NIEHS Worker Training Program (WTP) Infectious Disease Response Training (IDRT) Program Needs Assessment & Gap Analysis: Overview

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Objective

*NIEHS WTP IDRT Program*

- NIEHS WTP IDRT Needs Assessment & Gap Analysis Themes
- Addressing Gaps
- IDRT Preparedness Efforts
- Current Pandemic Therapeutic Updates
NIEHS WTP Role in Infectious Diseases

NIEHS WTP IDRT Program

- **HAZMAT & Biological Safety Training:**
  - Anthrax attacks (2001)
  - Mold remediation from Hurricane Katrina (2005)
  - Avian Influenza H5N1 Pandemic (2007)
  - H1N1 Pandemic (2009)
  - Mold remediation from Hurricane Sandy (2012)
  - Ebola virus disease preparedness (2013/2014)
  - Infectious Disease Response Training (IDRT) Program (2015-2019)

- **Training Standards (TTT & Direct Training)**
  - Bloodborne Pathogens and Respiratory standards
  - Personal Protective Equipment (PPE) standard
  - General Duty Clause
  - Pathogen safety data guidelines
Theme 1

*NIEHS WTP IDRT Needs Assessment & Gap Analysis*

- No current mechanism to integrate public health, medical, occupational health and worker safety activities in a comprehensive and all-encompassing approach

- Lack of synergistic perspectives of key stakeholders for risk-based protective guidance that informs the full spectrum of workers
Theme 1

NIEHS WTP IDRT Needs Assessment & Gap Analysis

- Disconnect between infection control, occupational health, worker safety, and emergency management at the healthcare level
- No platform for workers to provide input on needs
- Guidance issued by federal authorities at times delayed or inconsistent
- Resources on infectious diseases from trusted sources can be conflicting or lacking specificity
- No incentive for labor and management to work collaboratively on policies, protocols and practices in the workplace
- Resiliency training was rarely offered in any training
Theme 2

NIEHS WTP IDRT Needs Assessment & Gap Analysis

- Sustaining a high level of readiness is difficult
- Multi-factorial: complacency, inadequate funding, loss of interest as outbreak resolves
- Pathogen-specific training and emphasis on technical aspects of personal protective equipment (PPE) can limit competency necessary to perform one’s job duties safely
Theme 2
*NIEHS WTP IDRT Needs Assessment & Gap Analysis*

- Timely and consistent guidelines based on worker risk are essential
- Complacency and funding interfere with sustainment of existing programs and development of new programs
- Workers need basic preparedness training to enhance generalized worker safety and health
- No clearly defined and agree-upon core competencies for worker safety and biothreats
- Stigma of the infectious disease du jour
Addressing Gaps

*NIESH WTP IDRT Program*

- Partner with awardees to disseminate infection control and hazard recognition education/training programs for a broad spectrum of workers to empower risk-exposure understanding in the workplace
- Coordinated efforts with federal partners for enhanced shared voice
- Awareness-and-Operations level training tools
- Pathogen safety data training module & guidebook
- Support multi-state consortiums of biosafety professionals
- Support HHS ASPR/NETEC preparedness strategies
- Evaluate the efficacy of preparedness training and capabilities feedback loop integration
## Addressing Gaps
### NIESH WTP IDRT Program

### High Risk Categories, Grouped

<table>
<thead>
<tr>
<th>Population Category</th>
<th>ICWU</th>
<th>SCEO</th>
<th>DUKE</th>
<th>IUB</th>
<th>EMORY</th>
<th>LIUNA</th>
<th>UAB</th>
<th>RUTGERS</th>
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<td>Community Volunteers/Workers</td>
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<td>Waste Handlers</td>
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</table>

**Total high risk categories, grouped**: 12, 13, 13, 7, 9, 8, 6, 10
Current Events

- Occupational Safety and Health Administration (OSHA) Guidance on Preparing Workplaces for COVID-19: Four Risk Zones
- Social Distancing / Avoid Spread & Exposure
- Use Standard, Contact and Airborne Precautions
- Avoid touching mucus membrane surfaces (eyes, nose, face)
- Hand hygiene with alcohol-based solution before/after contact with infectious material/PPE
- Practice proper don, use and doff of PPE
- Assess and triage for respiratory symptoms and risk factors; face-mask, isolation in Airborne Infection Isolation Room (AIIR)
COVID-19 Therapeutic Pipeline, FYI

Current Events

- **Repurposed treatment**
  - Viral entry inhibition
  - Viral replication inhibition

- **Novel approaches** using pharmacokinetic and pharmacodynamic data or meta-analyses from existing trials as part of expedited review by the FDA

- **Small molecule** drug development
  - New-target, new-chemical compounds

- **Biologic therapy** development
  - Antibody screening
  - Vaccines
  - siRNA treatments
COVID-19 Therapeutic Pipeline, FYI

Current Events
COVID-19 Therapeutic Pipeline, FYI

Current Events

- Repurposed Rx: Remdesivir (ssRNA)

<table>
<thead>
<tr>
<th>Sponsor</th>
<th>Phase</th>
<th>No. of patients</th>
<th>Disease setting</th>
<th>Dose duration</th>
<th>Control</th>
<th>Primary endpoint</th>
<th>Location</th>
<th>Start date</th>
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<td>Gilead</td>
<td>Ph III</td>
<td>600</td>
<td>Mild to moderate</td>
<td>5 or 10 days</td>
<td>Standard of care, open-label</td>
<td>Patients discharged by day 14</td>
<td>Multiple</td>
<td>March</td>
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<tr>
<td>Gilead</td>
<td>Ph III</td>
<td>400</td>
<td>Severe</td>
<td>5 or 10 days</td>
<td>No control, open-label</td>
<td>Normalization of fever and oxygen saturation for at least 24 hours</td>
<td>Multiple</td>
<td>March</td>
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<tr>
<td>China-Japan Friendship Hospital</td>
<td>Ph III</td>
<td>308</td>
<td>Mild to moderate</td>
<td>10 days</td>
<td>Placebo</td>
<td>Normalization of fever, respiratory rate, and oxygen saturation, and alleviation of cough for at least 72 hours</td>
<td>Hubei</td>
<td>Feb. 12</td>
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<tr>
<td>China-Japan Friendship Hospital</td>
<td>Ph III</td>
<td>453</td>
<td>Severe</td>
<td>10 days</td>
<td>Placebo</td>
<td>Time to clinical improvement, measured on 6-point scale from discharge to death</td>
<td>Hubei</td>
<td>Feb. 6</td>
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<tr>
<td>NIH</td>
<td>Ph II platform</td>
<td>394</td>
<td>Mild to severe</td>
<td>10 days</td>
<td>Placebo</td>
<td>Disease severity on 7-point scale from death to discharged with no limitation on activity</td>
<td>Nebraska</td>
<td>Feb. 21</td>
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</table>
COVID-19 Therapeutic Pipeline, FYI

NIEHCurrent Events

- Repurposed Rx: Lopinavir/Ritonavir
- AbbVie currently collaborating with health authorities (CDC, WHO and NIH) to see if it can be repurposed as treatment for COVID-19

- Repurposed Rx: Sarilumab
- Sanofi on track to test potential use for COVID-19; early stage
COVID-19 Therapeutic Pipeline, FYI

Current Events

- **Vaccine Trials:**
  - Moderna biotech phase 1 testing of developed mRNA vaccine in collaboration with NIAID. Mechanism of action to develop antibodies against spike protein unique to virus.
  - Johnson & Johnson investigating development of potential vaccine
  - Eli Lilly investigating screening antibody candidate development
  - Pfizer is in early development of antiviral therapy and vaccine
  - Sanofi development of COVID-19 vaccine
  - Novartis development of COVID-19 vaccine
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QUESTIONS?