# 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)
  - COVID-19 (2019-2020)
- **Training Standards (TTT & Direct Training)**
  - Bloodborne Pathogens and Respiratory standards
  - Personal Protective Equipment (PPE) standard
  - General Duty Clause
  - Pathogen safety data guidelines



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# 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



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# Addressing Gaps

*NIESH WTP IDRT Program*

## High Risk Categories, *Grouped*

| Target Population Category by Applicant | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Population Category | ICWU | SCEO | DUKE | IUB | EMORY | LIUNA | UAB | RUTGERS |
| | *Cyphers* | *Frederick* | *Frothingham* | *Gibbs* | *Isakov* | *LeConche* | *McCormack* | *Rosen* |
| Airline/Airport Workers | x | x | x | | | x | | |
| Border Control Workers | | x | x | | | | | |
| Cleaning Professional (excluding airline) | | x | | | | x | | |
| Community Volunteers/Workers | | x | | | x | | | x |
| Construction Workers | | | | | | x | | |
| Correctional Officers | x | | | | | | | |
| Custodial/Environmental Service Workers | x | | x | x | x | x | x | |
| Daycare Workers | x | | | | | | | |
| First Responders | x | x | x | x | x | x | x | x |
| Handling Dead Bodies | | x | | x | | | | |
| Healthcare Facility Workers (clinical) | x | x | x | | x | | x | |
| Healthcare Facility Workers (non-clinical) | | x | x | | x | x | | x |
| Healthcare Laboratory Workers | x | x | x | | x | | x | |
| Healthcare Professionals | x | x | x | | x | | x | x |
| Maintenance Professional | x | x | | | | | | x |
| Nail Salon Workers | | | | | | | | x |
| Public Health Professionals | x | | x | | x | | | x |
| Occupational Health & Safety Activists | x | | | x | x | x | | x |
| Security Workers | | | x | | | | | |
| Teachers/Students | x | | | | | | | |
| Transport Workers | | x | x | x | | | | x |
| Vulnerable Populations | | | x | x | | x | | x |
| Waste Handlers | | x | x | x | | | x | |
| Total high risk categories, grouped | 12 | 13 | 13 | 7 | 9 | 8 | 6 | 10 |

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# IDRT Preparedness Efforts & COVID-19

*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)

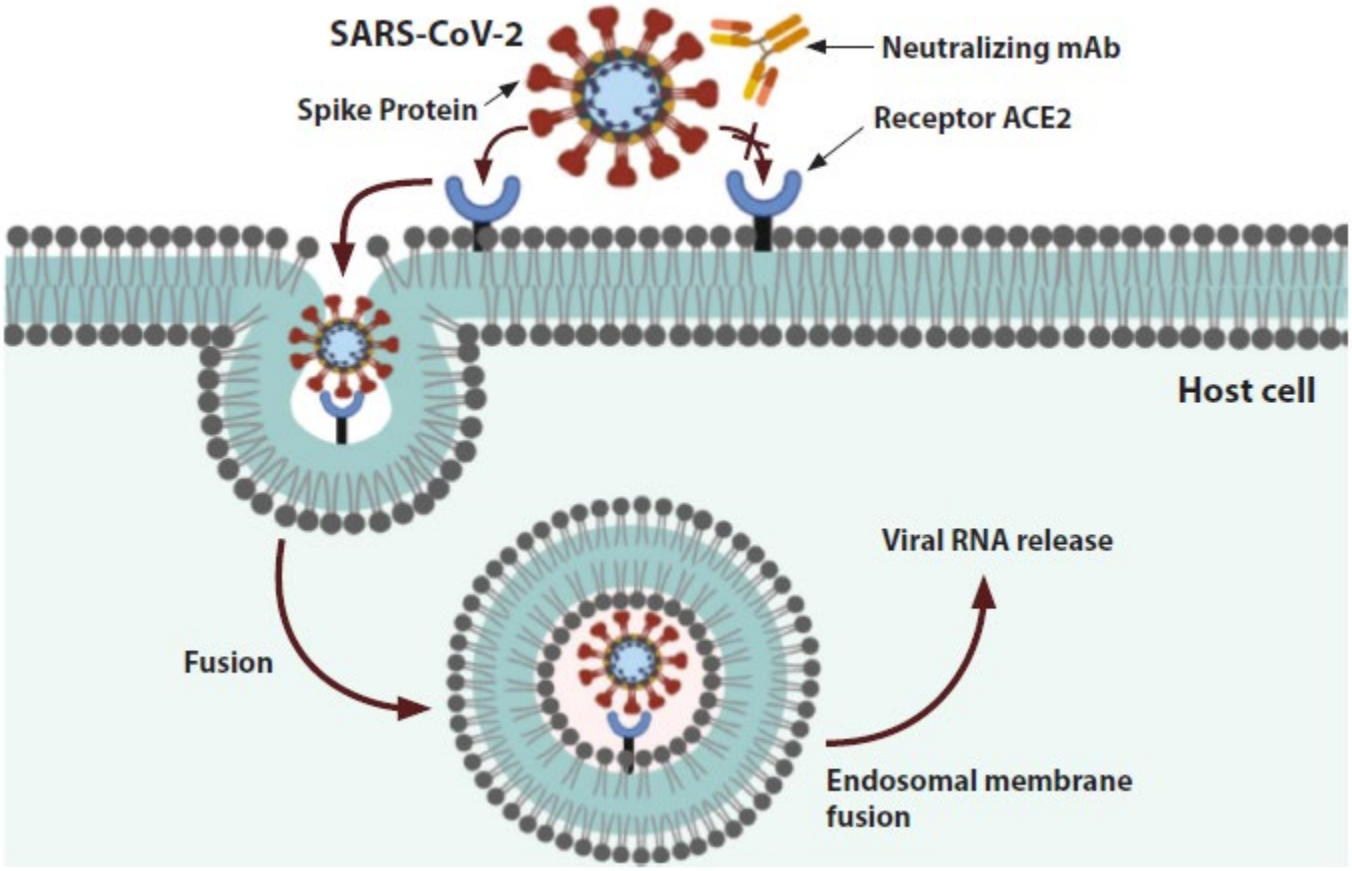
# COVID-19 Therapeutic Pipeline, FYI

*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*



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# COVID-19 Therapeutic Pipeline, FYI

*Current Events*

- Repurposed Rx:  Remdesivir (ssRNA)

TABLE: CLINICAL TRIALS TESTING REMDESIVIR FOR COVID-19

**Remdesivir trials for COVID-19**

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

# 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?

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