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Community Engagement through Contact Tracing Training

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Abstract

The COVID-19 pandemic has brought many physical, mental, and economic challenges and has provided an opportunity for academia to participate in community engagement to help support public health. Through a partnership between a university and a local health district, a contact tracing training program was developed and implemented in the late spring of 2020. That training program increased the health district's capacity to respond to the pandemic and provided an experiential learning experience for public health students. Through this community engagement endeavor, university faculty and students helped support a local health district's COVID-19 response efforts and, in so doing, also helped to support public health in the early stages of a global health crisis. The products of this endeavor, including contract tracers, case investigation, and trained instructors, continue to support public health contact tracing efforts in the community.

Keywords: community engagement, contact tracing, higher education, covid-19, experiential learning

Introduction

The SARS-CoV-2 COVID-19 pandemic brought multiple multifaceted challenges with 107,631 deaths in the United States attributed to COVID-19 between March 1, 2020, to June 1, 2020 (Centers for Disease Control and Prevention [CDC], n.d.). Additionally, the Centers for Disease Control (CDC) reported 1,850,372 cumulative cases in the same timeframe with a total case rate of 565 per 100,000 (CDC, n.d.). The state of Washington reported 21,995 total cases of COVID-19 for a case rate of 285 per 100,000 with 1,118 total COVID-19 deaths (Washington State Department of Health [WSDOH], n.d.). Locally, Spokane County reported 594 total COVID-19 cases for a case rate of 110 per 100,000 and 34 deaths in 2020 between March 1 to June 1 (Spokane Regional Health District [SRHD], n.d.). Additionally, rates of COVID-19 induced health issues, such as depression, have been on the rise. In the United States, since the onset of COVID-19, 27.8% of Americans reported elevated symptoms of depression in 2020, which increased to 32.8% in 2021 (Ettman et al., 2021). Further, the pandemic harshly impacted the U.S. economy, with estimates showing the "median global gross domestic product dropped by 3.9% from 2019 to 2020, making it the worst economic downturn since the Great Depression" (Oum et al., 2022, p. 2). While April 2020 projections suggested a slight decline of cases in the summer of 2020, that was quickly overshadowed by a 75% chance COVID-19 would have a resurgent "second wave" by fall 2020 (American Medical Association [AMA], 2020).

Effective mitigation tools from March 2020 to June 2020 included social distancing, mask-wearing, case isolation/close contact quarantine, and contact tracing (Khanna et al., 2020; Kalyanaraman & Fraser, 2020; Taylor et al., 2021). Both symptomatic and asymptomatic cases were being identified, adding to the complexity of mitigation efforts and highlighting an increased need for case detection, contact tracing, and subsequent quarantine/isolation (Khanna et al., 2020; Taylor et al., 2021). Due to the novelty of COVID-19, mitigation strategies were constantly evolving to adapt to new information. Continued implementation and application of these mitigation strategies were essential to protect individuals and communities while also providing an opportunity for healthcare systems to prepare themselves for an expected surge (Khanna et al., 2020).

While the COVID-19 pandemic brought many issues and challenges, the responses provided new ways for academic institutions to engage to benefit their communities. Such engagement included a contact tracing training program partnership between a public university and a local health district. This partnership was developed by faculty from the Eastern Washington University (EWU) public health programs and the Spokane Regional Health District (SRHD) to increase the district's capacity to respond to the pandemic while providing an experiential

learning experience for public health students.

The partnership focused on expanding contact tracing efforts to help control the spread of COVID-19. During the pandemic, contact tracing involved "the use of clear protocols to notify, interview, and advise close contacts to patients with confirmed or probable COVID-19" (CDC, 2022b). Before the availability of vaccinations or the possibility of herd immunity, contact tracing was considered one of the "most important measures for reducing infection spread," particularly at the community level (Khanna et al., 2020; Taylor et al., 2021, p. 704). While demand for a trained and available workforce of contact tracers quickly became apparent, overwhelmed health departments had little capacity to develop, let alone implement, competent contact tracing programs. It also became evident that regional institutions of higher education may be charged with doing their contact tracing, a task they were initially ill-prepared to do. This tasking and ill-preparedness rang true for SRHD and higher education institutions in the Inland Northwest. Appreciating the need for a contact tracing program, SRHD and EWU faculty engaged in community collaboration.

The CDC defines community engagement as "the process of working collaboratively with and through groups of people affiliated by geographic proximity, special interest, or similar situations to address issues affecting the well-being of those people" (CDC/ATSDR Committee on Community Engagement, 1997, p. 9). The EWU-SRHD contact tracing training program (Contact Tracing Training) worked collaboratively to benefit a local community through comprehensive instruction in traditional contact tracing and case investigation. The Partnership made valuable contributions in contact tracing and case investigations, strengthening community-wide COVID-19 mitigation efforts. While similar to contact tracing, case investigation focused on working with an individual who was confirmed or suspected to be COVID-19 positive to "help them recall everyone with whom they have had close contact during the timeframe while they may have been infectious" (CDC, 2022a).

The collaboration between SRHD and EWU was successful because it benefited all stakeholders and fulfilled the three fundamental components of community engagement which include: (1) collaboration between the faculty and community, (2) a mutually beneficial exchange of knowledge and resources, and (3) a partnership with reciprocity (Public Purpose Institute, 2021). Community engagement involves a continuum of community involvement (McCloskey et al., 2011). The community engagement continuum is a continuum over five areas of collaboration: Outreach, Consult, Involve, Collaborate, and Shared Leadership (McCloskey et al., 2011). Each of these areas is fundamental for successful progression throughout the continuum. Via response to community need, utilization of stakeholder input, and bidirectional communication, the collaboration between SRHD and EWU falls within the "Shared Leadership" area of the

continuum. The purpose of this publication is to share the methods of the EWU-SRHD collaboration while illustrating how the tenets of community engagement were demonstrated during a global health crisis.

Collaboration Between Faculty and Community

Community engagement by academia utilizes collaboration between faculty and community and can originate from various fields such as public health, political science, and social work. In May of 2020, public health faculty from EWU collaborated with SRHD to develop a contact tracing training program to support public health. This collaboration between higher education institutions and a public health district blended the assets of both to create a mutually beneficial program. Similar organizational structures can be found in contact tracing programs created during the COVID-19 pandemic, such as those at Illinois State University and Penn State College of Medicine (Koetter et al., 2020; Jarvill & Neubrander, 2021). The contact tracing training utilized real-life experiences to support student learning while addressing a community need. The outcome of this collaboration provided community and academic health departments with trained contact tracers for their COVID-19 response efforts and provided students with applied practice experiences. Through these experiences, students honed skills, including investigatory epidemiology, community engagement, and effective communication.

Mutually Beneficial Exchange of Knowledge and Resources

The EWU-SRHD collaboration occurred when EWU public health faculty and students wanted to help their community's response to COVID-19, and SRHD was eager to accept that help. The contact tracing training was a collaboration in response to a crisis. Important community engagement strategies such as collaboration and communication were utilized by EWU, SRHD, and community partners to create the program. Utilization of this experience for future emergency preparedness plans, including another pandemic, will benefit the community. Increasing evidence suggests that crises that are prepared for or responded to with community-engaged solutions have been found to "augment officials' abilities to govern in a crisis, improve the application of communally held resources in a disaster or epidemic, and mitigate community-wide losses" (Schoch-Spana et al., 2007 (page 10); Lal et al., 2020; Wolf-Fordham, 2020). The contact tracing training utilized the strengths of each stakeholder and provided community engagement during a public health crisis, which served to benefit public health leaders by applying community resources and mitigating losses.

Community engagement between academic partners and the community requires a mutually beneficial exchange of knowledge and resources (Public Purpose Institute, 2021). An essential component of the community-engaged approach is an open dialogue (National Environmental Justice Advisory Council, 1996; Hatcher et al., 2011). An open dialogue was practiced throughout the collaborative process between EWU and SRHD. Generally, academic partners can provide insight, education, and practical application on issues, and community organizations can gain knowledge, new resources, exposure in the community, new relationships with other community members, and the potential to increase the capacity of their organization (Public Purpose Institute, 2021). SRHD provided background experience and expertise in disease tracking and contact tracing, whereas EWU provided knowledge in the areas of training and education. By utilizing these complementary specialties, SRHD and EWU established a bidirectional relationship that led to the creative process of establishing the Contact Tracing Training. While EWU was the primary academic partner, additional regional higher education institutions, including Washington State University, Gonzaga University, and Whitworth University, provided expertise and feedback as community resources. Collaboration between academic partners, such as EWU's public health faculty and community organizations like SRHD, creates a mutually beneficial relationship while also benefitting the community.

As the COVID-19 pandemic impacted EWU's local community, an opportunity for community engagement commenced. At the time, Spokane, Washington, like much of the nation, faced closures of businesses and considerable concerns over the spread of COVID-19 in the Inland Northwest and Eastern Washington region. SRHD epidemiologists and program managers were recovering from the first wave of the COVID-19 pandemic with an eye on future increases in cases. In this climate, a conversation between EWU public health faculty and SRHD program managers commenced on how academia could support local public health efforts.

The result of the discussion between SRHD and EWU was the rapid development and delivery of a contact tracing training program by EWU for SRHD. The primary goal per SRHD was to train 50 contact tracers within six weeks. EWU public health faculty had secondary goals of bringing their experience in teaching and program development to benefit SRHD and the community and providing students an applied practice experience opportunity.

The Training Program and Teaching Methods

The program needed to be developed and delivered in a virtual format to keep faculty and students safe during this early phase of the pandemic. Fortunately, the EWU public health faculty's experience in delivering online course materials would expedite developing the

program and ensure quality in content delivery. The EWU public health faculty's pertinent experience in delivering online content included subject areas such as emergency response, case investigation, contact tracing, health law, and professionalism in public health. SRHD and EWU agreed that the primary content of the training program would be based on best practices put forth by the CDC and the Washington State Department of Health, in addition to the epidemiologists with expertise in contact tracing from SRHD.

The training program was then rapidly developed, implemented, and completed. The andragogy for the training included a slide presentation, small group discussion, and an experiential component. The trainings were designed to be done with a student-to-teacher ratio of one to three, with an average of 6 and no more than 12 students per training. The target populations to train were students in public health, nursing, and medicine; volunteers from the health district; and volunteers from health care fields from the Inland Northwest. The training program was pilot tested the last week of May 2020 and became fully operational on June 1, 2020, with 20 contact tracers trained by June 15 and over 50 contact tracers trained before July 1.

The contact tracers were trained to interface with SRHD personnel who were doing and would continue to retain case investigation reports of COVID-19. These case investigations focused on special populations such as minors, school-based outbreaks, and outbreaks within health care facilities. While SRHD epidemiologists would continue to follow those special populations, the contact tracers trained through the contact tracing training would focus on community and workplace outbreaks. Additionally, regional institutions of higher education would utilize instructors from the train-the-trainer component of the program to develop their contact tracing teams to trace the spread of COVID-19 at their institutions. Faculty and student engagement in the program, including the train-the-trainer component, helped increase the visibility of the EWU public health programs within regional institutions of higher education and the local community while fulfilling the primary and secondary goals of the program.

The program trainings were offered over Zoom and were intended to be completed in one sitting, with morning, afternoon, and evening time slots available. The training length was four hours, with an additional 1-hour SRHD online ethics training prerequisite. The 1-hour ethics prerequisite educated students on Health Insurance Portability and Affordability Act (HIPAA) and expectations regarding confidentiality as defined by SRHD. The four hour contact tracing training included a discussion on pertinent community services, SRHD's data entry system, the contact tracing process, COVID-19 isolation/quarantine, prevention best practices, and interviewing skills. Specific COVID-19 topics covered in the training included the incubation period, signs and symptoms, and transmission methods. These materials were revised as new

knowledge came forth. Examples of slides that helped students understand the incubation and infectious periods of COVID-19 are provided herein.

FIGURE 1. Slide from presentation

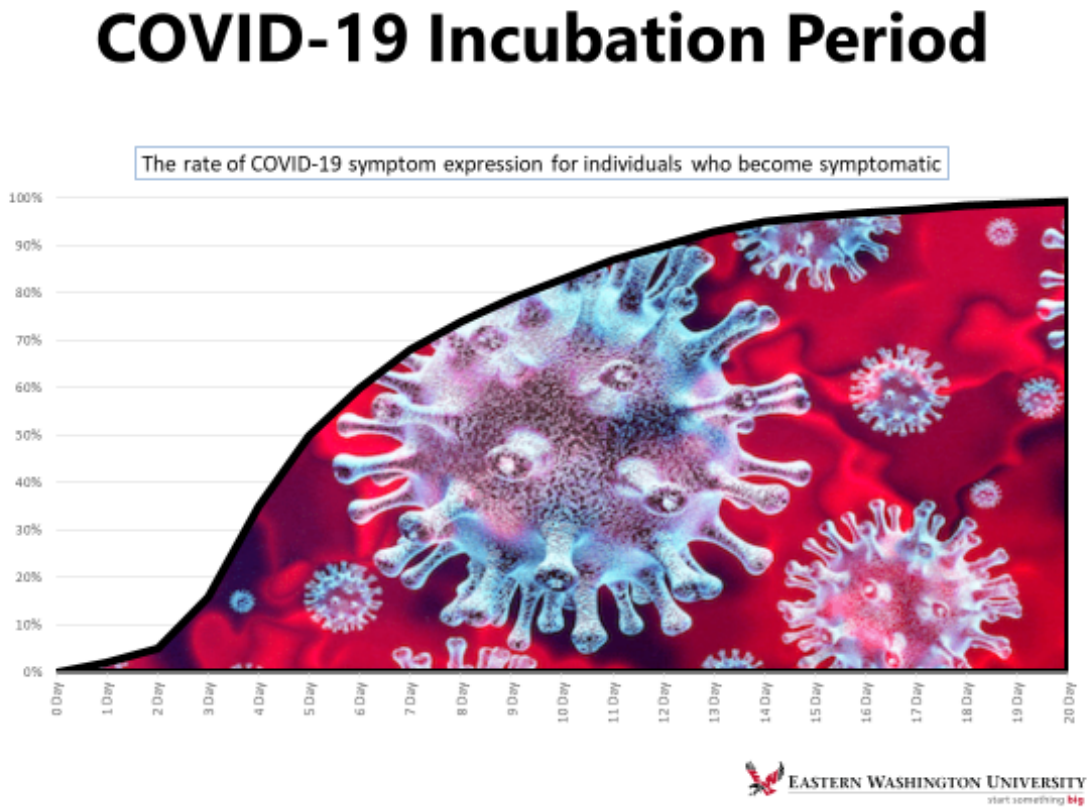
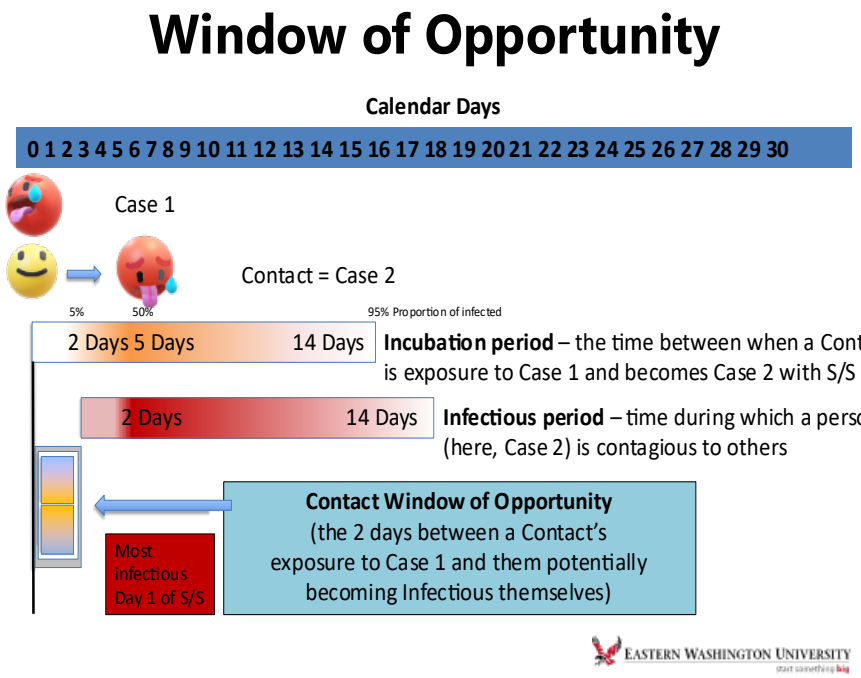


FIGURE 2. Slide from presentation



Beyond understanding the window of opportunity of transmission of COVID-19, the trainings incorporated a wellness component for contact tracers. This area focused on personal preservation, which reviewed how to manage confrontations and maintain wellness before, during, and after a contact tracing shift. This wellness aspect also highlighted the benefits of contact tracing for the community. An example of a personal preservation slide is contained herein.

FIGURE 3. Personal preservation slide

The contact tracing training ended with small group mock contact tracing calls, which allowed each student to be a contact tracer, a COVID-19 contact, and an observer of the process, using scenarios that helped students gain confidence in their roles as contact tracers. The scenarios were built on content previously covered within the training program. There were six different scenarios, so each student practiced with a different mock case, including contact demographics and social arrangements.

To conduct the mock scenarios, students were split into three groups with one instructor per group. In each small group, students received materials based on their positions of contact tracer, a COVID-19 contact, and an observer of the process. Each small group went through three rotations, affording each student the opportunity to rotate through each position. For each rotation, students were given materials to support their roles. Each student was given materials to utilize during the mock interviews. The mock contact tracer received an interview script, the contact's information, and the data collection methods. The contact tracer's script followed the *8-Steps to Contact Tracing* incorporated into the training. Also, the script included prompts, a checklist to guide them in handling contact information, and a data collection form, which resembled what would be expected in the field. The checklist was designed to help keep the flow of conversation on point and to reorient the contact tracer should a conversation go sideways.

Alternatively, students who were portraying contacts received contact information so that they could respond to questions and make the role-playing more realistic. Additionally, the student observer was given the opportunity to watch an active contact tracing role-play and provide constructive feedback to the participants during a debriefing, which helped solidify learning.

Each mock training scenario ended with a debriefing guided by an instructor and included feedback by both the instructor and the observing student. The instructor and observing student gave constructive feedback based on scenario-specific teaching points during the debriefing. Through role-playing and debriefing, students could give and receive feedback in a safe environment while building confidence in their roles as contact tracers.

After completing the Contact Tracing Training, students received a certification issued from EWU and endorsed by SRHD. Many students who thrived during the program were invited to enter the train-the-trainer portion of the program to help train contact tracers.

The train-the-trainer portion of the program was developed to expand the reach of the contact tracing training. It allowed other partners, including higher education institutions, to utilize the training resources better to prepare the region for the spread of COVID-19. The train-the-trainer trainings went over evaluation, set-up, and course management methods. It then reviewed highlights of the contact tracing training materials by focusing on the purpose of specific slides and how to deliver the material. Once this 3-hour train-the-trainer training was completed, prospective instructors were invited to co-teach a contact tracing training with one of the original trainers. This helped the new instructors gain a better understanding of the material while also practicing their delivery and receiving feedback. An associated checklist went over pre-training, training, and post-training expectations, which helped ensure the fulfillment of training requirements. The train-the-trainer materials provided instructional resources on content that included an overview of the contact tracing training, including logistical and evaluation resources, andragogical suggestions, and tips on how to conduct mock training, which included a mock training demonstration and debriefing session.

Discussion

The training provided students and faculty with an avenue to support the community and gain a sense of involvement during the pandemic. Through mock interviews, students were able to practice conversational dynamics while supporting those afflicted by COVID-19. Students conversed with individuals who were portrayed as being isolated and needing a friendly voice on the other end of the phone, as well as individuals who felt the pandemic was a farce and contact

tracers were an invasion of their privacy. Such conversations led to opportunities for building social and outreach skills, as well as opportunities for critical thinking and creativity. In addition, the training created an opportunity for students to expand on their cultural competency because effective community engagement generally begins with an understanding of culture.

In training, students guided individuals through ethical decisions which addressed individual liberties while promoting quarantining after significant exposure to COVID-19 to protect the public's health. The program was developed with a strong awareness of the increased impact of COVID-19 on minorities and communities of color. The death of George Floyd and the expansion of the Black Lives Matter movement occurred just days before the initial training was offered, which exacerbated already tense perceptions of racial inequities. This increased our focus on scenarios that provided teachable moments for contact tracing in diverse communities. Further, part of the training included identifying solutions and resources available to aid lower-income communities. Thus, when students asked questions of equity, instructors were prepared to answer. Teaching moments provided by the scenarios included multi-generational residences, limited opportunities to isolate or quarantine, the need to go to work even after being identified as being exposed, and the appreciation of contacts being concerned about divulging circumstances and relationships with others who may have been exposed to COVID-19. The trainings incorporated these complexities into the materials and scenarios and addressed ways for contact tracers to protect their own needs.

Similarly, due to a tense national political climate, as the potential for threats and hostility towards contact tracers increased, the importance of self-preservation and ways to protect the contact tracers from abuse was highlighted. Examples of self-preservation content included in the interviewing skills section of the training highlighted that the contact tracers did not create the situation, the call would likely have a foreseeable impact on those contacted. While it was a bad day for those contacted, this should not ruin the contact tracer's day. A repeated message for the training was that the resolution of the call was going to either be what the contact tracer intended or a referral to a supervisor.

To accomplish the above, tips on effective communication were presented and discussed. Communications skills like building rapport, being assertive, actively listening, and demonstrating compassion are central to a successful career in public health. However, these skills may be difficult to capture through standard coursework in a didactic setting where the focus is on rubrics and course learning objectives. Thus, the development of communication skills was a central component of the training.

Program Effectiveness

The contact tracing training exceeded its primary goal, met its secondary goals, and benefitted the local health department, community, local institutions of higher education, and students. SRHD's primary goal of training 50 contact tracers by July 15 was exceeded by training 53 contact tracers by June 24. Similarly, the train-the-trainer component trained twelve instructors from five institutions of higher education which further surpassed SRHD's training goals. EWU's secondary goals were met to provide applied practice experiences for students and benefit the community by protecting public health.

In accomplishing the program's goals, effective community engagement occurred. The faculty and students increased engagement between all regional higher education institutions. SRHD was better able to keep up with the contact tracing needs of the local community. The EWU public health programs received a few inquiries from potential students regarding the opportunity to pursue a Master of Public Health degree. Students were able to expand on their traditional education and serve their community during the COVID-19 crisis.
Additionally, many students quickly moved from volunteer status to employment opportunities as funding became available and the demand for contact tracers increased. Further, higher education institutions received contact tracers allowing them to open their campuses in the fall of 2020 with better response capabilities. To promote utilization of the training by academic institutions in the region, institutions were encouraged to brand the training with their logos and to use scenarios likely to be encountered by their contact tracers. This allowed the training to be shaped to meet the needs of each user while allowing each university to take ownership of its delivery. Official feedback has not been gathered from participating stakeholders, however, continued requests for contact tracers by SRHD, Panhandle Health District in Northern Idaho, and regional institutions of higher education suggest that the program continues to be beneficial.

Through the development and utilization of the Contact Tracing Training, with the associated train-the-trainer component, all the fundamental aspects of community engagement were met. This led to a stronger community COVID-19 response with stakeholder involvement, highlighting the benefits of experiential education.

Future Directions

Hopefully, another pandemic will not occur in any of our lifetimes but should a sudden, and substantial need for contact tracing recur, for whatever reason, there is one improvement that likely should be made to the contact tracing training. While the current contact tracing training

quickly trained over 50 contact tracers within 6-weeks during the pandemic, these individuals had difficulty scheduling a mandatory meeting with an SRHD epidemiologist to become SRHD contract tracing volunteers. This additional one-on-one training sought to ensure each student understood the process and the paperwork at SRHD. While this was well-intentioned, it was not practical during a pandemic. In fact, it created a bottleneck. The epidemiologists were extremely busy, making it difficult to complete this final step in the volunteer training process. Due to the bottleneck of this step, trained contact tracers were not becoming SRHD contact tracing volunteers as quickly as the community needed them.

To negate the bottleneck, adding a 30-minute training video by SRHD epidemiologists could remove the need for one-on-one meetings. This training video could highlight whatever the epidemiologists consider noteworthy regarding the contact tracing process, troubleshooting, and paperwork. This video addition would likely help ensure that students are competent and comfortable with the contact tracing process and paperwork and that the SRHD epidemiologists have efficiently conveyed their insights on contact tracing at the health district.

Thus, the addition of a training video by SRHD epidemiologists in the future would negate the need for individual meetings, which would promote efficiency in helping to get contact tracers actively volunteering in the community sooner.

Conclusion

The COVID-19 pandemic, with its many challenges, provided an opportunity for a university to partner with a local health district to train contact tracers in the community. Through community engagement, academicians helped support the local health district's efforts to contain COVID-19 and promote public health. The contact tracers, trained through the Contact Tracing Training, benefitted by gaining experience through applied practice experiences. In so doing, they developed their communication skills and helped to support their local health district and the community, including their campus communities. These efforts served to benefit the public's health through community engagement.

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