



National Institute of
Environmental Health Sciences
Worker Training Program

Spring 2021 Workshop Report

Using Best Practices to Sustain Training Programs During COVID-19 and Other Disasters

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Executive Summary

On April 21-22, 2021, the NIEHS Worker Training Program (WTP) hosted a [virtual workshop](#) to review the best practices of the program to sustain training during COVID-19 and other disaster response efforts.

The virtual forum, hosted via the ZoomGov platform, provided an opportunity for program staff, awardee organizations, and partners to engage in timely discussions about issues surrounding disasters and public health emergencies. Speakers and participants shared information about lessons learned from previous disasters and emergencies, and where gaps still exist in preparedness and response.

More information about the agenda and presentations can be found on the [workshop website](#). A recording of the entire workshop is also available online. The following are key themes from the workshop that should be considered for the program's path forward:

- **Adapt training delivery for new situations.** Over the past year, trainers and trainees have learned how to use virtual and hybrid class formats which allowed training to continue as the COVID-19 pandemic unfolded. Flexibility in new circumstances supports WTP's sustainability.
- **Incorporate technology.** The online platforms (e.g., Zoom, YouTube, Facebook Live, podcasts) enabled more people from various locations to deliver training and network. Although virtual training is not a replacement for all in-person training, incorporating technology is a way to expand WTP's reach. In addition to the virtual platforms used for training, several awardees also used augmented and virtual reality to simulate safety concepts.
- **Engage diverse communities.** Social and environmental determinants of health can produce disparities in how disasters, disease outbreaks, and emergencies affect a community. These determinants of health can also impact a community's ability to participate in health and safety training. Several awardees discussed

how limited access to computers or WiFi, food and housing insecurity, and other socioeconomic challenges impacted trainees' ability to participate. Providing language services or multilingual materials to engage communities, identifying solutions to increase access, and including diverse workers in health and safety leadership roles supports WTP's path forward.

- **Collect data.** Collecting data and success stories is critical for sharing the accomplishments and progression of WTP to multiple stakeholders and for identifying emerging needs of both trainers and trainees.
- **Support mental health and resiliency.** The effects of the COVID-19 pandemic, such as the downturn in the economy and virtual schooling for elementary through high school students, in combination with extreme weather events (wildfires, hurricanes, and extreme storms) and the ongoing opioid crisis means that workers have stressors from multiple sources. Supporting trainers' and trainees' mental health by building resiliency training into existing curricula and compiling external resources is necessary as WTP considers next steps for the future.
- **Focus on risk/hazard assessment and communication.** Risk assessment identifies workplace hazards and controls to prevent injuries and harm. Risk assessments should be paired with risk communication. Workers obtain the information they need to protect themselves and their community through risk communication that is consistent, meets their needs, allows them to adjust to new information, and that acknowledges uncertainty. WTP values risk communication that applies the precautionary principle, which emphasizes prevention in the face of uncertainty for emerging risks and hazards.
- **Focus on mentorship and instructor development.** Mentorship has benefits for both the mentor and trainee and in the long run advances WTP. Mentorship improves health and safety training, builds community capacity, and creates a cadre of diverse leaders. There is a demand for formal mentorship programs that can be a part of WTP's sustainability.

Introduction

Disasters and public health emergencies raise urgent concerns about the health and safety of workers and vulnerable communities. Since its inception in 1987, WTP has been a national leader in training workers to respond safely to man-made and natural disasters and infectious disease outbreaks. WTP has responded to numerous events – ranging from the 2001 World Trade Center terrorist attacks to the coronavirus disease 2019 (COVID-19) pandemic.

In the wake of the pandemic, WTP adapted, embraced new leadership, and leveraged new opportunities and partnerships to continue its overall mission. A look back at the year 2020 is evidence that WTP can and will continue to fulfill its mission and sustain training programs during disasters and public health emergencies.

NIEHS WTP Mission: Support the development of a network of nonprofit organizations that are committed to protecting workers and their communities by delivering high-quality, peer-reviewed safety and health curriculum to target populations of hazardous waste workers and emergency responders.



Sustainable Workplace Alliance trainers joined events in Puerto Rico to teach residents how to better protect themselves, their families, and communities during the pandemic. (Photo courtesy of Sustainable Workplace Alliance)

Pivot and Adapt

Every disaster or emergency presents a new set of challenges. This became evident for WTP staff and awardees at the onset of the COVID-19 pandemic in 2020. By late March and early April, several states had initiated quarantines and mandatory restrictions for public gatherings and travel. As the number of COVID-19 cases increased, WTP was faced with the urgent need to provide health and safety training to first responders and other essential workers. This meant that awardees would need to pivot all in-person trainings to a virtual environment, all while maintaining federal training requirements such as those prompted by the Occupational Safety and Health Administration (OSHA).

WTP approached these challenges with a timely response. Within a few weeks of the World Health Organization's declaration of COVID-19 as a pandemic, WTP released the "Protecting Yourself from COVID-19 in the Workplace" training tool, [website](#), and resources. On March 27, WTP released an administrative supplement and notice of special interest (NOSI) to fund nonprofit organizations, encouraging them to utilize virtual training platforms to increase health and safety awareness for responders and workers who face potential exposure to SARS-CoV-2 virus, the pathogen responsible for COVID-19. The NOSI was a significant component of WTP's COVID-19 Virtual Safety Training Initiative.

WTP has focused on evaluating their COVID-19 training program for effectiveness, outcomes, and impact. Online trainee evaluation questions were analyzed early in the response. Results showed that trainees agreed that the training prepared them to recognize COVID-19 hazards on the job and increased their knowledge on how to control workplace exposures.

Funding from the Coronavirus Preparedness and Response Supplemental Appropriations Act, 2020 has made WTP's extensive response to COVID-19 possible. This includes support of WTP's Virtual Safety Training Initiative and the more recent [COVID-19 recovery centers](#). The goal of the centers is to promote health, safety, and recovery training for essential workers and disadvantaged communities affected by high COVID-19 rates.

The [COVID-19 recovery centers](#) are led by WTP awardee organizations across the nation who are partnering with local businesses, community organizations, and worker centers. Together, they will assess COVID-19 health risks, train essential workers, and coordinate resources needed to reduce disease transmission and promote recovery in disadvantaged communities. The centers will reach workers and communities in several states and territories, including Florida, New York, New Jersey, California, Washington, Arizona, Massachusetts, Puerto Rico, and other states along the Gulf Coast.

While WTP's biosafety response dates back to Avian flu (2007) much training capacity was built under the Ebola and Infectious Disease Response Worker Training Program.

Embrace New Leadership

Within the past year, WTP has embraced new leadership across many levels. This included changes in program staff and principal investigators (PIs) at awardee organizations.

In December 2020, former WTP Director Joseph "Chip" Hughes retired from his role after serving for more than 30 years. Sharon Beard, an industrial hygienist, stepped into the role of WTP acting director in February 2021.

Beard has been a part of WTP for [more than 25 years](#). She first became involved with responsibilities to coordinate, evaluate, and improve initiatives surrounding the [Environmental Career Worker Training Program](#) (ECWTP), formerly known as the Minority Worker Training Program. As one of WTP's [training program areas](#), the ECWTP trains individuals from disadvantaged and underrepresented communities for sustainable careers in environmental restoration, construction, and other fields.

Beard will continue the legacy that Hughes started. She brings her passion to raise awareness and promote engagement on topics surrounding equity, environmental justice, and occupational health. She is an active member of the American Public Health Association and the American Conference of Governmental Industrial

Hygienists. She is also an active member of multiple working groups and committees, such as the White House Environmental Justice Interagency Council and the American Industrial Hygiene Association's Disaster and COVID Working Group.

WTP has also witnessed transition in awardee organizations, as many long-serving PIs have also retired. Although these changes present challenges, they provide opportunities for a new generation of leaders to bring fresh perspectives and innovative ideas to training programs.

Leverage Opportunities and Partnerships

The inauguration of U.S. President Joe Biden in January 2021 marked changes to come in federal policies. Many executive orders and initiatives are already underway on major issues like [climate change](#), [environmental justice](#), occupational health, and [economic infrastructure](#). As more attention is directed to these issues at the federal level, WTP staff and awardee organizations are leveraging new opportunities that will benefit the program's path forward.

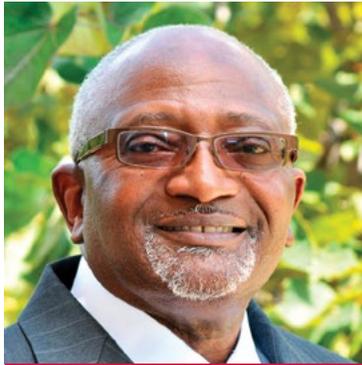
"The Worker Training Program is a unique aspect of NIEHS," said Gary Ellison, Ph.D., acting director of the NIEHS Division of Extramural Research and Training. "It is the most closely positioned operational unit within the institute to apply public health, which is very important."

Following Biden's inauguration, he appointed [new leadership at OSHA](#). Hughes was appointed as deputy assistant secretary for pandemic and emergency response and James Frederick, former principal investigator for the [United Steelworkers Tony Mazzocchi Center](#) (USW TMC), was appointed as OSHA's new deputy assistant secretary for occupational safety and health. This offers new and exciting partnership opportunities for WTP and OSHA in the future.

The new leadership at OSHA comes on the heels of the agency's [50th anniversary](#).

Hughes said one example of a potential partnership is OSHA's National Emphasis Program (NEP). Issued on March 12, 2021, the goals of the NEP are to: 1) ensure that workers in high-hazard industries are protected from exposure to the SARS-CoV-2 virus, and 2) prevent retaliation against workers who report unsafe working conditions or exercise their rights. Part of the NEP strategy involves outreach, and this provides many opportunities for WTP staff and awardee organizations to get involved.

As part of President Biden's Executive Order 14008 on [Tackling the Climate Crisis at Home and Abroad](#), the White House Environmental Justice Advisory Council (WHEJAC) was established. [Robert Bullard, Ph.D.](#), and [Beverly Wright, Ph.D.](#) – two long-time



Robert Bullard, Ph.D.

Pls of the [Deep South Center for Environmental Justice](#) – were appointed as members of the WHEJAC. Bullard and Wright, along with other WHEJAC members, will advise on how to increase the federal government's efforts to address current and historic environmental injustice by strengthening monitoring and enforcement in many areas, including disaster management, tribal and indigenous issues, and reduction of toxic chemicals in overburdened communities. Bullard and Wright take their insights

about underserved communities to the WHEJAC and will promote continuous funding of the ECWTP and other federal programs that address health, equity, and justice.

“The Worker Training Program will have a very important role in implementing new executive orders on COVID-19, climate change, and racial equity,” said Woychick. Beard, Ellison, and Woychick have been leading efforts on behalf of NIEHS to make sure that WTP's goals, accomplishments, and tools are integrated into the planning to respond to these executive orders.

The WHEJAC will complement the ongoing work of the National Environmental Justice Advisory Council, which was established in 1993 to provide advice and recommendations on environmental justice issues to the administrator of the U.S. Environmental Protection Agency.

Have We Seen This Before? Recurring Disaster Themes, Gaps, and Moving Forward

Mitchel Rosen, Ph.D., delivered the keynote for the workshop, with a focus on recurring themes across disasters, gaps in preparedness and response, and how WTP as a collective network can move forward.



Mitchel Rosen, Ph.D.

Rosen is the principal investigator for the [New Jersey/New York Hazardous Materials Worker Training Center](#)

Rosen first became involved with WTP in 1988 as a project coordinator for the Hazardous Waste Training Center at the University of Medicine and Dentistry of New Jersey (which has since merged with Rutgers University).

at Rutgers University. He has been a part of WTP for nearly 30 years, which has allowed him to see how the program has evolved when impacted by disasters and public health emergencies.

Rosen described the wealth of historical knowledge available in WTP’s technical workshop reports, the oldest dating back to 1990. “Our program has a long history of looking at issues and developing strategic ways to make a positive impact on worker health and safety,” he said. “These workshops have provided opportunities for us to think through potential problems, identify risks, and respond to protect workers. They have allowed us to create guidance and curricula, pave the way for other training programs, and push for better regulations.”

Disasters have been a part of world history, as well as WTP’s history. Rosen shared a timeline (Figure 1) which serves as a reminder of the many disasters faced. It was in 2001 after the World Trade Center attacks and anthrax bioterrorism incident that WTP began to delve deep into disaster preparedness and response training. Since then, the program has continued to expand work by responding to other disasters like Hurricanes Katrina, Sandy, Maria, and Harvey, floods in the Midwest, wildfires, and infectious diseases. WTP responded to each with critical training, technical support, and resources for thousands of workers and communities.

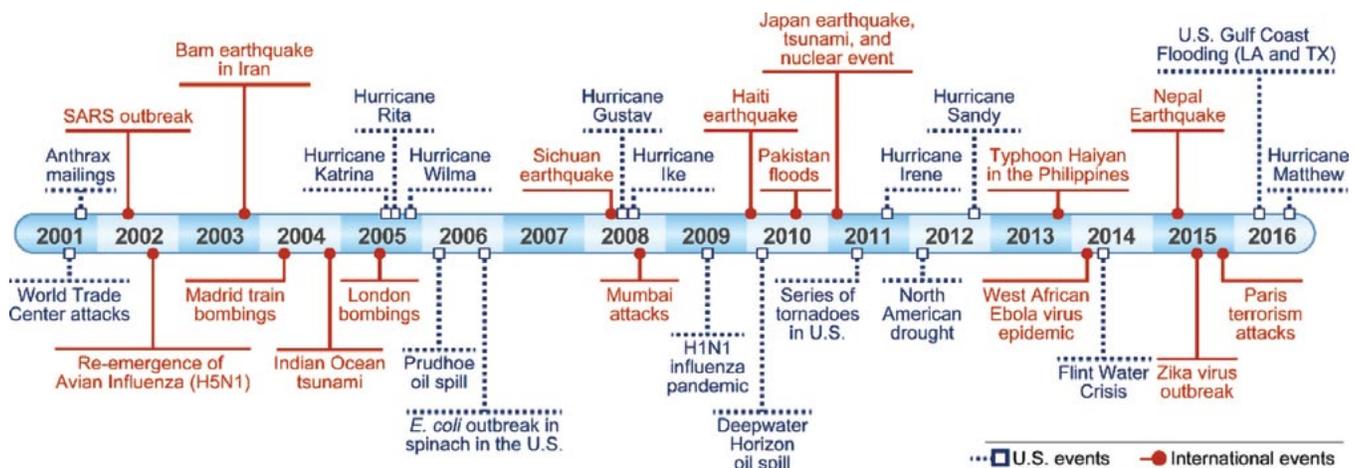
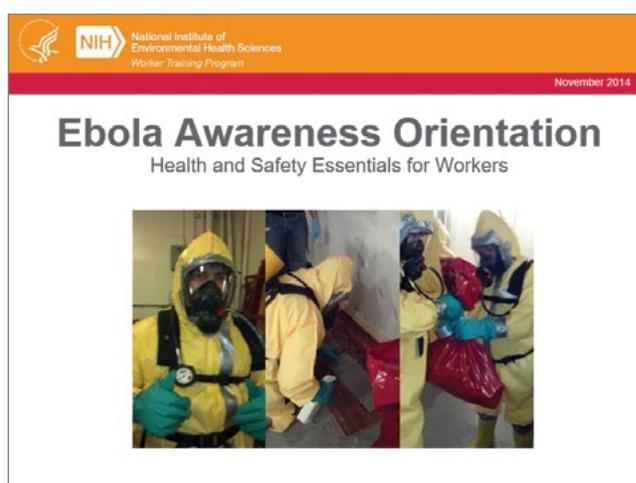
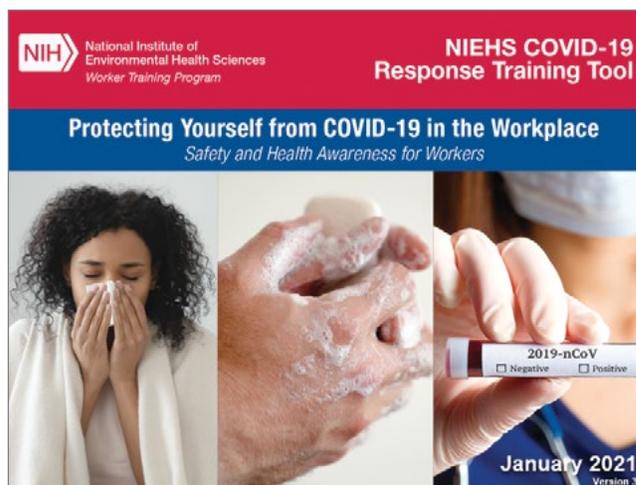


Figure 1. Timeline of major global public health emergencies and disasters, 2001-2016. From “[Conducting Science in Disasters: Recommendations from the NIEHS Working Group for Special IRB Considerations in the Review of Disaster Related Research](#),” by JP Packenham et al., 2017, Environmental Health Perspectives, 125(9), p. 2.

Rosen said while WTP has come a long way, there is much room for improvement in the years to come. Reflecting on his personal experience with WTP, along with the technical workshop reports, Rosen shared eight recurring themes and gaps that he has observed across disasters (see Table 1). Although the program has been able to successfully address some issues, it has fallen short on a few. While some of the gaps are external to training development and implementation, they are critical for WTP to understand and address to sustain training programs.

In closing, Rosen shared actionable steps that awardee organizations can take in the future (see Table 1). “Reviewing the lessons learned from these disasters, and more importantly implementing lessons learned is how we will improve the health and safety of workers and the communities most impacted by disasters,” he said. “As a collective of health and safety trainers, advocates, and activists, it’s part of our responsibility to close these gaps and implement the lessons learned to ensure that workers are protected from hazards during disaster response.”



As part of WTP’s response to disasters and emergencies, the National Clearinghouse for Worker Safety and Health Training develops booklets that can be used for training workers.

Table 1: Recurring Themes and Actionable Steps for Disaster Response

Recurring Theme	Key Points	Action Steps
<p>Regulations and Guidance Documents</p>	<ul style="list-style-type: none"> • Regulations and guidance documents are not sufficient to protect workers. • Over time, WTP has seen that regulations cannot (or will not) be issued in a timely fashion that will help protect workers. • Guidance typically falls short of what is needed for protection as well. 	<ul style="list-style-type: none"> • Use the precautionary principle as the basis for training. WTP must understand that taking preventive action in the face of uncertainty is a key element of worker protection. We may not know everything there is to know about a novel virus, but it makes sense to be cautious in our response. Reasonable measures to avoid threats that are serious and plausible must be taken until we have information that allows us to relax the protective measures needed.
<p>Responder Health and Safety</p>	<ul style="list-style-type: none"> • During disasters, responder health and safety must be a primary focus. Health and safety must be front and center in all communications with responders. • Identifying who responders are, keeping rosters of responders and response activities, and understanding potential exposures will help track them for long-term health effects. 	<ul style="list-style-type: none"> • Know who the responders are and protect them – this may include typical responders (e.g., police, fire, EMS, etc.) or volunteers.
<p>Risk Assessment</p>	<ul style="list-style-type: none"> • Risk assessment is critical to better identify hazards and controls. • The hierarchy of controls is important to use to try and eliminate hazards or incorporate engineering controls. • Oftentimes, personal protective equipment (PPE) is the only control available to protect workers; therefore, preparing workers for the use of PPE is critical. 	<ul style="list-style-type: none"> • Identify issues of concern at the community level. • Create situational awareness and understand that each disaster represents different scenarios and varying intensity, severity, and impacts.
<p>Communication</p>	<ul style="list-style-type: none"> • It is important to communicate information in various languages, and in terms that are simple and relatable to target audiences. • It is important to understand how certain terms may be used differently among groups based on cultural or experiential differences. • By closing communication gaps, we can effectively communicate risks and controls to protect workers during response activities. 	<ul style="list-style-type: none"> • Communicate risks by identifying accurate, appropriate, and trusted sources of information. • Learn and adopt risk communication strategies that eliminate misinformation and involve community stakeholders and trusted networks. This will help WTP effectively deliver messages.

<p>Coordination</p>	<ul style="list-style-type: none"> • Understanding the incident command structure is important to know who the essential players are in response efforts. 	<ul style="list-style-type: none"> • WTP should create working groups to focus on specific issues. There should be opportunities and spaces for discussion within and across each WTP training program area on specific topics like technology and core curricula.
<p>Partnerships</p>	<ul style="list-style-type: none"> • Partnerships are critical for disaster response. • WTP should not be meeting community partners for the first time during the emergency. • Planning and preparedness involve creating partnerships, developing communication routes, and coordinating activities before the disaster takes place. 	<ul style="list-style-type: none"> • Continue to develop and expand successful partnerships. This includes partnerships between awardee organizations, community-based organizations, local health departments, and other agencies in the community. • Enhance community partnerships by creating a multifaceted approach to coordination and provide consistent and actionable messaging. • Reach out to new partners that will enable WTP to close some of the training and outreach gaps. • Identify how partnerships work. It is important to understand that some partnerships are difficult to start and hard to nurture and grow. It is easy to underestimate the amount of work needed to develop and sustain partnerships. Awardee organizations should go beyond demonstrating the outcomes of partnerships, and better showcase the hard work required to develop partnerships and make them work.
<p>Impacted Communities</p>	<ul style="list-style-type: none"> • Many disasters directly impact vulnerable communities. • Disproportionate impacts on certain populations are due to limited literacy, geographic location, health disparities, and many other factors. 	<ul style="list-style-type: none"> • WTP should include the social determinants of health in planning for disasters.

Training

- Capacity building is important and continues to be a key factor for growth and expansion of training. This includes institutional, personal, and community capacity building.
- Just-in-time training is important, but it should not be the only type of training provided to responders.
- WTP often runs into the following issues:
 - Prior to a disaster, the demand for disaster training is non-existent. People do not always recognize the need for it.
 - During a disaster, responders are too busy dealing with the aftermath, which leaves limited time for training.
 - After a disaster is over, the desire to attend training wanes. People become uninterested, ready to move on to something else.
 - Identifying core training is essential. As disasters strike, WTP should supplement with critical just-in-time training to properly prepare responders.
- Expand technological capacity to teach new programs and reach new audiences.
- Foster new approaches in the capacity building process, especially with the development of new trainers. Younger trainers have helped provide guidance to older trainers during the COVID-19 pandemic on the use of technology.
- Apply a comprehensive approach to training. Core training needs to be provided before a disaster and just-in-time training during the disaster. Ideally, the just-in-time training will provide essential elements that reinforce core training.
- Expand core training to address worker and workplace issues by incorporating modules on topics like social isolation, drug use, suicide, and other mental health issues, as well as other long-term health effects following disasters.
- Remember that training is an iterative process. Continue to implement lessons learned and use them as a means of quality improvement. The goal of training is to increase knowledge and improve skills to do a job effectively. As new information is identified, WTP should be providing trainees with new knowledge, even if it contradicts what was previously known.
- Continue incorporating innovations for training delivery – be it through online platforms like Zoom, Facebook Live, or socially-distanced in a parking lot.



Trainees following an in-person training. (Photo courtesy of the Steelworkers Charitable and Educational Organization).

Successes and Best Practices

Speakers from awardee and partner organizations shared best practices and methods they have found to be successful to reach audiences and sustain training programs during COVID-19 and other disasters or crises.

Leveraging COVID-19 Training to Support Communities

Jodi Sugerman-Brozan, executive director of [MassCOSH](#), shared more about their organization's response to the COVID-19 pandemic. A partner of [The New England Consortium-Civil Services Employee Association](#) (TNEC-CSEA), MassCOSH's mission is to ensure that all workers earn a fair wage, are treated with respect and dignity, and return home alive and well.

Adapt Training and Outreach Methods

In the early phases of the pandemic, MassCOSH adapted training methods from in-person to online. They found one of the advantages of using online training (primarily through Zoom and Facebook Live) was the delivery of training in multiple languages.

MassCOSH found incredible success with the use of a town hall format for outreach and education. With this approach, people were able to ask questions directly and receive feedback. The town hall combined worker health and safety with other support from experts in unemployment and housing. Each town hall was streamed to Facebook Live from Zoom, and because Facebook is monolingual, MassCOSH hosted multiple town halls on the same topic in different languages (English, Spanish, and Portuguese). MassCOSH hosted five town halls, one of which was provided before the state released guidelines. The Attorney General's Office helped distribute information about the events. Overall, the town hall meetings reached more than 17,000 workers.



MassCOSH staff members helped distribute health and safety information, PPE, and other necessities for communities during the pandemic. (Photo courtesy of Jodi Sugerman-Brozan).

Worker Training, Empowerment, and Support

According to Sugerman-Brozan since March 2020, MassCOSH has delivered COVID-19 health and safety training to more than 2,000 workers. She shared how MassCOSH has trained and provided support for workers in various occupations during the pandemic. The organization has trained nearly 100 local public health officials responsible for enforcing COVID-19 worker protections in the state of Massachusetts. Other workers reached by MassCOSH trainings included community health workers, domestic and childcare workers, educators and other school staff, airport baggage handlers, and many others. MassCOSH also provided a COVID-19 safety toolkit for workers.

Childcare providers in Massachusetts were among the most affected by COVID-19. For in-home childcare providers, MassCOSH raised and distributed cash assistance, food, PPE, and HEPA air purifiers. These resources were distributed with critical health and safety and workers' rights information. MassCOSH used data to drive these targeted interventions for childcare providers.



Childcare provider with HEPA air purifier provided by MassCOSH. (Photo courtesy of Jodi Sugerman-Brozan).

During reopening plans in summer 2020, MassCOSH hosted a program for young workers called “Teens Lead @ Work” for 21 Boston youth. These youth learned and provided critical training to 474 teens from six partner youth organizations on COVID-19 health and safety and other topics, such as heat stress.

Advocate for Improved Policies and Workers’ Rights

MassCOSH has also been involved in efforts related to policies and workers’ rights. For example, the organization released extensive, science-based recommendations to Governor Charlie Baker’s Reopening Advisory Board to help inform decisions about health and safety protections needed to reopen the economy. The advisory board then developed a reopening plan, but it failed to follow many of the recommendations that MassCOSH put forth. The organization then issued a report card to show that [the plan failed](#) to address many factors needed to protect

workers, including the enforcement of health and safety, protection of workers’ rights, COVID-19 testing, and contact tracing. MassCOSH suggested that an amended plan was needed immediately.

MassCOSH helped launch the Somerville Workers Center and placed a worker center member on the Somerville Wage Theft Advisory Committee.

MassCOSH won passage of a law requiring the state to collect data on occupation of COVID-19 cases to help identify and protect workers most affected by SARS-CoV-2 and to respond to workplace outbreaks. The organization publicized the impact of COVID-19 on workers across the Commonwealth of Massachusetts in a [Dying for Work report](#). Released in September 2020, the report details the 59 known workers who died of COVID-19 after potential workplace exposures.



MassCOSH staff members stood in solidarity with unions across the Commonwealth of Massachusetts for their rights to a safe workplace. (Photo courtesy of Jodi Sugerman-Brozan).

Finally, MassCOSH stood in solidarity with many unions to advocate for more effective health and safety guidelines and policies during the pandemic. MassCOSH mobilized experts on their Health Technical Committee to support teachers’ unions in their fight to return to in-person learning. The advocacy called for improved filtration systems and other aspects of schools’ physical environment and policies. MassCOSH mobilized union and community partners in support of more effective COVID-19 workplace safety regulations. In collaboration with union and community partners, MassCOSH advocated for policies to reduce the impact of COVID-19 low wage and

immigrant workers. These policies included those related to emergency paid sick time, workers' compensation, hazard pay, and drivers licenses for all.

Lessons Learned for Future Crises

In closing, Sugerman-Brozan highlighted the following as MassCOSH's lessons learned to build resilience for future disasters:

- We must mobilize our own resources for safety while fighting for a systematic response. Even as the dangers of COVID-19 in the workplace became clearer, employers failed to protect their workers and the regulatory agencies usually tasked with enforcing health and safety protections were slow to act, if they acted at all.
- When disasters hit, there is a lag or lack of information for marginalized communities. Any system-wide safety and health response to the pandemic left people behind who are not in the mainstream of information dissemination.
- Building political power will ensure more equity during future crises. MassCOSH and partners built political power through organizing – as a result, they had more direct communication with city and state government about what communities needed.

Establishing a Model for Workers to Serve as Health and COVID-19 Monitors

Alice Berliner, coordinator for the [Southern California Coalition for Occupational Safety and Health](#) (SoCalCOSH), shared more about the Public Health Councils Initiative in Los Angeles County. A partner of the [Western Region Universities Consortium](#) (WRUC), SoCalCOSH is an advocacy group that advocates for safe, healthy, and secure jobs for all workers.

COVID-19 Issues in Los Angeles

Berliner shared two prominent case studies of COVID-19 and workplace issues noted in Los Angeles.

In May 2020, the Farmer John Meatpacking Plant experienced a COVID-19 outbreak where more than 100

workers contracted the disease. Workers complained about the lack of masks, training, social distancing, and protective barriers. The company only put in barriers and provided masks after people became sick.

In June 2020, Los Angeles Apparel had over 300 garment workers test positive for COVID-19 and four died. Unfortunately, workers were not informed of the cases by supervisors. The county closed the plant on June 27. In conversations with the garment workers, SoCalCOSH learned that managers would often not wear masks and that bathrooms were not clean.

Public Health Councils

In response to these case studies and other workplace issues noted across the region, the [Public Health Councils Initiative](#) was established. The public health councils were modeled after the union health and safety committees. Currently, the initiative is in the pilot phase targeting five industries that were selected based on outbreak and compliance data.

The public health councils are groups of workers trained to monitor compliance with Los Angeles County health office orders at their worksites. As part of this initiative, worker and community-based organizations are certified by the Los Angeles Department of Public Health (DPH) and serve as intermediaries between the councils and DPH.

There is a 12-hour train-the-trainer course for participating worker organizations and staff interfacing with the public health councils to become certified. The training course is based on the popular education model and covers topics such as job tasks associated with transmission, hierarchy of controls, vaccines, and processes for filing complaints. The training is rooted in prior case studies and utilizes graphics to communicate important health and safety topics.



Examples of illustrations and graphics used to communicate health and safety topics within and across the public health councils. (Photo courtesy of Alice Berliner).

Using a Community Health Worker Model

Maiber Solarte, a licensed social worker with [Make the Road New York](#) (MRNY), shared how they have continued to engage immigrant workers in their community health worker (CHW) training program during the COVID-19 pandemic. A partner of the [New Jersey/New York Hazardous Materials Worker Training Center](#), MRNY empowers immigrant and working-class communities to achieve dignity and justice.

Solarte said CHWs have become instrumental to help address the social determinants of health that disproportionately impact low-income, minority populations. Trainees enrolled in the CHW program are prepared to play key roles in the health sector by supporting communities most affected by COVID-19.

While COVID-19 has been a primary focus of training over the past year, other issues like opioid use and mental health resiliency have also remained important for MRNY's target audience.

Solarte said CHWs can support long-term opioid recovery by addressing the social determinants that play a role in opioid use disorder; increasing access to care; providing mentorship and support for their clients;

providing education about how to navigate treatment; and disseminating information to address stigma.

Additionally, CHWs are an important part of providing social support and linking individuals who have experienced traumatic events to additional sources of help. Building up trainees' knowledge and coping skills can help them deal with stress involved in disaster response and recovery. This is the foundation for CHWs to support resiliency in the individuals and communities they come across in their work.

Lessons Learned in Training Cycles

In March 2020, MRNY quickly shifted classes to the Zoom platform. Solarte said adapting lesson plans, tools, and strategies to a remote learning format has been and continues to be a work in progress.

She shared how each of MRNY's training cycles has offered specific lessons learned over the past year. For example, the transition to online classes for the spring 2020 cohort required contingency planning to give continuity to the program by getting students and trainers ready, assessing students' technological needs, and their familiarity with the Zoom platform. The creation of systems for outreach and recruitment of students for the fall 2020 cohort involved extensive work to connect with target populations. While these efforts utilized local partnerships with community-based organizations, Solarte said the bulk of outreach was accomplished through social media, emails, mailing, and calls.

Trainees' needs continue to evolve, as a year full of social isolation, grief, and financial hardship permeates the learning environment. Solarte explained that the individual and group dynamics in the spring 2021 cohort demonstrated the need for additional support for trainees' socio-emotional needs and to foster a learning environment that promotes resilience.



Mental health issues, fatigue, and burnout have been a major concern for workers during the pandemic. (Photo courtesy of insta_photos / Shutterstock.com).

Training Community Health Workers

To train CHWs, MRNY has utilized and adapted several resources on COVID-19, [opioids and substance use](#), and [resiliency](#) developed by the NIEHS [National Clearinghouse for Worker Safety and Health Training](#) (National Clearinghouse).

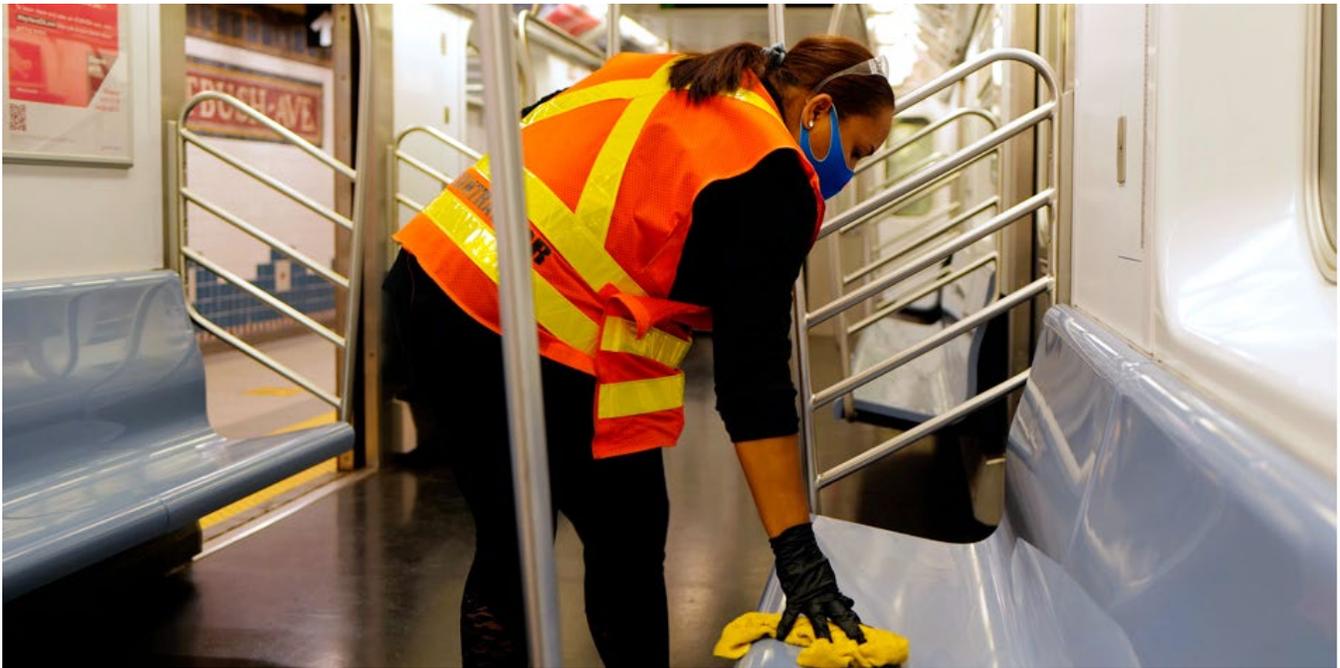
COVID-19 training courses were tailored to audience needs, focusing on the prevention of potential exposure and identification of risk factors, specifically in the line of work and activities that CHWs and health promoters perform at their organizations. Activities that put CHWs at risk include person-to-person contact through home visits, conducting community outreach, and providing educational sessions or client services at vaccine sites.

MRNY requested feedback from their partner organizations and CHW employers for potential hazards identification, as well as control methods and policies being implemented at their sites to prevent and protect

the CHW workforce. This information has been relevant to customize the CHW training courses by introducing case studies, hazard mapping activities for specific areas of work, discussion boards, and action plans. MRNY also included [COVID-19 resources and fact sheets](#) from the Centers for Disease Control and Prevention (CDC) that are relevant for CHWs.

MRNY tailored the opioids and the workplace curriculum to integrate the application of CHWs' core competencies such as motivational interviewing, case management, popular education, and client-centered counseling for clients impacted by opioids use disorder.

MRNY also tailored the disaster resiliency training to help CHWs recognize how they can use their skills in health education, training, and advocacy. For example, CHWs are trained in group facilitation to help trauma survivors understand what has happened to them. This helps normalize the trauma responses they may experience.



Worker cleaning subway car during the COVID-19 pandemic. (Photo courtesy of CHOONGKY / Shutterstock.com).

Local Services and COVID-19 Support for Immigrant Workers

Populations served by CHWs are usually low-income, immigrant essential workers facing high risk of exposure to SARS-CoV-2 virus. In New York City, CHWs have helped with several efforts, including:

- Conducting outreach for New York City's Test and Trace program.
- Facilitating access to health care services.
- Connecting individuals to necessities and local community resources such as food pantries.
- Providing vaccine navigation and referrals.
- Providing accurate health education about COVID-19 transmission, and precautions that people can take to protect themselves and their families as they return to the workplace.

Building Capacity for Overlapping Disasters

Marysel Pagán Santana, Dr.P.H., program manager with the [Migrant Clinicians Network](#) (MCN) in Puerto Rico,

shared best practices that they have implemented to build capacity for overlapping disasters on the island. A partner of the [New Jersey/New York Hazardous Materials Worker Training Center](#), MCN's mission is to create practical solutions at the intersection of vulnerability, mitigation, and health.

MCN has been using WTP funds to deliver training to community health center and Department of Health staff. COVID-19 supplemental funds have been useful in providing training and support for educators (teachers and support staff) and workers that perform contact tracing and monitoring activities.

Puerto Rico's Vulnerability to Climate and Disasters

Pagán shared how Puerto Rico remains vulnerable to the increasing frequency of disasters. The COVID-19 pandemic has exacerbated many issues across the island, as communities have still not recovered from previous disasters like Hurricanes Irma and Maria. These disasters have left numerous impacts on Puerto Rico's environment and on worker and community health, food, housing, job security, and many other factors.

An Approach to Sustainability

MCN uses an approach to sustainability – one that incorporates a bottom-up approach, long-term language, and commitment during implementation.

Their bottom-up approach involves strengths, weaknesses, opportunities, and threats analysis; resource mapping; and risk assessments before the development or adaptation of resources. This helps MCN: recognize challenges and successes of communities; understand permanent and temporary resources within communities; understand wants and perceptions; and identify stakeholders.

Pagán explained that language matters to address overlapping disasters. MCN accomplishes this in Puerto Rico by using long-term concepts while addressing the current situation as an example. Pagán said rather than just training on a specific topic, they address topics as primary concepts so it can be applied to other instances. This is relevant for public health emergencies and respiratory or infectious diseases. MCN also uses non-disaster related concepts and situations to disseminate important information to communities.

Pagán shared MCN's commitment during implementation of training and interventions. Sometimes MCN provides the tool and the knowledge, but not necessarily the support to implement. Overall, MCN's commitment is surrounding technical assistance, continuing education for emerging issues, and advocacy and public policy. For example, MCN provided support for the Department of Health in the development and implementation of new protocols for staff. MCN has also provided consultation on current worker safety measures.

Future Opportunities

In closing, Pagán shared lessons learned and future opportunities for MCN. There is a need for training on basic occupational health and safety topics and how it relates to emergency management for workers who are not classified as first responders.

The involvement of community health centers and Department of Health staff has been critical for MCN's work in Puerto Rico. This partnership has helped deliver occupational health and safety training, provide support in program implementation, and mobilize communities to protect workers during emergencies and disasters.



Considering Lessons Learned and Best Practices for Future Efforts

During breakout sessions, workshop participants shared how lessons learned and best practices can be applied to their future efforts.

What lessons and solutions from these presentations can you apply to your work?

- **Sustainability and flexibility:** Trainers and trainees need flexibility to adapt to a variety of pressures. These pressures include the political climate, extreme weather events (e.g., hurricanes, winter storms, wildfires, etc.), and the COVID-19 pandemic. Many of the challenges faced by the program compound so physical threats are overlaid with mental health threats, such as burnout. Using creative methods to reinforce emotional resiliency can mitigate some of these challenges. Train-the-trainer programs can also apply strategies to increase flexibility. Hybrid training approaches could be used in the future. Programs can send some supplies to trainees such as respirators.
- **Outreach:** The organizations that presented prior to the breakout session reached an impressive number of workers, which has always been a challenge, but more so recently. Materials that address worker safety and health within the pandemic have been effective tools. There are still challenges with increasing training engagement from certain industries so creative solutions can help.
- **Data collection:** Documenting the reach of the program with good data helps tell the story of the program and has funding implications. It is important to dedicate resources to data tracking and reporting, including delegating who is responsible to prepare data (i.e., removing personal identifiers and other data cleaning) for analysis and distribution. Good data

also involves accurately documenting and attributing contact hours.

- **Technology:** Technology has enabled trainings to continue in a COVID-19 environment and software innovations could enhance training, evaluation, and data collection.
- **Opioid training:** Opioids and other substance use issues were a crisis before COVID-19 and as the pandemic continued, opioid and alcohol use increased. Training on opioids, alcohol, and other substances could be included in resiliency trainings.
- **Community health workers:** WTP awardees used the community health worker (CHW) model to respond to past emergencies, like the 2014 Ebola outbreak. This experience was valuable during the COVID-19 response because CHWs help address mental health and social needs within communities. CHWs also connect organizations to broad and diverse community audiences.
- **Community engagement:** Children, teens, and other family members could attend certain trainings to get some basic safety knowledge. Trainings on mental health could apply to workers and their community. Resources that discuss mental health at the workplace and home may be welcomed by workers who need tools to facilitate these conversations with their family.
- **Puerto Rico and mainland collaboration:** Puerto Rico and other territories may lack resources and connections with organizations in the mainland could help fill gaps.
- **K-12 education support:** Related to community engagement is addressing challenges in kindergarten through twelfth grade education. For many workers, homeschooling their elementary through high school students during the pandemic has been another challenge to navigate on top of workplace concerns. School workers have also been impacted by the pandemic as a lot of teachers left the profession. Resiliency training could include strategies for resiliency in the home as the lines between the workplace, personal space, and school have blurred.

- **Engineering controls:** As more states reopen venues, there is an opportunity to educate employers, workers, and their broader communities about respirators and the hierarchy of controls. Workplaces have focused on face coverings as a primary control, but respirators and other PPE are the last line of defense in the hierarchy of controls. Therefore, there is a need to discuss ventilation and other engineering control strategies to reduce the risk of transmission.

Are there challenges that can be addressed using these approaches?

- **Technology:** Technology presents solutions and new challenges. Wi-Fi and technology access are not universal. Some trainees, both in rural and urban communities, only have a smart phone and may even have family members using Wi-Fi hotspots at restaurants for their internet needs. For instructors that rely on physical cues when teaching, it has been hard to gauge understanding on virtual platforms, especially when faces are not visible. At the same time, virtual or hybrid trainings allow for several benefits including: less travel, recordings can be viewed later, people from a variety of geographic locations can engage, and workers can network with those they would not have met otherwise.
- **Training engagement:** In the beginning of the pandemic, COVID-19 courses were attended by upwards of 50 people and now attendance has dwindled. Those who attend often have monitors muted and limited interaction with the instructor or other attendees. Burnout may be one factor affecting attendance and engagement. Now that a vaccine is available, there is a false sense that the pandemic is over and some question the need for training. Vaccines are just one tool in the toolkit for infection prevention and control, so training is still needed. Pairing events with vaccine distribution has promoted trainings. Town halls on Zoom, Facebook Live, or other platforms can support reaching a wide audience. Allowing access to recordings of these events will extend the reach of the information.

- **Vaccine training:** Some awardees have provided training on vaccines; however, proactively confronting myths or misconceptions and addressing hesitancy and concerns among different communities is a great need. Ensuring all community members have access to the vaccine, including those in public housing and senior living, is necessary. In some areas, local health departments have provided education to help prevent needlestick injuries. Vaccine training can include vaccine safety. WTP released the [Injection Safety for COVID-19 Vaccinators and Vaccine Administrators](#) fact sheet, which is a useful tool for vaccine training.



Photo courtesy of the New York/New Jersey Hazardous Materials Worker Training Center.

- **Mental health:** There is also a need to understand other factors that support or prevent people from getting vaccinated. Learning from the isolation people experienced during the 1918 influenza pandemic could provide insight on the mental health impacts of the current pandemic and how those relate to vaccination decisions.
- **Empowerment:** Training should empower workers to take control of health and safety at the workplace. Training that promotes empowerment also supports the development of new leaders.
- **Targeted Training:** Focusing training and curriculum around a high-risk worker population or specialized industry is a possible way to address the challenge of providing relevant training.



Fire fighters in New Jersey took a HazMat Operations course during the COVID-19 pandemic. (Photo courtesy of International Association of Fire Fighters).

Are the solutions and approaches sustainable for the long-term? If not, what can be implemented in your program to ensure that it is?

- **Address social determinants of health:** Health disparities existed prior to the COVID-19 pandemic and have compounded adverse effects of the pandemic for vulnerable populations. Addressing social and environmental determinants of health is a necessary part of preparing for the next infectious disease outbreak or extreme weather event as those increase.
- **Creative communication:** Resources for multilingual communities could include graphics that allow for communicating health information with minimal text. MassCOSH uses graphics to communicate the hierarchy of controls. Podcasts, such as those the International Brotherhood of Teamsters created for their members, are another creative communication method. Podcasts can help deliver training concepts to workers who lack time and access to technology.
- **Relationship building:** Partnerships help sustain training programs for the long-term. Partners can learn from each other and their shared experiences with WTP, which has decades of disaster response history. Engaging workers that are not traditionally involved also supports sustainability of training programs.
- **Mental health:** Making resilience and mental health training available to facilitate recovery from COVID-19 or natural disasters is vital to sustain trainers and trainees. During the pandemic, health care workers have faced issues with staffing and overwork, but this has been observed in other industries, too. Resiliency training offered by WTP is not just for emergency workers, so encouraging other workers to participate can increase the utility of the trainings.



Carpenters working during the COVID-19 pandemic. (Photo courtesy of New Jersey/New York Hazardous Materials Worker Training Center).

Have you been able to use the National Clearinghouse training tools in your program? If yes, how and with what populations? If not, do you have plans to use them in the future?

- Tools from the National Clearinghouse made an impact over the past year in which the training landscape changed drastically. Clearinghouse tools, such as the COVID-19 Essential Workers training tool, are often used as a starting point for expanded training or discussion. In general, awardees found the Clearinghouse tools were critical when less accurate information about the COVID-19 pandemic was widespread.
- CPWR has linked to a lot of the National Clearinghouse tools on COVID-19. During hurricanes combined with COVID-19, some awardees used booklets, especially those on flooding. Awardees have found regional webinars to be very helpful and relevant to their local context. Resources in multiple languages have been used to deliver training to diverse populations. For example, Puerto Rico received booklets in Spanish.
- Pocket guides and vaccination information provided by the National Clearinghouse have also been used by many awardees.

Looking back over the past year, are there other tools that you wish were available through the Clearinghouse or other organizations and government agencies?

- Active shooter and mass casualty training
- Workplace violence training
- Financial training
- Best practices for virtual training/lessons learned guide
- Vaccine information that combats misinformation (could be combined in existing training)
- Monthly informational sessions
- Working group to create additional resources and collaborate on model curricula
- Complex disaster training
- Agriculture and pesticide application
- Water quality

Meeting Training Requirements During COVID-19

At the beginning of the pandemic, many awardee organizations were concerned about how OSHA, the U.S. Department of Energy (DOE), the U.S. Department of Transportation, and other agencies looked at their training requirements. Awardee organizations were not necessarily able to meet those training requirements due to COVID-related restrictions.

- **Adjusting to virtual training:** Awardees had challenges meeting training requirements virtually. Many participants needed a pre-training course on how to use Zoom because they had not used online training platforms before. Organizations also had to quickly ramp up their information technology capabilities. Some instructors do not want to be recorded, so online training privacy was also a challenge.
- **Flexibility:** Representatives from the Midwest Consortium for Hazardous Waste Worker Training reported that the University of Minnesota has embraced online training and meets in smaller groups (four to six participants) to do hands-on training. Training is conducted either in larger indoor areas or outside.
- **Regulations:** Awardees faced uncertainty about whether adjustments were official. Some increased communication with local OSHA offices to confirm infection prevention plans and approval for training adjustments. Sites are also reconciling state guidelines with university or other local rules regarding travel, vaccines, and other infection control policies when planning trainings.

As people are starting to become more flexible and open up, how are you looking forward?

- **Training delivery:** Awardees have adapted to virtual training, however some courses have critical hands-on components. Some awardees have used a hybrid model with virtual lectures and in-person hands-on trainings with COVID-19 precautions. For example, the New Jersey/New York Hazardous Materials Training Center and the International Brotherhood of Teamsters have delivered a hybrid 40-hour training. OAI did in-person training and used a lead or asbestos air filtration system and encouraged trainers to use a portable speaker so everyone can hear clearly without shouting. Others have used webinars for the lecture portion and sent materials to trainees to do the hands-on portion from a distance on virtual platforms. Other methods include training delivery through podcasts and technologies offered by the SBIR E-Learning for HAZMAT Program.
- **Meeting the needs of vulnerable communities:** Immigrant communities in New York who could not work from home have been heavily impacted by COVID-19. Trainings were first held on Zoom and then on social media, however many trainees stopped paying for cell or Wi-Fi service so they could meet food and housing needs. Some unions delivered food and other support.
- **Equity:** Some awardees are considering how to advance more diverse leadership and senior trainers given the presidential administration's executive order and racial equity agenda.
- **Vaccine requirements:** Some universities are requiring vaccinations for the next term. Consequently, awardees based at academic institutions and others are considering vaccine requirements for in-person training.

How are you going to make up for those lost times, and address the impact of lack of training on worker health and safety?

- **Risk assessment and health and safety planning:** Awardees are creating health and safety plans to keep trainees safe during in-person training. TNEC-CSEA started in-person training in January 2021 with a limited number of trainees.
- **Ramp up to in-person training:** Awardees will try to offer normal courses in the classroom as soon as possible and will consider when open enrollment is safe to resume. There is a back log of trainees that would like operations courses and the current challenge is figuring out how to deliver the courses safely without losing clients' interest.
- **Resiliency:** It is important to not overwhelm trainers with the influx of requests for trainings that were not able to be delivered in the past year. Providing support and resources for resiliency and limiting class size can help trainers continue to effectively deliver training.
- **Integrating technology:** The International Chemical Workers Union Council (ICWUC) Center for Worker Health and Safety Education purchased iPads for classes so that trainees can use app-based material for the HAZWOPER classes. One of ICWUC's consortium partners is using visual headsets and augmented reality to simulate hands-on learning. However, trainers caution that virtual reality tools have limitations.

What is our role going to be? How can we collaborate with other agencies to make sure employers know the required training they should be giving workers?

- **Creative reminders:** Many trainees now prefer online training and TNEC-CSEA has used post cards to remind them of necessary trainings. Some trainees, notably fire fighters, prefer the hybrid model. Letting partners know the gamut of training options – in-person, hybrid, virtual – is important for meeting trainee needs.
- **Expanding education topics:** Some awardees acknowledge that there is not enough information on the role of heating, ventilation, and air conditioning (HVAC) in viral transmission. Awardees are also facing plateaus in vaccination rates and requests for COVID-19 training are decreasing. Emphasizing other measures for infection control is a critical role for WTP.
- **Bridging new partnerships:** Technology has eliminated regionality for most training organizations, and this presents opportunities for new collaborations. Filling gaps in different regions has also spurred new partnerships. For example, MCN formed relationships with health departments in Puerto Rico to reach a wider pool of workers that needed health and safety training. Awardees appreciate that others within the WTP network are responsive to requests for subject matter expert contributions.
- **Employer relations:** Some employers are reluctant to release workers to attend virtual trainings and many workers work multiple shifts. Relationship building and encouraging flexibility from employers in order to get workers the training they need is an important role for WTP.

Technologies and New Approaches Used During COVID-19

Speakers from awardee and partner organizations shared various technologies, tools, and approaches that have been useful in reaching and training target audiences during the COVID-19 pandemic.

Developing Podcasts Specific to Populations and Needs

The [International Brotherhood of Teamsters](#) (IBT) developed a series of COVID-19 podcasts. Lamont Byrd, principal investigator of IBT, shared how the podcasts have been useful for reaching difficult to access worker populations. Byrd described how IBT developed and disseminated the podcasts, and shared their lessons learned.

Using Hybrid Training Methods for 40-Hour HAZWOPER

The [Prevention, Preparedness, and Response \(P2R\) Consortium](#) implemented a hybrid training approach to deliver their 40-hour Hybrid Hazardous Waste Operations and Emergency Response (HAZWOPER) course during the pandemic. The course includes 32 hours online and 8 hours of in-person skills training. Rachel Brown, Ph.D. and John Guglielmo, HAZWOPER instructor, discussed alternative hybrid training formats, such as 360 video, virtual reality and WebGL (an interactive graphics program). They also shared how other hazardous waste training programs can adapt the hands-on portion of the training. The course and more information can be found [online](#).

Using Facebook Live Events

MRNY transitioned many of their community workshops to Facebook Live events during the pandemic. Perla Silva, MRNY's COVID-19 outreach team captain, shared how effective the Facebook platform has been in helping MRNY reach and educate communities about COVID-19. Among

other partners, MRNY has been collaborating with the New York City Department of Health and Mental Hygiene, Health + Hospitals, and the Test and Trace Corp to educate communities about COVID-19 safety and the importance of vaccination.

Using Webinars to Disseminate COVID-19 Information

[Nova Southeastern University](#) used webinars to disseminate critical information about COVID-19 to workers and communities as part of their Project South East Area Maritime Industry Safety Training (SEAMIST). The webinars were often co-sponsored by other universities and professional organizations. Principal Investigator Stephen Grant, Ph.D., discussed their choice of webinar topics and collaborators and shared their target audience's response to the webinars. He also shared insights they have gained in the process of disseminating the webinars.

Implementing Mobile COVID-19 Resources

Cell Podium, LLC, a [small business funded by WTP](#), has implemented mobile campaigns for COVID-19 prevention and vaccination guidelines. Cesar Bandera, principal investigator of Cell Podium, demonstrated the mobile campaign for workshop participants and shared more about its rapid deployment, interactivity, and analytics. This work is being supported by the COVID-19 supplement. Notably, public and private institutions across the U.S. and its territories have subscribed to the mobile campaigns.

Using Digital Apps to Conduct Training

[La Casa Guadalupana](#), a partner of the [International Union of United Auto Workers](#), has been using various applications such as WhatsApp, YouTube, and Google Classroom to teach adult English classes for health and safety training at home and work. Director of La Casa Guadalupana, Lourdes Torres-Monaghan, Ph.D., described challenges they have faced during the pandemic and how these applications have been useful in reaching vulnerable populations, particularly immigrant and Spanish-speaking populations in Detroit, Michigan, and surrounding areas.

Mentorship, Apprenticeships, and Instructor Development

During this session, speakers shared more about mentorship programs as they relate to union and non-union safety and health trainers. Speakers described what lessons about mentorship can be applied to instructor development programs and the lessons learned from apprenticeships that can be applied to occupational safety and health. The session concluded with a facilitated discussion to explore how to build a sustainable framework for instructor development and mentorship programs.

Exploring Mentorship in Union and Non-Union Occupational Health and Safety Training Programs

Sherry Baron, M.D., and Isabel Cuervo, Ph.D., with the [Barry Commoner Center for Health and the Environment](#) at Queens College in New York City, described a mentorship research project they performed.

Baron and Cuervo have worked with the USW TMC on its evaluation activities for several years. In this role, they evaluate the activities of union and non-union (worker center) health and safety training programs. USW represents members working in oil, chemical, and paper facilities, energy and utilities, health care, metals and more. The worker centers represent a network of centers in the New York and New Jersey area that provide health and safety training focused on construction work and other activities.

Baron explained that the idea for the research project emerged during exploratory evaluation discussions with the union and worker centers about their training programs. Each group suggested that mentorship could help them better achieve their training goals.

Baron explained that there are some similarities in how both groups view mentorship, but the application is different given the nature of their work environment. In a union-based environment, mentorship is often viewed as when trainers mentor newer trainers in the same plant, or when experienced program leads mentor new leaders in another plant. In a worker-center based environment, mentorship is often viewed as when trainers or staff mentor trainees to become leaders, or experienced worker center program leads mentor other worker centers to develop health and safety leadership programs.

The primary goals of the mentorship research project were to: 1) better understand how union and non-union members (worker centers) define mentorship and 2) explore how mentorship can contribute to health and safety training programs.

In 2019, the research team used semi-structured interviews with 11 leaders within the union-based programs and 11 leaders in the worker centers. Baron, Cuervo, and their research team summarized results from the interviews and presented the data back to each group separately to get their feedback.

Baron said they were amazed by the similarities found between the two groups based on how they defined mentorship, characteristics of a good mentor, and benefits of a mentorship program.

- **Worker center-based leaders** defined mentorship as the process of ongoing guidance, support, and sharing of knowledge to help someone accomplish their goals and grow professionally.
- **Union-based leaders** defined mentorship as a willing exchange between peers of information, guidance, and care that is based on trust and generally built over time.

Across the board, worker center and union-based leaders identified several personal characteristics and capacities of a good mentor. For example, they noted that a good mentor is trustworthy and patient and is committed to building leaders or future mentors. They also noted that good mentors have experience and make themselves available.

Worker center and union-based leaders reported similar benefits of having mentorship as a component of health and safety training programs.

Mentorship improves health and safety training.

- Improves credibility and dynamism to increase worker and trainer engagement.
- Provides input on how to improve curriculum and update technical content.
- Allows for retraining and updating skills as needed.
- Allows for real-time/real-world examples.
- Union: Can carry learning onto the shop floor and identify root causes.

Mentorship builds leadership.

- Creating a mentorship program would be part of the infrastructure to help develop leaders and trainers.
- Helps improve technical occupational safety and health skills.
- Helps develop mentorship skills.
- Helps form leaders that can actively participate in organizations.

Mentorship builds community.

- Reduces isolation.
- Promotes contact between trainers across different workplaces.
- This is very important for worker centers since there is no common workplace.
- Promotes reciprocal learning between mentors and mentees.
- Dual learning promotes peer camaraderie.

Mentorship builds health and safety leaders for worker power.

- Worker centers: Building power is about creating movement.
 - Goal: Creating action to improve overall rights for immigrant and all worker communities.
- Union-based: Workers need to feel empowered to create safe and healthy workplaces to reduce incidences at their own workplaces.
 - Goal: Creating action on the shop floor to strengthen a union health and safety program.

“Mentorship is not just about learning occupational health and safety information for the workplace, but also to be able to make changes within the workplace and advocate for better conditions,” said Cuervo.

Worker center and union-based leaders reported challenges (see list below) with incorporating mentorship into health and safety training programs.

- Adequate funding for both the mentors and mentees. Relationships take time.
 - Time commitment for mentors and mentees, and compensation is required.
- Make it a rigorous program for engagement and commitment.
 - Mentors need skills, knowledge, and adequate technical resources.
- Needs to be dynamic to meet changing needs of training field.

Learning from the Apprenticeship Model to Sustain Health and Safety Trainers

[Chris Cain](#), executive director of [CPWR – The Center for Construction Research and Training](#), shared more about the union apprenticeship model and how different aspects of the model can be used and adapted for instructor development.

CPWR is a nonprofit organization dedicated to reducing and eliminating conditions that pose risks to the health and safety of workers in the U.S. construction industry.

This includes pipe fitters, brick layers, ironworkers, roofers, heavy equipment operating engineers, and laborers, among others. As part of their WTP-funded efforts, CPWR works with building trades unions to support training through the apprenticeship model. This model ensures a more sustainable workforce in the construction industry and offers a unique advantage for workers who may not have previously found a steady career path.

Cain shared the history of the union apprenticeship model. The model emerged from the [guilds](#) (craftsmen and merchants) in the Middle Ages. Hundreds of years later during the Industrial Revolution, the balance of power between workers and employers changed. Cain said since then, power has been with the employer, where they make decisions about worker training and how workers do their job. This does not necessarily hold true in the building trades unions, because the functional leadership comes from workers and not management.

Cain also shared the scope of the union apprenticeship model, and how it works at a national level for CPWR. In the U.S., there are roughly 1,600 training centers that are funded through an annual investment of close to \$2 billion. These training funds come through negotiated contributions, and they are funneled through a contract into the joint labor management system with a group of employers and a local union. The governance board governs the work of the training centers, which are coordinated at a national level through the building trades unions.

Under their WTP grant, CPWR supports the training centers' delivery of health and safety training specific to hazardous materials and waste, fall protection, lead, asbestos, and many other topics. CPWR also supports the development of the instructors who deliver training to apprentices and workers.

“Depending on the year, economy, and demand, between 50 and 100,000 apprentices can be in play in any given year through these systems,” Cain said. “This is an earn-as-you-learn system. A person starts as a first-year apprentice, and the apprenticeship lasts between two to

five years.” She said while it depends on the trade and how they set their system up, an apprentice begins work immediately. Usually, the apprentice works during the day and goes to school at night, and there is no cost or tuition.

CPWR also does work on various workplace issues surrounding safety culture and climate. One example of their work in this area is the development of their Foundations for Safety Leadership course. The course has been integrated nationally as an elective into the OSHA 30-hour for Construction. While this work was not supported by WTP funding, the course has been tailored for use across U.S. Department of Energy sites.

Cain explained that there is a joint obligation between the employer and union for apprentices. The apprentices begin at a lower wage (entry level) and over the years as they develop their skills and experience, they move to a journey-level. “It is essential to mentor these apprentices to their journeyman status,” Cain said. “There is a lot of opportunity for mentorship across the different levels of apprenticeship.”

As part of the organization’s research arm, CPWR is conducting a study to explore the impact of a formal mentorship program for women apprentices and construction workers. This work is funded through a cooperative agreement with the National Institute of Occupational Safety and Health. “Women are terribly underrepresented in the trades, and they seem to experience challenges that men don’t face when coming into the building trades unions,” Cain explained. “There are unique safety and health hazards that exist for women in the trades that a lot of men do not experience.”

The study seeks to determine if a formal mentorship program would help: 1) women stay in the trades after they come into the apprenticeship program, and 2) impact women’s safety and health experience.

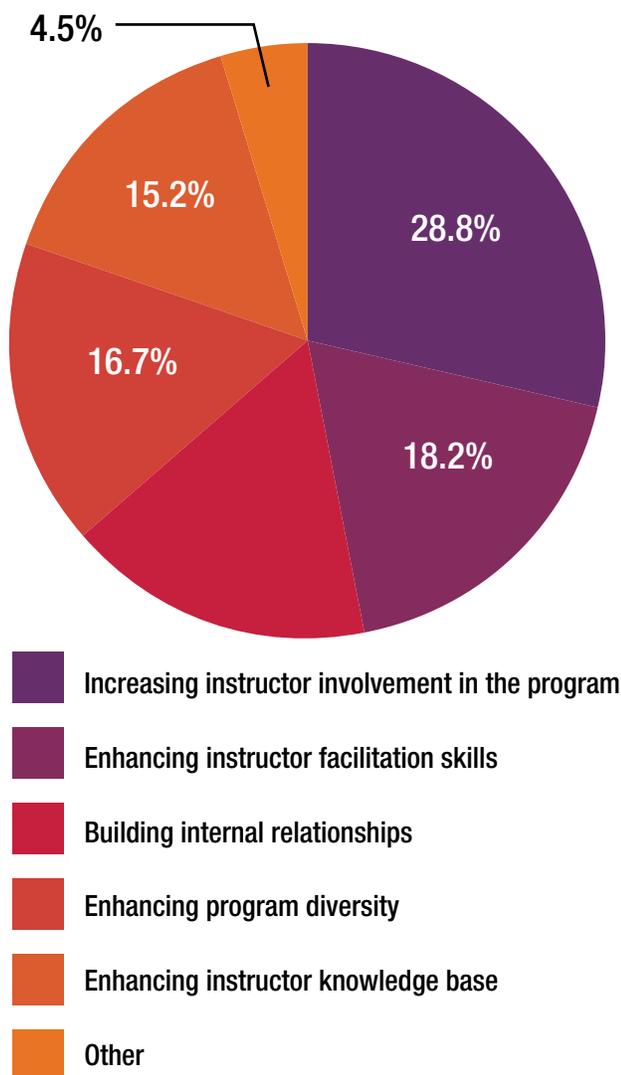
Once the study is complete, the curriculum will be available for anyone to adapt for use in any of the building trades, and others within specific industries.

Types of Mentorship Programs Used

A poll among workshop participants showed the following results:

What do you believe is the most important benefit to a formal mentorship program?

Benefits of a Formal Mentorship Program



What best describes the instructor development program utilized by your consortium?

Most respondents indicated that their consortium uses an informal mentorship program. Some respondents indicated that their consortium uses a formal mentorship program or focused continuing education. Very few respondents (13%) indicated use of self-directed learning.

Which instructor development program is of most interest to you?

Most respondents expressed interest in a formal mentorship program. Some respondents expressed interest in an informal mentorship program or focused continuing education. Again, very few (4.5%) expressed interest in self-directed learning.

Risk Communication

Mark Catlin of MDC Consulting and Training discussed the many challenges and issues surrounding risk communication during the COVID-19 pandemic.

Catlin defined risk communication and explained its complex nature for WTP and public health experts. He said while there is communication that takes place between WTP awardee organizations and students (trainees), it is important to recognize that students also bring in their own experiences and two-way communications from their worksite, union, boss, community, or family. This makes the process of risk communication very complicated and confusing.

Catlin also shared his observations and common elements of risk communication that he has embraced in working with awardee organizations over the past year.

Communicate often. Consistent communication is key, especially with remote (online) classes that are often shorter in duration compared to the traditional format. It would be good for WTP awardee organizations and trainers to consider strategies to keep in touch with trainees on an ongoing basis.

Know your audience and listen to them. During the pandemic, awardee organizations and partners have encountered new participants and target audiences. Some of these audiences come from new work sites and are unfamiliar with WTP. For other audiences that WTP has worked with in the past, their work site may have gone through drastic changes during the pandemic. These changes can cause trainers to feel disconnected from their audience, even if they have worked with them in the past. On the other hand, participants may feel a certain level of discomfort due to the onslaught of changes experienced within their workplaces.

Do not ask the impossible. It is critical to think about the messages that are disseminated to the target audience. Are we asking people to do or avoid certain behaviors that are very unlikely?

Allow for people to adjust to new information.

Understand that it takes people time to adjust to information, especially as it changes over time. The real difficulty is when classes are only offered once, so trainers are not always able to relay brand new information to trainees.

Oftentimes, it is difficult for workers to understand and incorporate new ideas into their workplace procedures and controls. For example, airborne transmission was not widely discussed early in the pandemic, but it became one of the focal points in addressing the spread of COVID-19 in later months.

Catlin said he noticed issues with this in the education sector, where many workers were more adamant about implementing measures to control dermal (or oral) exposure of SARS-CoV-2 virus (via disinfection) versus measures to control inhalation exposure (via improvement of building air flow). In this case, there was a disconnect in understanding that control for one route of transmission does not automatically translate to control for another route of transmission.

Explain values embedded in communication.

There are often values or assumptions embedded in communication, and these values may vary depending on the workplace or extenuating circumstances. At what point does risk communication become risk management?

Catlin said based on his observations with teachers and school workers, he learned that risk communication was often premised on the idea that in-person schooling was a necessity. He said in his experience, it is common to have school districts express that improving air flow within certain parts of a building is impossible, and that they would still want teachers and students to occupy those areas.

In his experience with health care employers in California, Catlin said that most of them do not acknowledge any obligation to comply with the Cal-OSHA Aerosol Transmissible Disease (ATD) Standard which has included SARS-CoV-2 virus since the beginning of the pandemic. The ATD Standard has been around for more than a decade, so it is very surprising that many health care employers do not acknowledge its requirements.

In his work with WRUC and the University of California Labor Occupational Safety and Health Program, Catlin noted that many trainees were not even aware of the ATD Standard because their employers had never talked about it. Most of the guidance shared by employers came from the CDC or World Health Organization.

Catlin said he is noticing similar issues with the rollout of vaccination programs, where there seems to be a lack of nurses' compliance with the Bloodborne Pathogen Standard, especially the needlestick safety issues.

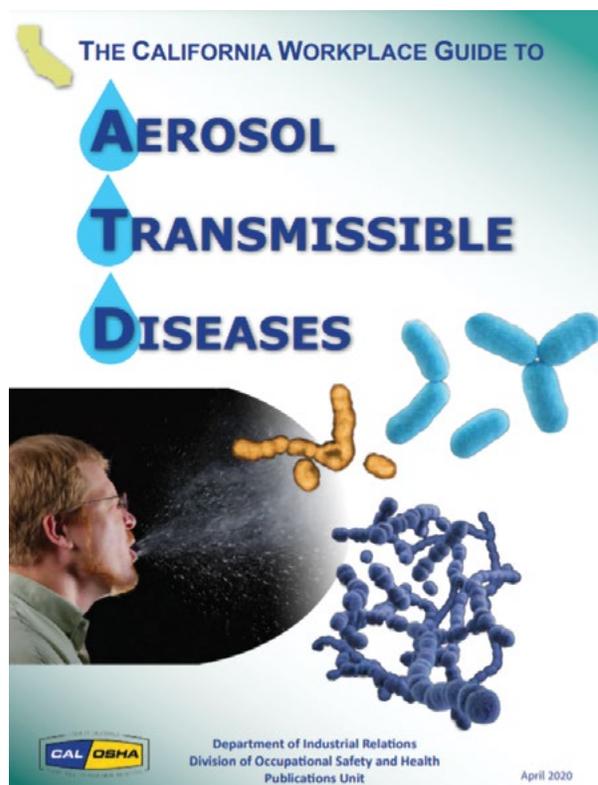
Based on these observations, it would be helpful to discuss values and assumptions that employers and workers have upfront which would serve in more effective risk communication.

Communicate uncertainty – that information and guidance will change as more is known. It is important to learn and adapt ways to better communicate uncertainty with target audiences. Catlin shared the example of uncertainty surrounding dermal/contact exposure for SARS-CoV-2 virus. In the early phases of the pandemic, CDC stated that this route of exposure was a possibility, however, the current data does not back this claim as significantly as that of inhalation. As a result of the uncertainty surrounding varying messages, many workplaces are still putting more emphasis on contact compared to airborne transmission.

Be honest and truthful. It is important that federal agencies and health experts be completely honest in messages disseminated to the public. Organizations, employers, and managers should be upfront and honest about what needs they can and cannot meet to protect the health and safety of their workers. Similarly, workers should do their part and be honest in their intentions to follow recommended safety guidelines.

Catlin concluded with more explanations about the precautionary principle and how it fits in the framework of risk communication. The precautionary principle is a part of WTP's foundation and has been especially important to keep in mind with all the scientific uncertainties and rapidly evolving information surrounding COVID-19. The precautionary principle is also embedded in the Cal-

OSHA ATD Standard, which for a longtime was the only enforceable OSHA standard that covered the coronavirus.



Cal-OSHA released the [California Workplace Guide to Aerosol Transmissible Diseases](#) in early 2020. This guide includes guidance for employers, trainers, and workers in various settings.

“The reason the standard has worked so well is because during its development, staff included a wonderful provision that talked about novel pathogens,” said Catlin. “It says that unless there is evidence to rule out the possibility that a pathogen can be transmitted through the air, there is an assumption that it is transmitted through the air.”¹

Cal-OSHA and the California Department of Health have a say in whether this novel designation is applied to a pathogen, and this was enforced at the very beginning of the pandemic in California. Catlin said positive outcomes are now being seen in worker protections because of the standard and its enforcement.

1 [California Code of Regulations, Title 8, § 5199](#)

The Path Forward

The lessons learned during the COVID-19 pandemic and recent extreme weather events add to the decades of expertise WTP has developed in responding to a variety of disasters. As the nation braces for future pandemics, emergencies, and disasters, WTP can and will continue to meet the training needs of responders and workers across industries by applying best practices discussed during the spring 2021 virtual workshop.

Best practices include adaptability, community engagement, data collection, and training or support for mental health, resiliency, and opioids. Risk communication based on the precautionary principle and mentorship are also best practices that sustains WTP. Using these practices well involves focusing on prevention during periods of uncertainty, knowing the needs of responders and other workers, and addressing the social conditions that may produce disparities in how communities are impacted.

- **Be flexible to change.** A key best practice is being flexible to change. Many awardees were able to introduce virtual training on different platforms (Facebook live, Zoom, etc.) and some incorporated other platforms such as podcasts to meet trainee needs during the height of the pandemic. As WTP enters a landscape of decreasing infection rates and increasing vaccination rates, several awardees are ramping up in-person or hybrid training. Trainings that dispel misconceptions about vaccines and inform on the hierarchy of controls, including the role of engineering controls like HVAC, can promote worker health and safety as vaccinations begin to plateau and more in-person trainings occur. Next steps for WTP and awardees include continuing the development of vaccine information resources and encouraging trainees that are able to be vaccinated to do so.
- **Prioritize engagement with communities.** Along with adaptation, community engagement is a best practice that advances WTP's mission. Community engagement includes making resources available in multiple languages. Several awardees offered

translation services for live events or offered trainings or townhalls in different languages. In addition to language services, several awardees used graphics that have minimal text and emphasize images to communicate health and safety information about COVID-19. This allows for the same resource to be used for communities with different language needs. Communities can be engaged with innovative training materials and be empowered to get involved in the health and safety process as monitors or CHWs. WTP and awardees should consider how different models for worker engagement in health and safety monitoring may apply.

- **Focus on data collection.** The proliferation of online training options and efforts to engage many communities means that more workers are not geographically bound for their trainings. Capturing trainee participation and other data is essential to the sustainability of WTP. Data collection may have looked different last year because of virtual attendance, but it is still important to capture where trainees are coming from, contact hours, and the effectiveness of the trainings. Good data helps tell a good story that justifies why WTP should continue and can identify gaps for WTP to fill.
- **Address mental health needs.** One gap that awardees dedicated a great deal of discussion to is the gap in support and training for workplace mental health, resiliency, and substance use. Workers across many industries are dealing with understaffing and may also have additional stressors from acting as caregivers for family, including supporting K-12 students in virtual schooling. As workers confront multiple stressors from the workplace and home life, an increase in opioid-related deaths has been observed during the pandemic. Awardees suggested different strategies to nurture resiliency, including training for workers and offering mental health training for community members as appropriate. WTP and awardees will consider the extent that the program can support mental health by providing training or compiling resources for workers to pursue outside of the program.

- **Communicate risks effectively.** An equally important best practice is risk communication that applies the precautionary principle. Awardees can sustain their training programs by honestly and frequently communicating risks to trainees. Effective risk communication can build trust even while information is changing. This is demonstrated by how several awardees engaged communities at the beginning of the COVID-19 pandemic by hosting well-attended town halls and providing masks even before the possibility of airborne transmission was widely acknowledged.

- **Focus on mentorship.** Finally, awardees reflected on the importance of mentorship as a best practice for sustainability. Both union and non-union (worker center) leaders in occupational health training value mentorship to develop new leaders that are active and empowered to create safe and healthy workplaces. Mentorship allows for dual learning between the mentor and trainee and also provides a sense of community, which is very needed as isolation during the pandemic has impacted many. Ultimately, mentorship is crucial to develop diverse, new leaders that can extend the impact of WTP far into the future.



Trainers partnered with a COVID testing site in Canóvanas, Puerto Rico. As the site received residents for testing, trainers provided COVID-related training and handed out masks and hand sanitizer. (Photo courtesy of Sustainable Workplace Alliance).



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