NIEHS WTP Response to the COVID-19 Worker Protection Crisis Collegium Ramazzini, October 25,2020

Chip Hughes, Director, NIEHS Worker Training Program

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NIEHS Superfund Worker Training Program

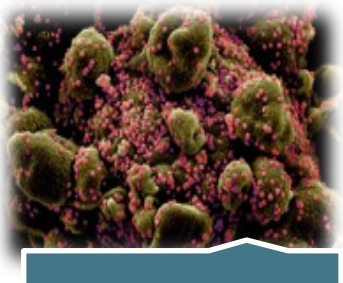
- **Mission:** To prevent work-related harm by providing training programs for hazardous materials handlers, chemical emergency responders, and waste cleanup workers
- **National Network:** Over 100 non-profit safety and health training organizations combined into 18 training consortia
- **Where:** Training in all 50 states and U.S. territories.
- **How Many:** In FY2020, 177,000 workers trained in 10,400 courses, approximately 4 million trained since program began in 1987

Worker Training Program All-Hazards Approach

Exposure to hazardous substances and work environments may result in adverse effects on the health and safety of employees.

All Hazards

Known



New & Emerging

Unidentified

All Hazards

Everyday

Disaster-related

Using the precautionary principle, the WTP delivers safety and health training that leads to worker protection against any and all hazards.

NIEHS Worker Training Program: Overview of Components

Hazardous Materials Worker Health and Safety Training (U45)

- Hazardous Waste Worker Training Program
- Hazmat Disaster Preparedness Training Program
- Environmental Career Training Program

Department of Energy/NIEHS Nuclear Worker Training (UH4)

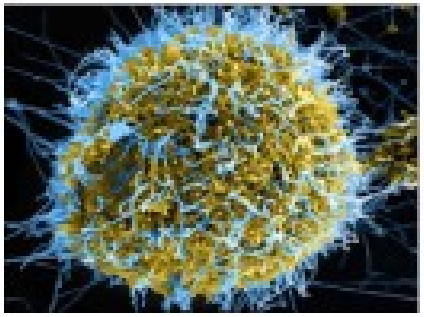
Ebola Biosafety & Infectious Disease Response Training (UH4)

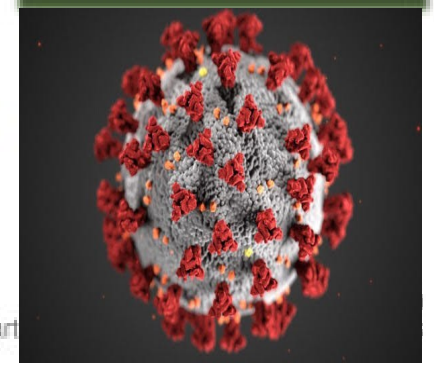
(2016-2019)

Small Business Innovation Research (SBIR) E-Learning for HAZMAT and Emergency Response (R43/R44)

WTP Role in Infectious Disease Response

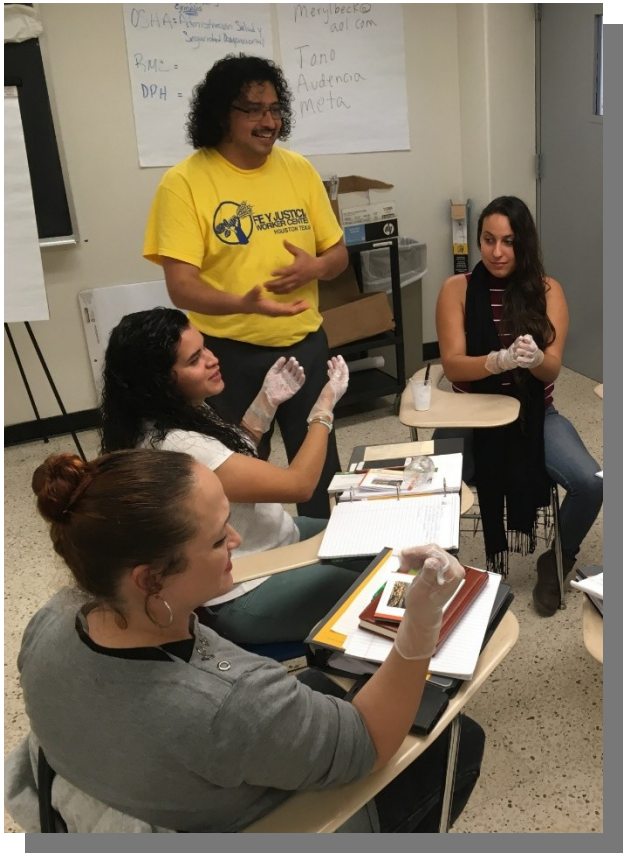
- **HAZMAT & Biological Safety Training:**
  - Provided occupational biological safety training to workers during
    - H5N1 outbreak
    - Anthrax attacks (2001)
    - H1N1 Avian Influenza outbreak (2009)
    - Mold remediation from Hurricane Katrina (2005) and Sandy (2012)
    - Ebola Virus Disease Preparedness (2013)
- **Training by NIEHS WTP Awardees integrate:**
  - Bloodborne Pathogens standard (29 CFR 1910.1030)
  - OSHA's Respiratory Protection standard (29 CFR 1910.134)
  - OSHA's Personal Protective Equipment (PPE) standard (29 CFR 1910.132)
  - Section 5(a)(1) of the Occupational Safety and Health (OSH) Act of 1970 (General Duty Clause)
  - OSHA Best Practices for Hospital-Based First Receivers of Victims From Mass Casualty Incidents Involving the Release of Hazardous Substances.
  - WTP training >160,000 workers annually, through combined programs
- **Encourage Innovation in Training with:**
  - Appropriate adult education techniques & literacy
  - Training quality improvement





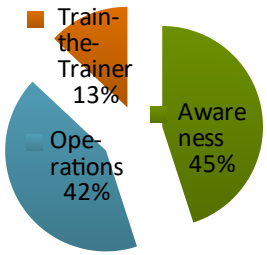
NIEHS Ebola Biosafety and Infectious Disease Response Worker Training Program (IDR WTP)

- Build federal capacity for biosecurity, biopreparedness, and rapid response to emerging infectious diseases.
- Develop an infrastructure of trainers and organizations who can be a resource during emergencies.



Gap Analysis & Needs Assessment

Figure 2: Total Training Courses Developed



Literature Review of Health & Safety Training

71 courses found:

52 awareness, 9 operations, 6 comprehensive, 1 clinical care, 3 train-the-trainers

Target Populations

8 main categories; 12 groups labeled as "other"; heavily focused on PPE, decon, and respiratory protection.

Challenges

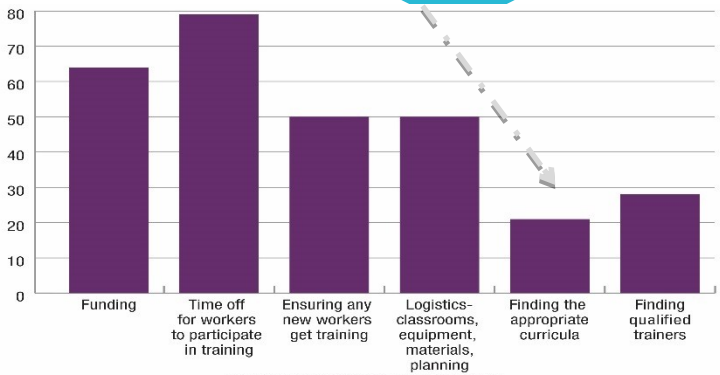
Time off for workers to participate in training was one of the biggest challenges followed by funding for developing training.

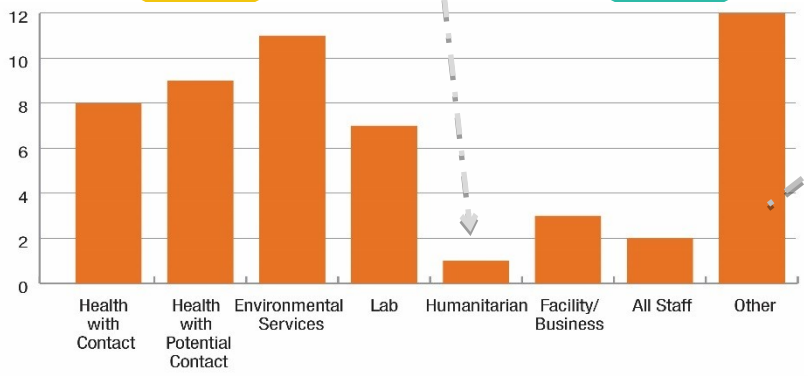
Gaps

Training efforts for outbreaks do not endure past the incident; Hospitals focus only on infection control and not worker health and safety;

Needs

A broader infectious disease response with emphasis on: General worksite preparedness; All-hazards competencies; Risk recognition skills





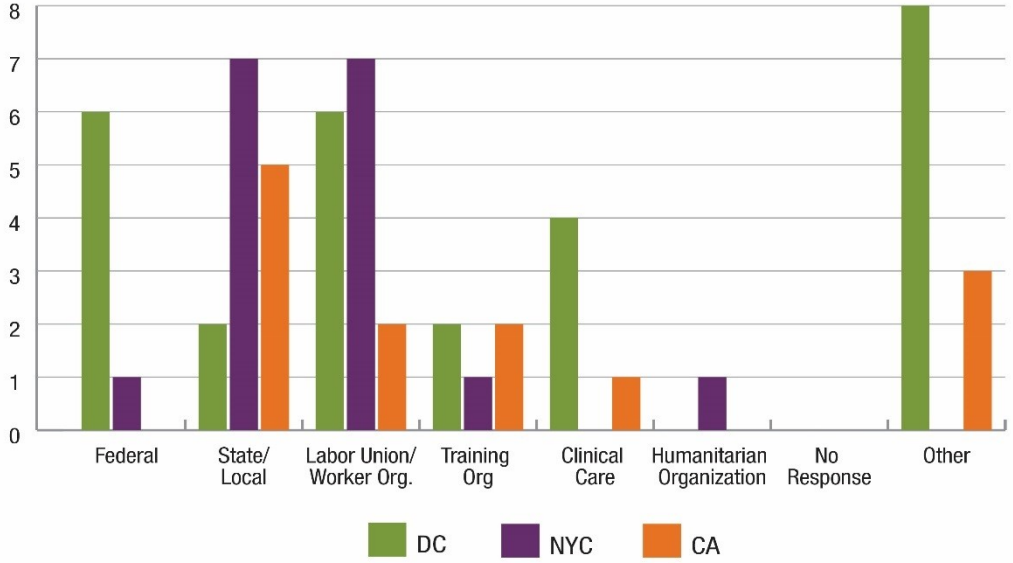
The most trainings (12) reported were created for "OTHER" workers, including:

- Airport/aircraft cleaners
- Airport workers
- Compliance officers
- Environmental remediation workers
- Epidemiologists
- Maintenance staff
- Other staff potentially involved in response
- Public health responders
- Urban mass transit workers
- Volunteers

Pathogen Exposure Gap Analysis & Needs Assessment

Stakeholder Discussion Key Themes:

- Infection control, emergency response and occupational health need to be better interconnected
- Training efforts for outbreaks do not endure past the incident
- Federal guidance is disease-specific and not directly adaptable by many end users outside of the healthcare profession
- Hospitals focus only on infection control and not worker health and safety
- A broader infectious disease response is needed with emphasis on:
  - General worksite preparedness
  - All-hazards competencies
  - Risk assessment skills



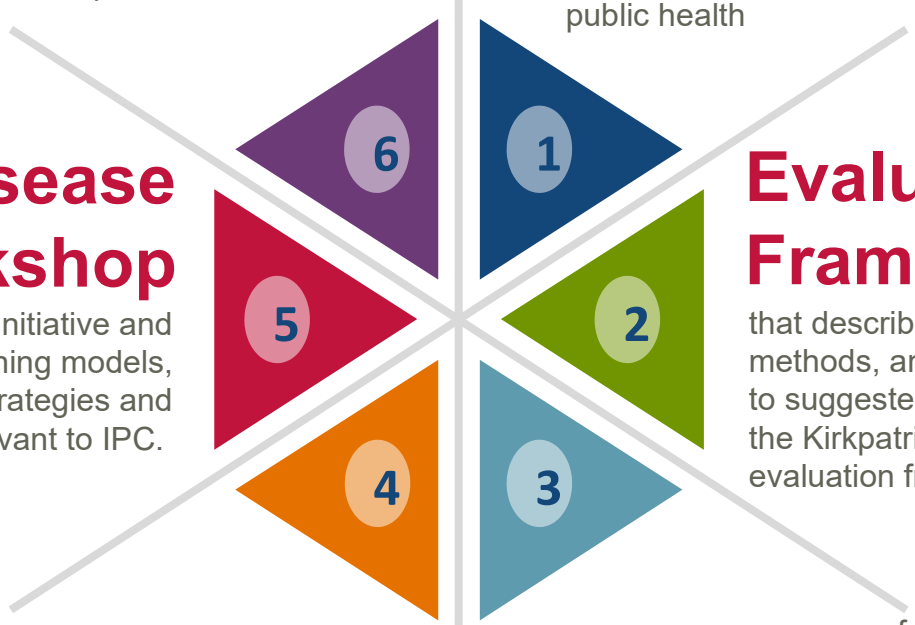
Engagement for Worker Protection from Pathogen Exposure

National Capacity

That empower the build out and mapping of training activities nationwide while identifying synergies to implement cross-cutting partnership & collaborations

Collaborations

among professionals in disaster response, hazardous waste management, IPC, biosafety, medicine, occupational health and safety, and public health



Infectious Disease Workshop

launch the IDR training initiative and discuss successful training models, planned or existing strategies and frameworks relevant to IPC.

Evaluation Framework

that describes evaluation questions, methods, and data sources in addition to suggested common measures using the Kirkpatrick model as part the IDR evaluation framework

5 Pilot Training Sessions

To facilitate awardees with customizing the module, and integrate four case studies, five pilot sessions conducted in NY (2), NE, GA, and NC

PSD guidebook & module

a four-hour course to highlight credible PSD resources and clarify the use of these existing resources to facilitate occupational safety precautions;

Pathogen Safety Data: Understanding Exposure Risk Levels

Occupational Exposure

- Conducting normal work activities
- Causal interaction
- Physical contact
- Providing direct medical/supportive care
- Conducting clinical laboratory or research
- Handling dead bodies
- Cleaning and disinfecting environments
- Performing maintenance work
- Handling, transporting, treating and disposing of waste
- *R*

Exposure Risk

Target Populations At-Risk

- Determine level of risk
- Determine minimum engineering and administrative controls required
- Determine if exposure has occurred
- Determine if symptoms are present
- Ur
  ex

Low Risk

Intermediate Risk

High Risk

First Aid/Medical Surveillance:

- Become fluent with personal protective equipment (PPE) options
- Understand hazard communication plan; know when to appropriately escalate
- Become familiar with site-specific standard operating

PPE

Hazard Communication Plan

Site-Specific Plan

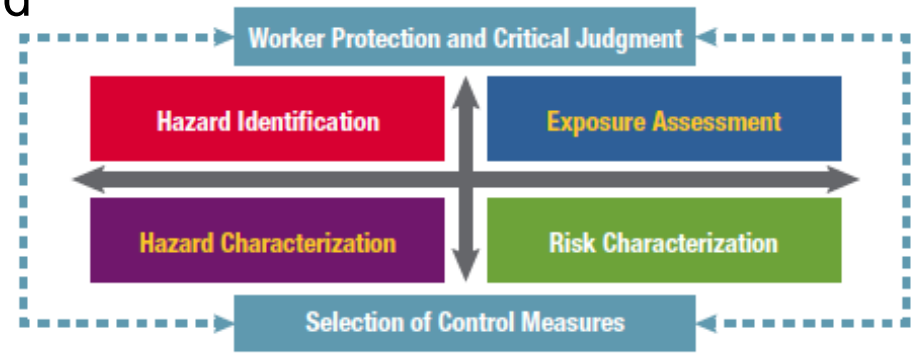
Key Characteristics of Infectious Disease Exposure Assessment

- Pathogenicity and virulence. Infectious dose. Severity of potential health effects.
- Proximity to the contaminant source.
- Environmental survivability and transmission.
- Potential for sprays, splashes, and aerosols generated during work-related procedures.
- Effectiveness of existing controls.

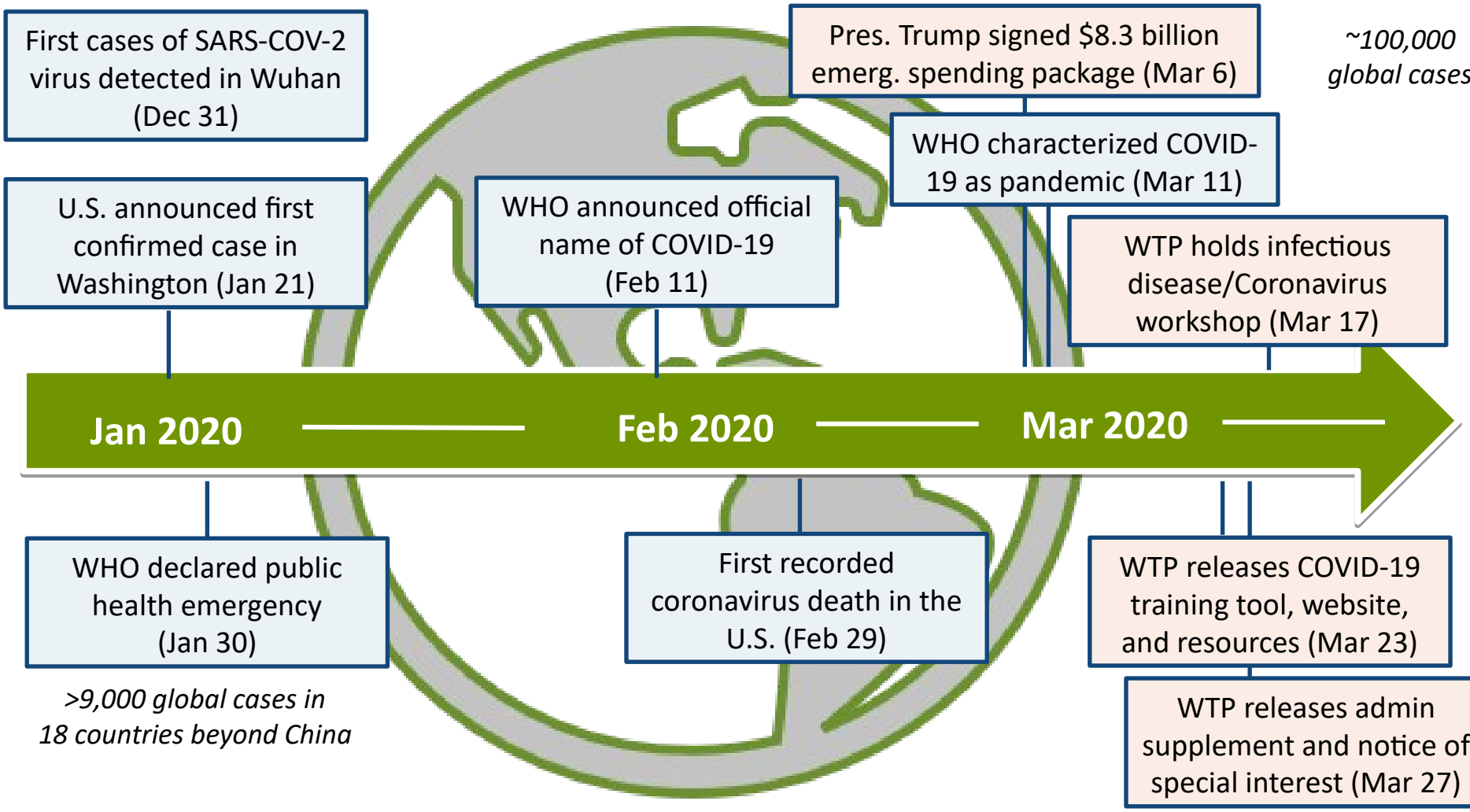
Pathogen Safety Guidebook & Training Module

Objective: 4-hour course to train workers with potential exposure to infectious disease:

- Access, use and difference between existing PSD resources
- Acclimatize with key infectious disease terminology used in PSDs
- Explain the use of PSDs in risk assessment, exposure control and hazard mitigation models.



Timeline of Events: WTP Activation for COVID-19 Training



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NIH/NIEHS WTP COVID-19 Virtual Safety Training Initiative

WTP received $10 million from the Coronavirus Preparedness and Response Supplemental Appropriations Act, 2020

Goal: To increase health and safety awareness for responders and workers who face potential exposure to COVID-19

Training Initiative Objectives:

- Identify key **evidence-based methods** to **prevent and respond to COVID-19 in workplaces** providing essential services
- **Create a virtual training platform** for frontline healthcare, responders, law enforcement, environmental and critical service workers
- **Build a cadre of virtual safety trainers/ advisors** to **deliver remote training** via advanced training technology to frontline workers

Essential Worker Populations for COVID-19 Training

Responders, Public Safety

Service Providers

Community

Healthcare Providers

Government Employees

Other

COVID-19 Virtual Safety Training Platform

WTP and VIVID Learning Systems

VIVID learning systems
An HSI Company

- Developed COVID-19 general awareness training tool into an asynchronous, e-learning package
- Grantees are:
  - Using the tool as is, or
  - Incorporating it into their own learning management systems
- Categories of workers trained: Management, construction, first responder, healthcare, military, science, and others

4,600 sign-ups

3,200 completions

90% indicate training is useful

Training data as of 5/15/2020

https://niehstraining.vividlms.com/

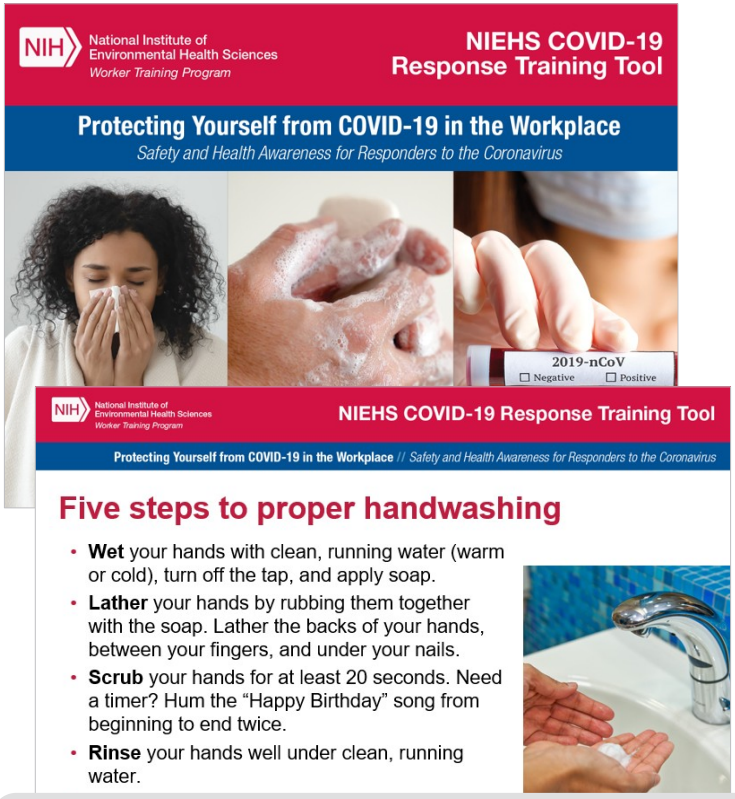
Top Line Challenges for WTP Grantee Training

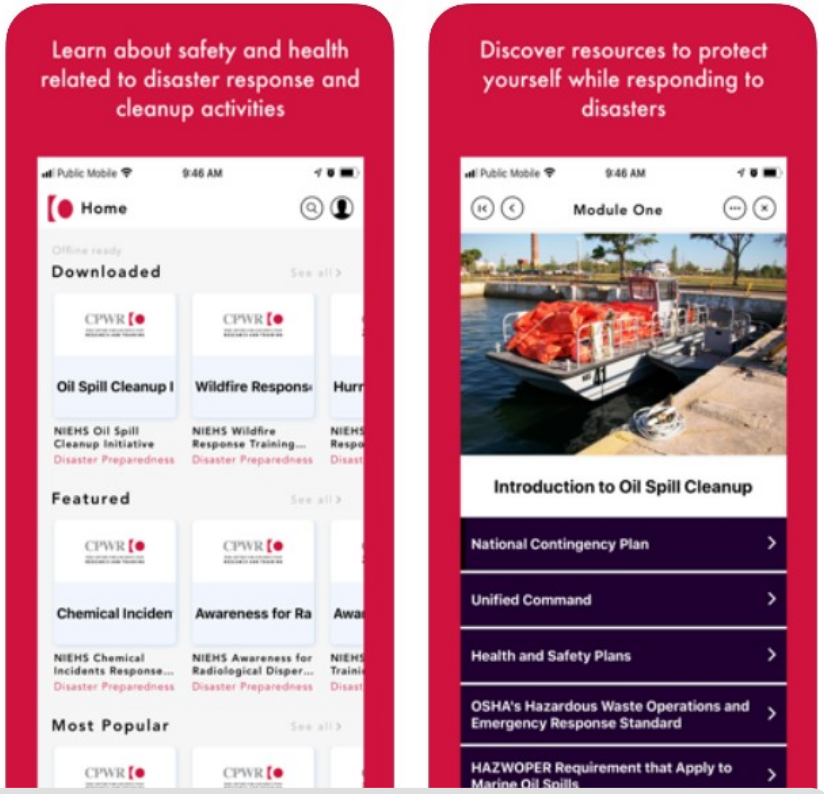
- **Uncertainties** with novel pathogen, with **misinformation** circulating
- **Reliance on PPE** as primary form of prevention (not engineering and administrative controls), yet scarcity of PPE
- **Building capacity of trainers** to pivot from in-person to virtual trainings and work through technology issues
- Safely carrying on/returning to physically distanced, **face-to-face training**
- **Reaching essential & returning workers and vulnerable populations,** especially with limited time to deliver training

COVID-19 Training Mobile App

WTP and CPWR

CPWR
THE CENTER FOR CONSTRUCTION RESEARCH AND TRAINING





COVID-19 training tool (PowerPoint)

COVID-19 training tool (mobile application)

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NIEHS COVID-19 Workplace Checklist

COVID-19 Exposure Control Plan	YES	In Progress	NO	N/A
1. Has the employer deployed a safety and health committee or other forum for frontline workers and other key stakeholders to participate in the development of the COVID-19 exposure control plans?	○	○	○	○
2. Has the employer developed a written COVID-19 Exposure Control Plan?	○	○	○	○
3. Has the employer conducted a Job Hazard/Safety Analysis for each position?	○	○	○	○
4. Has the employer put the most effective method(s) for minimizing exposure to SARS CoV-2 in place?	○	○	○	○
5. Are employees encouraged to speak up, without fear of retaliation, if they have safety and health concerns or if they observe violations of employer policies and procedures?	○	○	○	○
6. Is there a formal process for employees to file complaints and offer suggestions?	○	○	○	○
7. Has the employer provided communications and training on the following:				
a. Self-reporting expectations?	○	○	○	○
b. Safety and health protocols and control measures?	○	○	○	○
c. Information on the virus and how it is transmitted in advance of work?	○	○	○	○

Engineering Controls	YES	In Progress	NO	N/A
1. Has the employer adjusted the heating ventilation and air conditioning (HVAC) system so that it maximizes ventilation (dilution of air)?	○	○	○	○
2. Has the employer maximized the use of technology to minimize face to face interactions?	○	○	○	○
3. Have select doors been bypassed to decrease touching of push bars and handles, consistent with security and fire safety requirements (e.g., automatic doors or separate entrance and exit)?	○	○	○	○
4. Has the employer considered eliminating use of time clocks and other devices that cause a gathering of where it is difficult to	○	○	○	○

WTP COVID-19 Webinar Participation (Mar. 20 – May 15)

Monday Grantee Updates

422 attendees

Grantees share updates about training:

- Progress
- Gaps and challenges
- Outcomes (# trained, populations reached, etc.)

Wednesday Technical Topics

1,102 attendees

Topics to date included:

- Training for frontline
- Evaluation
- Best practices in protecting healthcare workers
- Respirator use in healthcare

Friday Week-in Review

968 attendees

Topics to date included:

- How to move forward
- Updates on vaccine testing
- COVID-19 and mental health
- Updates from National COSH

Note: *This excludes numbers from the Wed. TTT webinar sessions (shown on an earlier slide)*

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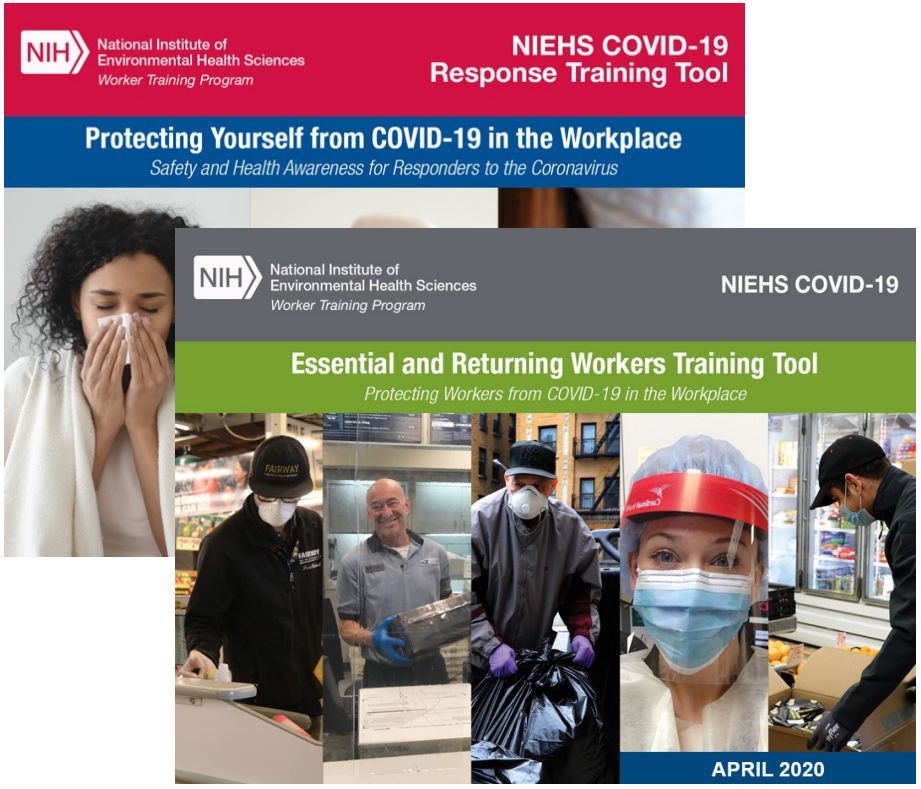
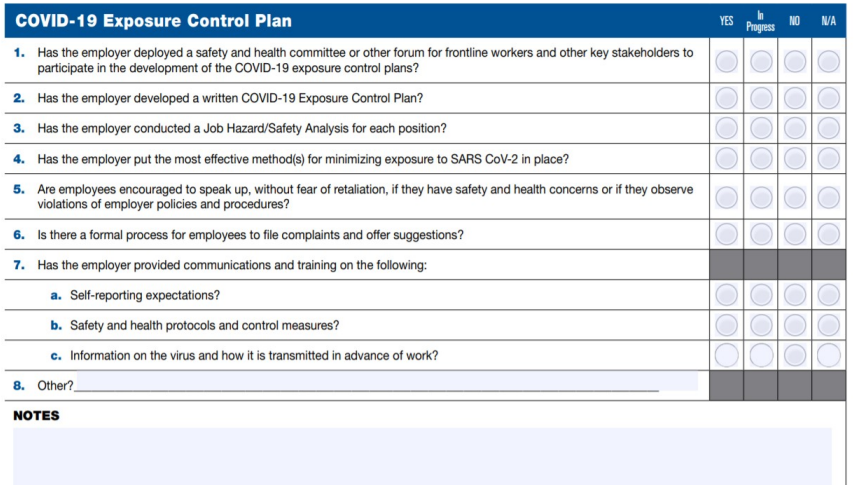
WTP and COVID-19



Available as **PDF, PPT,** and **Booklet** in **English and Spanish**



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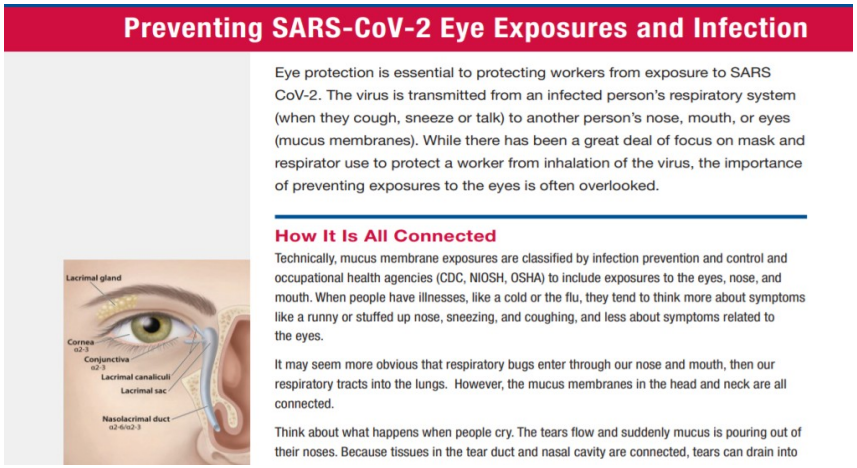
a. Self-reporting expectations?				
b. Safety and health protocols and control measures?				
c. Information on the virus and how it is transmitted in advance of work?				
8. Other?_____				

NOTES

Workplace Checklist for Non-Healthcare Industries



Preventing SARS-CoV-2 Eye Exposures and Infection

Eye protection is essential to protecting workers from exposure to SARS CoV-2. The virus is transmitted from an infected person's respiratory system (when they cough, sneeze or talk) to another person's nose, mouth, or eyes (mucus membranes). While there has been a great deal of focus on mask and respirator use to protect a worker from inhalation of the virus, the importance of preventing exposures to the eyes is often overlooked.

How It Is All Connected

Technically, mucus membrane exposures are classified by infection prevention and control and occupational health agencies (CDC, NIOSH, OSHA) to include exposures to the eyes, nose, and mouth. When people have illnesses, like a cold or the flu, they tend to think more about symptoms like a runny or stuffed up nose, sneezing, and coughing, and less about symptoms related to the eyes.

It may seem more obvious that respiratory bugs enter through our nose and mouth, then our respiratory tracts into the lungs. However, the mucus membranes in the head and neck are all connected.

Think about what happens when people cry. The tears flow and suddenly mucus is pouring out of their noses. Because tissues in the tear duct and nasal cavity are connected, tears can drain into

Prevention of Eye Exposures and Infection

National Institute of Environmental Health Sciences
Worker Training Program

NIEHS COVID-19

Essential Worker Training Tool

Protecting Essential Workers from COVID-19 in the Workplace

APRIL 2020

Supplement funds awarded to NIEHS WTP Grantees Using Coronavirus Congressional Appropriations

$1.8M 14 Supplemental Applications

$3.7M Awarded to 17 Grantees

- 14 supplemental applications funded under NOT-ES-20-017 ($1.8 million total)
  - 13 supplements under Superfund-related activities grants: 8 U45 (Superfund Hazardous Waste) and 6 R43/R44 (SBIR E-Learning)
- 17 awardees funded under the new program year for the U45 Hazardous Waste program ($3.7 million total)
- Third round of funding currently being developed for new partnerships in high-impact COVID-19 underserved communities and gathering lessons learned on the frontlines

Reaching and Preparing Participants: Challenges

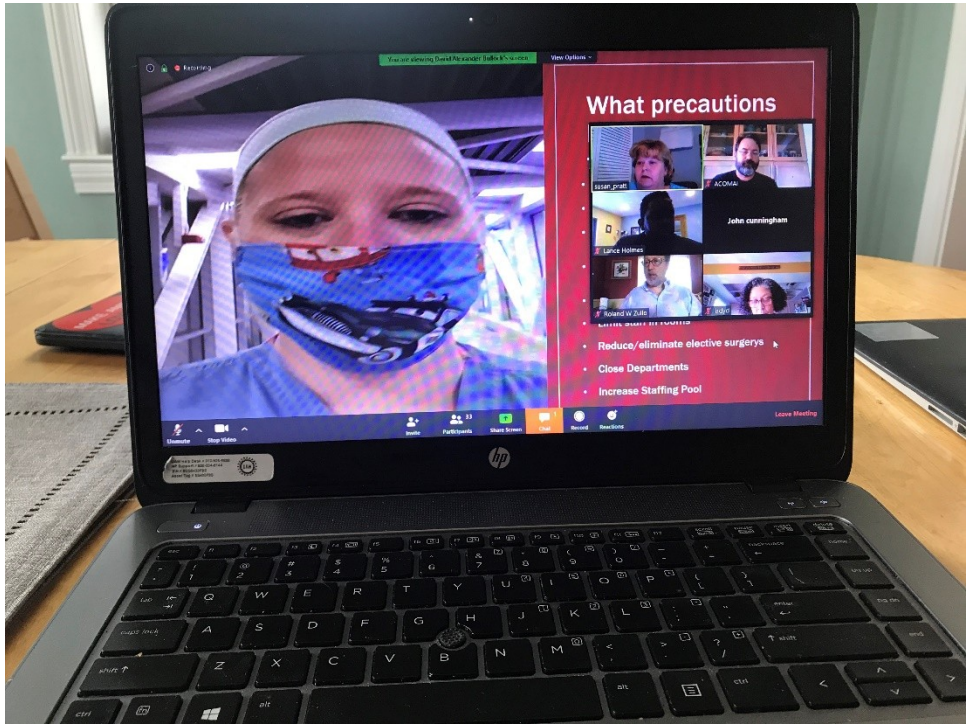
- Populations without access to necessary technology to participate in training (e.g., WiFi, strong bandwidth, cameras, laptops, headphones)
- Populations who are hard to reach due to work schedules or not working at all
- Learning curve to use the virtual platforms is steep for some
- Specific example raised (and ongoing): Native American partners have been hard to reach (due to closure of training sites and colleges and lack of access to WiFi and equipment)

Reaching and Preparing Participants: Lessons Learned/Best Practices

- Use social media tools, (e.g., Facebook Live, WhatsApp, YouTube, etc.) to reach out to populations and share essential information
- Record training videos that can be easily accessible when WiFi is available or that can be sent via USB or mail out paper copies of materials prior to the class
  - But always provide a contact person for questions
- Allow and encourage training attendance from less traditional spaces, e.g. somewhere with free Wi-Fi
- Test your chosen platform/technology on the types of devices your attendees use (e.g., slide formatting, use of video)
- Provide information on technology requirements, classroom rules and expectations, etc. prior to the beginning of the class, and provide time and support for those needing practice

Virtual Learning

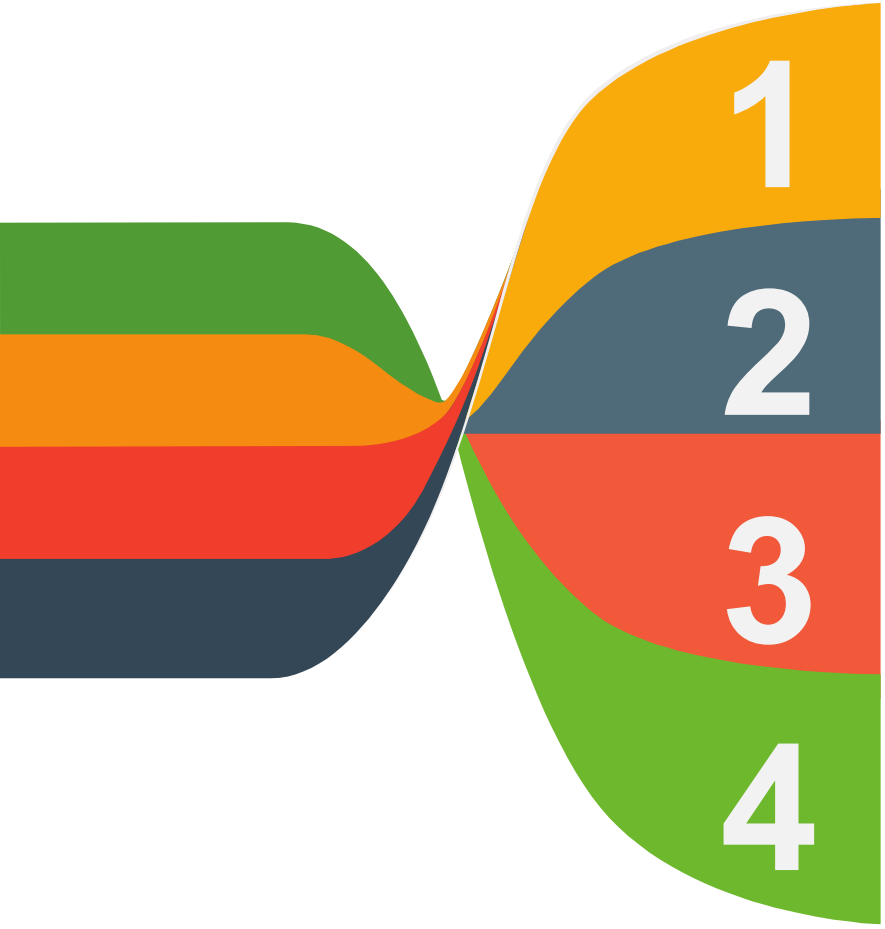
- Challenges
  - Active engagement, longer courses, hands on training
  - Adjustments to evaluation process
- Best practices
  - Spend time on teaching the tech, practicing, and debriefing with trainers
  - Recreate parts of the training process – ice breakers, breaks, clear instructions
  - Have at least 2 facilitators
  - Be creative with engagement strategies



In-Person Training

- Very little at time of needs assessment, but concerns included:
  - Developing and enforcing safety protocols
  - Responsibilities that may fall on trainer/training organization (e.g. temperature checks, decontamination, and positive case follow-up)
  - Availability and use of masks/PPE
- Many grantees have started or are preparing protocols now

Infectious Disease in the Workplace – Let's Get Viral!



INNOVATION AND INTEGRATION

Opportunity to build collaborations among professionals in disaster response, hazardous waste management, infection prevention and control, industrial hygiene, biosafety, medicine occupational health and safety

AWARENESS & KNOWLEDGE

Increase soft and hard skills that encourage all-hazards approach, risk recognition and evidence-based IPC guidance for a broad scope of populations at-risk; minimize semantic heterogeniety

BUILD INTERNATIONAL CAPACITY

IDR program awardees are well-positioned to facilitate build-out of national capacity through partnerships and dissemination of frontline training across 70% of USA

RESEARCH ANDTRAINING SYNERGY

Identifying best practices and strategies across fields can facilitate development of broader risk stratification and infectious disease frameworks for emerging pathogens and minimize 'reinventing the wheel' with each outbreak

Thank you for listening!

Any Questions, comments, suggestions?