water drink stations, and water bottle filling stations. This campaign encouraged students to have refillable water bottles and for teachers to allow the students to have access to the water bottles on their desks during classes. Teachers report an unintended benefit from this: they got instructional time back as students had the drinks at their desk.

When thinking about public health moving forward, Janice hopes to see greater collaboration between organizations across the state to have a collective impact, and to operate like a real Public Health 3.0 system. She envisions that this would mean that organizations would not duplicate work but would rather know who is doing the work already and encourage collaboration to use that partner as a resource. Janice would also like to see more community members understanding what resources exist and how to access them in a way that shows true collaboration across sectors. She’s motivated to incorporate these approaches into her ongoing Work Group leadership.

Health Equity and Justice

Disparities in access to resources and services create significant disparities in health outcomes in the U.S. These poor health outcomes disproportionately affect Black, brown, and rural communities. The health disparities are impacted by inequitable resource allocation, geographic barriers, and historical policies that continue to have deleterious effects on health.

A focus on Justice, Equity, Diversity, and Inclusion is foundational to public health work. Public health leaders work together to address deep health disparities that exist in the communities in which we live and work. Justice, Equity, Diversity, and Inclusion is foundational to the Public Health Essentials curriculum, both to support learning and to help participants plan for ally-focused and restorative actions. For example:

- In ***Course 1***, learners are introduced to barriers to health equity and justice using public health frameworks, namely the social, political, and economic determinants of health. Participants explore how these determinants contribute to health equity and how to have cultural humility when implementing interventions. They develop abilities by presenting an action-oriented stance towards addressing a public health concern by advocating for health equity in the community.

- In ***Course 2***, learners practice how to use a health equity framework to understand community health needs and how to integrate ethics, equity, inclusion, and justice in development and delivery of public health interventions. They demonstrate their abilities by identifying factors that limit health equity and proposing interventions that have the potential to lessen the health disparities.

- In ***Course 3***, learners practice accessing and using data to describe population demographics and the health disparities that are of most concern in their region. As a next step, learners analyze and interpret their community data to inform actions that have the potential to improve health equity among their communities of focus.

- In ***Course 4***, learners reflect on how structural bias, social inequities, and racism undermine health and create barriers to achieving health equity. Learners apply systems thinking to identify factors that influence health and show their abilities by applying frameworks to define a plan for action.

- In ***Course 5***, learners demonstrate a commitment to equity, inclusion, and justice when identifying and proposing strategies to address emerging public health needs, related to emergency prevention and response, and resilience building. Specifically, participants show their abilities as they develop a plan to build resilience and address social vulnerability in their community.

The commitment that participants have to Justice, Equity, Diversity, and Inclusion was apparent across the case studies. In each of the interviews, the CE educators noted how the work they lead or facilitate each day is done with goals to reach underserved populations, to elevate the voices of community members, to fill critical service gaps, and to improve the Social Determinants of health. To do so, respondents noted how they work to develop relationships with key communities, build trust through listening, and working together to co-develop and co-design possible solutions, building agency and sustainability.

Conclusions

Public health is assured by complementary leaders working together in communities to guarantee access to the Social Determinants of Health. Given the health disparities that across the U.S., there are still gains to be made. State and county public health workers support community public health initiatives, but innovation and greater success comes when complementary community leaders are equipped to augment efforts.

Public Health Essentials equips community leaders to advance public health and equity, helping learners appreciate and then lift-up their roles in the community public health systems. The applied curriculum builds knowledge and shared language and pushes learners to apply public health frameworks and methods in their community programming, to engage traditionally underrepresented voices, to facilitate collaborative efforts, to overcome barriers to access, and to address Social Determinants of Health.

The case studies show how application of these learning create more responsive community health initiatives to address local and specific health equity needs. Specifically, CE educators:

- **Integrated the role of middle school youth in public health promotion** by helping them forge partnerships with public health institutions in their community through leveraging the coalition-building and communication skills gained from PHE.

- **Revised a food access program for rural teens** to reduce stigma and bolster grocery stores as anchor institutions by using the program planning skills gained from PHE to improve program design and delivery.

- **Tailored a nutrition education class to have more cultural relevance** to the immigrant communities served by using co-designing it with the learners and employed the communication and justice, equity, diversity, and inclusion skills taught by PHE.

- **Implemented a community health leader program** grounded in Asset-Based Community Development (ABCD) to address local health concerns by using the systems thinking and community engagement skills taught by PHE.

- **Led healthy eating and active living community work groups** to inform a state health improvement plan using systems thinking, cross-sector collaboration, and communication skills gained from PHE.

Considerations for the Field

Compiling these case studies allowed us to reflect on four key notes for the field:

1. **Diversity of experience benefits public health planning.**
   The field of public health encompasses many disciplines working in many sectors and locations in a geographic community. Bringing those disciplines into a shared learning environment can lead to outcomes such as those presented in the case studies. Inclusion of learners from a variety of disciplines encouraged participants to learn not only from the course, but also from each other.

2. **Engaged learning seeds action.**
   Those engaged in work evolve in thinking and practice over time, and effective actions can be supported through professional development. These case studies show that short applied and engaged public health training modules can seed structured actions, particularly when delivered in an accessible and flexible format, and when focused on expanding skills by acknowledging and building on learners' expertise and lived experience.

3. **Nontraditional/non-governmental workers and the public health workforce.**
   Current efforts to bolster the public health workforce focus largely on the government workforce, bolstering student pipelines and providing training to government workers. However, gaps in the workforce persist. The case studies presented here suggest that non-governmental workers can plan and implement high-value public health interventions, particularly when seeded by just-in-time public health training.

4. **Collaboration for greater reach, greater impact.**
   Public health officials can expand their reach through structured partnerships with non-governmental partners, such as the Cooperative Extension network. Identifying and building partnerships with organizations that have the means to reach priority populations is key to equity-focused public health programming. These case studies show that when catalyzed by new ideas and frameworks via structured learning and peer-to-peer engagement, embedded community leaders unlocked community-centered innovations to influence positive health outcomes.

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