

SECURING THE HEALTH OF
THE NATION FROM EMERGING
SPECIAL PATHOGEN EVENTS



Annual Report
FY2022



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A Partnership for Preparedness

The National Emerging Special Pathogens Training and Education Center’s mission is to set the gold standard for special pathogen preparedness and response across health systems in the U.S. with the goals of driving best practices, closing knowledge gaps, and developing innovative resources.

Our vision is a sustainable infrastructure and culture of readiness for managing suspected and confirmed special pathogen incidents across the United States public health and health care delivery systems.



The “New Normal”

of Emerging Special Pathogens Response & Infectious Disease Preparedness



Between July 2021 and June 2022, as the COVID-19 pandemic continued into a third year, more than 15 special pathogens outbreaks in more than 50 countries were reported to the World Health Organization (WHO). Caused by special pathogens like Nipah, Ebola, and Middle East Respiratory Syndrome (MERS), many of the reported outbreaks were contained within the borders of a single nation, or a small contingent of neighboring countries.

However, in May 2022, an outbreak of the Monkeypox Virus (Mpox) would demonstrate, once again, how easily a special pathogen outbreak can take on global proportions and result in global consequences. In the first eight weeks of the global Mpox outbreak, the WHO would confirm nearly 6,000 cases of Mpox infection in 59 countries, including in the United States. As of this writing, the Mpox outbreak continues and has infected more than 85,000 individuals in 110 countries. Of all countries impacted by Mpox, the United States has been the most affected to-date, accounting for more than a third of all confirmed Mpox cases and nearly 30% of fatalities globally.

Thus, the National Emerging Special Pathogens Training & Education Center (NETEC), once again found itself called upon to support health care agencies across the U.S. in managing ongoing, overlapping, and emerging special pathogens incidents. Though NETEC has been steadily evolving and increasing its ability to prepare U.S. health care agencies for just such a reality, the concurrence of COVID-19, Mpox, MERS, Nipah,

and other special pathogen outbreaks is worrying, if not surprising.

Ongoing high-consequence infectious disease outbreaks represent a “new normal” in our global health ecosystem. Health care providers must prepare for special pathogens incidents and must maintain a state of readiness to respond quickly and effectively to the inevitability of their arrival on U.S. shores. The prevalence of emerging special pathogens outbreaks represent an ongoing threat to the health, well-being, economy, and security of the nation.

As the nation’s leading special pathogens preparedness consortium, NETEC remains committed to increasing the depth, breadth, and range of special pathogens education and training programs; responding to emerging special pathogens threats with nimble, novel, and innovative resources; advancing nation-wide special pathogens capacity with the National Special Pathogens System of Care

Health care providers must prepare for special pathogens incidents and must maintain a state of readiness to respond quickly and effectively to the inevitability of their arrival on U.S. shores.

(NSPS); and to leading special pathogens preparedness best practices through advocacy, global networking, and thought leadership.

In training, empowering, and resourcing health care workers and public health officials with the tools and experience they require to build preparedness into the fabric of their day-to-day activities, NETEC is working to safeguard the lives, health, and well-being of millions of Americans every day.

¹www.who.int/emergencies/disease-outbreak-news/item/2022-DON396

²Mpox cases by country data: worldhealthorg.shinyapps.io/mpox_global/#32_Trends_in_cases

³worldhealthorg.shinyapps.io/mpox_global/#32_Trends_in_cases

TABLE 1
Special Pathogens Outbreaks Reported to the WHO from July 1, 2021 – June 31, 2022

Date	Location	Special Pathogen
August 2021	Saudi Arabia	Middle East Respiratory Syndrome (MERS)
August 2021	Saudi Arabia	Middle East Respiratory Syndrome (MERS)
September 2021	Guinea	Marburg Virus Disease
September 2021	India	Nipah Virus Disease
October 2021	Democratic Republic of Congo (DRC)	Ebola Virus Disease (EVD)
February 2022	Nigeria	Lassa Fever
February 2022	United Kingdom (UK)	Lassa Fever
March 2022	Togo	Lassa Fever
April 2022	Saudi Arabia	Middle East Respiratory Syndrome (MERS)
April 2022	Democratic Republic of Congo (DRC)	Ebola Virus Disease (EVD)
May 2022	China	Avian Influenza A(H3N8)
May 2022	Qatar	Middle East Respiratory Syndrome (MERS)
May 2022	Guinea	Lassa Fever Virus
May 2022	Oman	Middle East Respiratory Syndrome (MERS)
June 2022	Iraq	Crimean Congo Hemorrhagic Fever (CCHF)
May 2022	Multiple Countries	Mpox



A PARTNERSHIP TO ADVANCE PREPAREDNESS:

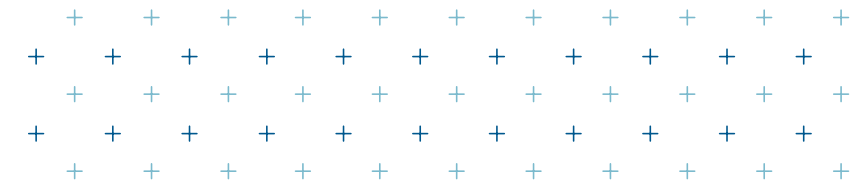
The National Emerging Special Pathogens Training & Education Center (NETEC)

NETEC’s mission is to set the gold standard for special pathogen preparedness and response across health systems in the U.S. with the goals of driving best practices, closing knowledge gaps, and developing innovative resources.

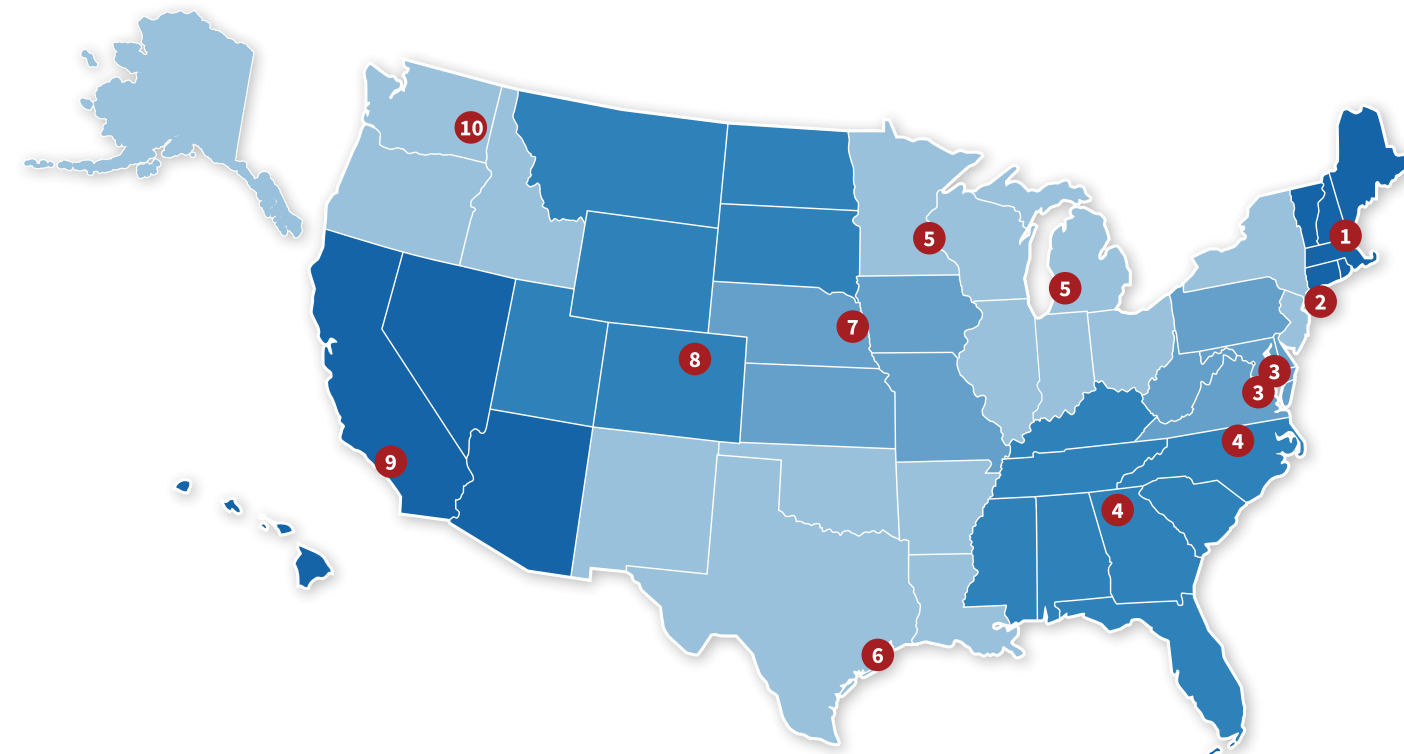
Established in 2015 by the U.S. Department of Health and Human Services (HHS) Administration for Strategic Preparedness and Response (ASPR) and the Centers for Disease Control and Prevention (CDC) following the successful treatment of Ebola patients in 2014, NETEC works to build a sustainable infrastructure and culture of readiness by leveraging the unique expertise of regional partners and federal agencies to assess health care facility readiness, train providers, provide technical assistance, and build a rapid research infrastructure.

NETEC comprises faculty and staff from Emory University, the University of Nebraska Medical Center/Nebraska Medicine, NYC Health + Hospitals/Bellevue, and works closely with the U.S. Regional Emerging Special Pathogen Treatment Centers (RESPTCs) to advance special pathogen readiness. More than 100 industry leaders representing a range of health care specialties, from infectious disease clinicians to emergency medical service leaders and public health officials, share their expertise across NETEC’s 14 national work groups, producing timely and innovative educational resources, providing technical consulting and assistance, convening global partners, and building out a nation-wide special pathogens research infrastructure.

FIGURE 1
Map of Regional Emerging Special Pathogens Treatment Centers (RESPTCs)



- 1** CT, ME, MA, NH, RI, VT
Massachusetts General Hospital
- 2** NJ, NY, PR, VI
NYC Health + Hospitals / Bellevue
- 3** DC, DE, MD, PA, VA, WV
Johns Hopkins Hospital
Washington Hospital Center
- 4** AL, FL, GA, KY, MS, NC, SC, TN
Emory University Hospital
University of North Carolina at Chapel Hill
- 5** IL, IN, MI, MN, OH, WI
University of Minnesota Medical Center
Spectrum Health System
- 6** AR, LA, NM, OK, TX
University of Texas Medical Branch
- 7** IA, KS, MO, NE
Nebraska Medicine /
University of Nebraska Medical Center
- 8** CO, MT, ND, SD, UT, WY
Denver Health & Hospital Authority
- 9** AZ, CA, HI, NV, AS, MP, FM, GU, MH, PW
Cedars Sinai Medical Center
- 10** AK, ID, OR, WA
Providence Sacred Heart Medical Center
& Children’s Hospital



*In October 2022, ASPR selected three additional facilities to serve as RESPTCs. These new facilities were not yet designated as RESPTCs during FY22. Information regarding the new RESPTCs will be featured in next year’s report.



17,680
person training
hours completed



FY ²⁰/₂₂ NETEC *by the* NUMBERS July 1, 2021 – June 31, 2022

Education, Training, and Resource Development

ONLINE LEARNING

4,676 health care workers participated in
55 free, online courses and
7 live special pathogens training webinars
17,680 person training hours

PODCASTS

2,894 listeners downloaded
18 different episodes of NETEC's podcast,
Transmission Interrupted
4,334 times

RESOURCE LIBRARY UTILIZATION

16,180 users from all
50 U.S. States and
78 countries downloaded
2,670 reference guides, frontline checklists,
exercise templates, and more

VIDEO LIBRARY

2,720 subscribers viewed NETEC's
YouTube channel more than
113,800 times, logging
14,645 hours of on-demand training,
skill-building, and e-learning

Readiness Consultation and Assessment

TECHNICAL ASSISTANCE REQUESTS

97 technical assistance requests were
received, and answered from
10 HHS Regions and
4 international sites in two countries

EXPERT SPECIAL PATHOGENS READINESS CONSULTATIONS

76 subject matter experts provided more
than
1,000 hours of readiness consultation and
assessment activities across
13 domains of special pathogens
preparedness, completing
10 combined in-person, virtual, and hybrid
readiness consultations

Coordination, Outreach, and Thought Leadership

NATIONAL SPECIAL PATHOGEN OUTBREAK RESPONSE

10+ national outbreak readiness calls were
held with leaders from all
10 Regional Emerging Special Pathogens
Treatment Centers (RESPTCs) to address
the emergent Mpox outbreak

NETEC SPECIALIZED WORK GROUPS

100+ Experts, clinicians, and public health
representatives participated in
14 National NETEC work groups covering

GLOBAL LEADERSHIP

5 international peers in infectious disease
management and biocontainment, from
4 different countries, participated in the
1st NETEC Global Rounds session, sharing
knowledge and best practices around
special pathogens outbreaks

OUTREACH AND COMMUNICATIONS

57,295 users visited NETEC.org website (21.5% ↑),
resulting in
94,956 unique pageviews (18.3% ↑), and
demonstrating particular interest in timely
resources, like NETEC's Mpox outbreak
pages, which were viewed
25,000+ times

FROM READINESS TO
RESPONSE:

Innovative, Agile Solutions to Emerging Special Pathogens Threats



Activation exercises provide opportunities for training and readiness assessments

From COVID-19 to Mpox and Beyond

On May 18, 2022, the Massachusetts Department of Public Health confirmed a single case of Mpox in an adult male with recent travel to Canada. The announcement of the first U.S. based Mpox case heralded the arrival of yet another global special pathogen outbreak on U.S. soil, even as the national health care system continued to grapple with the ongoing COVID-19 pandemic. Before the U.S. public health emergency declaration for Mpox would end, more than 30,000 Americans would contract the infection, accounting for more than one third of the confirmed Mpox cases around the world.

Within hours of the confirmation of the first U.S. Mpox patient, NETEC mobilized resources and expertise to assist the RESPTCs and local health care delivery systems across the nation in their efforts to safely and effectively manage the growing outbreak. As the national leader in special pathogens education, NETEC leveraged the substantial expertise and shared experiences of special pathogens and infectious disease clinicians among the RESPTCs, within the NETEC workgroups, and among partners across the spectrum of health care provision to create a range of critical Mpox resources for clinicians, from detailed laboratory guidance on specimen collection to waste management protocols, infection prevention and control, pediatric consideration, and Mpox specific Personal Protective Equipment (PPE).

Further, NETEC rose to the challenge of coordinating the national Mpox response, establishing weekly Outbreak Readiness

The SPORSA is a comprehensive, free, online self-assessment designed to help health care agencies evaluate their operational readiness for special pathogen preparedness and response.

SPORSA

SPECIAL PATHOGEN OPERATIONAL
READINESS SELF-ASSESSMENT

- Innovative special pathogens preparedness tool
- Comprehensive, free, online self-assessment
- Spans domains from physical infrastructure to personnel management
- Provides an opportunity for a follow-up consultation

ness Calls between NETEC and RESPTC leadership, providing a forum to solve common challenges, and share best practices. This level of enhanced coordination provided critical information regarding the state of special pathogens readiness to national policymakers, even as Mpox care collided with the emergence of new COVID-19 Omicron variants and other special pathogens threatened the U.S. on top of the existing outbreaks.

Special Pathogen Operational Readiness Self-Assessment (SPORSA)

While the Mpox outbreak underscored the urgency of assessing, understanding, and communicating about the level of national special pathogens preparedness, the outbreak only further reinforced NETEC's commitment to the creation of innovative

tools that would allow this work to be done in an efficient and sophisticated manner. To this end, in FY22, NETEC entered the final stages of creating and launching an innovative special pathogens preparedness tool for hospitals and emergency medical service (EMS) agencies: the Special Pathogen Operational Readiness Self-Assessment (SPORSA). The SPORSA is a comprehensive, free, online self-assessment designed to help health care agencies evaluate their operational readiness for special pathogen preparedness and response.

The assessment framework covers multiple domains, from physical infrastructure to personnel management, providing agencies with a complete picture of the level of special pathogens operational preparedness, and is intended to be completed by operational leaders for an organization's special pathogen program. Following the assessment, health care agencies will have the opportunity to receive additional follow-up consultation from NETEC expertise around areas identified as opportunities for improvement.

In addition to the development of the SPORSAs for hospitals and EMS agencies, NETEC initiated the development of a self-service assessment resource designed for long-term care providers: the Long-Term Care (LTC) Special Pathogens Infection Prevention and Control Workbook. This self-as-



assessment tool is designed to assist long-term care providers in assessing their capacity to safely and effectively manage a high consequence infectious disease outbreak, as many were forced to do during the COVID-19 pandemic, by evaluating their special pathogens operational readiness, response, and recovery. Based upon on the recommendations of NETEC subject matter experts, the workbook includes specially developed tools and guidance for long-term care facilities to plan, prepare, and respond to special pathogen events. This workbook and utilization data will be provided in the next fiscal year.

Readiness Assessment Domains and Capabilities

To facilitate comprehensive readiness assessment, NETEC developed the following domains and capabilities. Domains are organizational categories that special pathogen preparedness programs should consider when preparing for response to special pathogen events. Capabilities are the core components domains are comprised of that focus on critical operational elements for special pathogen preparedness and response.

⁴worldhealthorg.shinyapps.io/mpx_global/#32_Trends_in_cases

Hospital Domains

PHYSICAL INFRASTRUCTURE DOMAIN

- Facility Clinical Care
- Isolation Rooms

ENVIRONMENT AND INFECTION CONTROL DOMAIN

- Critical Operating Systems
- Cleaning and Disinfection

PERSONAL PROTECTIVE EQUIPMENT DOMAIN

- Acquisition and Inventory Management
- PPE Utilization
- Donning and Doffing Space
- VHF: Trained Observer

TRAINING & EXERCISES DOMAIN

- Orientation and Onboarding
- Special Pathogen Response Team Training and Education
- Just-In-Time Training
- Exercises

EMERGENCY MANAGEMENT DOMAIN

- Emergency Management

PRE-HOSPITAL DOMAIN

- Internal Processes
- External processes

INTAKE AND INTERNAL TRANSPORT DOMAIN

- Identify
- Isolate
- Inform
- Internal Transport

TREATMENT AND CARE DOMAIN

- Adult Care
- Labor and Delivery Care
- Neonatal Care
- Pediatric Care

PERSONNEL MANAGEMENT DOMAIN

- Staffing
- Occupational Health

LABORATORY DOMAIN

- Testing and Biosafety
- Specimen Collection, Handling, Storage and Transport

WASTE MANAGEMENT DOMAIN

- Identification and Management of Special Pathogen Waste
- Storage of Special Pathogen Waste
- Transport of Special Pathogen Waste
- Onsite inactivation of Category A Infectious Substance

DECEDENT MANAGEMENT DOMAIN

- Internal Processes
- External Processes

RESEARCH DOMAIN

- Investigational Therapeutics

Emergency Medical Services (EMS) Domains

EDUCATION, TRAINING AND EXERCISES DOMAIN

- Initial Education and Competency Assessment
- Recurrent Education and Competency Assessment
- Agency-Wide Hazard Recognition Education (Identify, Isolate, Inform)
- Just-In-Time Training
- Exercises and Drills

PUI AND CONFIRMED CASE MANAGEMENT DOMAIN

- Identify Capability
- Isolate Capability
- Inform Capability

COMMUNICATIONS AND COORDINATION DOMAIN

- Hospital
- Transport Team
- Patient
- Partner Agencies (public health, emergency management, law enforcement, airport/fixed based operator)
- Media Relations

INFECTION PREVENTION AND CONTROL DOMAIN

- Ambulance
- Durable Equipment
- Personal Protective Equipment
- PPE Donning and Doffing
- Portable Patient Isolation Unit
- Waste Management

HOSPITAL/CLINIC INTERFACE DOMAIN

- Patient Preparation
- Patient Hand-off

TREATMENT AND CARE DOMAIN

- Clinical Care Guidelines
- Charting
- Medical Control/Medical Oversight
- Quality Improvement
- Patient Deterioration/death

PERSONNEL MANAGEMENT DOMAIN

- Team Configuration
- Fitness for Duty
- Occupational Health
- Employee Assistance Program
- Post-mission Medical Surveillance
- Post-mission After-action Review
- Regulatory Compliance

PATIENT MOVEMENT DOMAIN

- Destination guidelines
- Fleet/Vehicle Resources
- Long Distance Ground
- Air Ambulance Interface

EMERGENCY OPERATING PROCEDURES DOMAIN

- Biohazard Spill
- PPE Breach
- Provider Down
- Vehicle Failure

SPECIAL CONSIDERATIONS DOMAIN

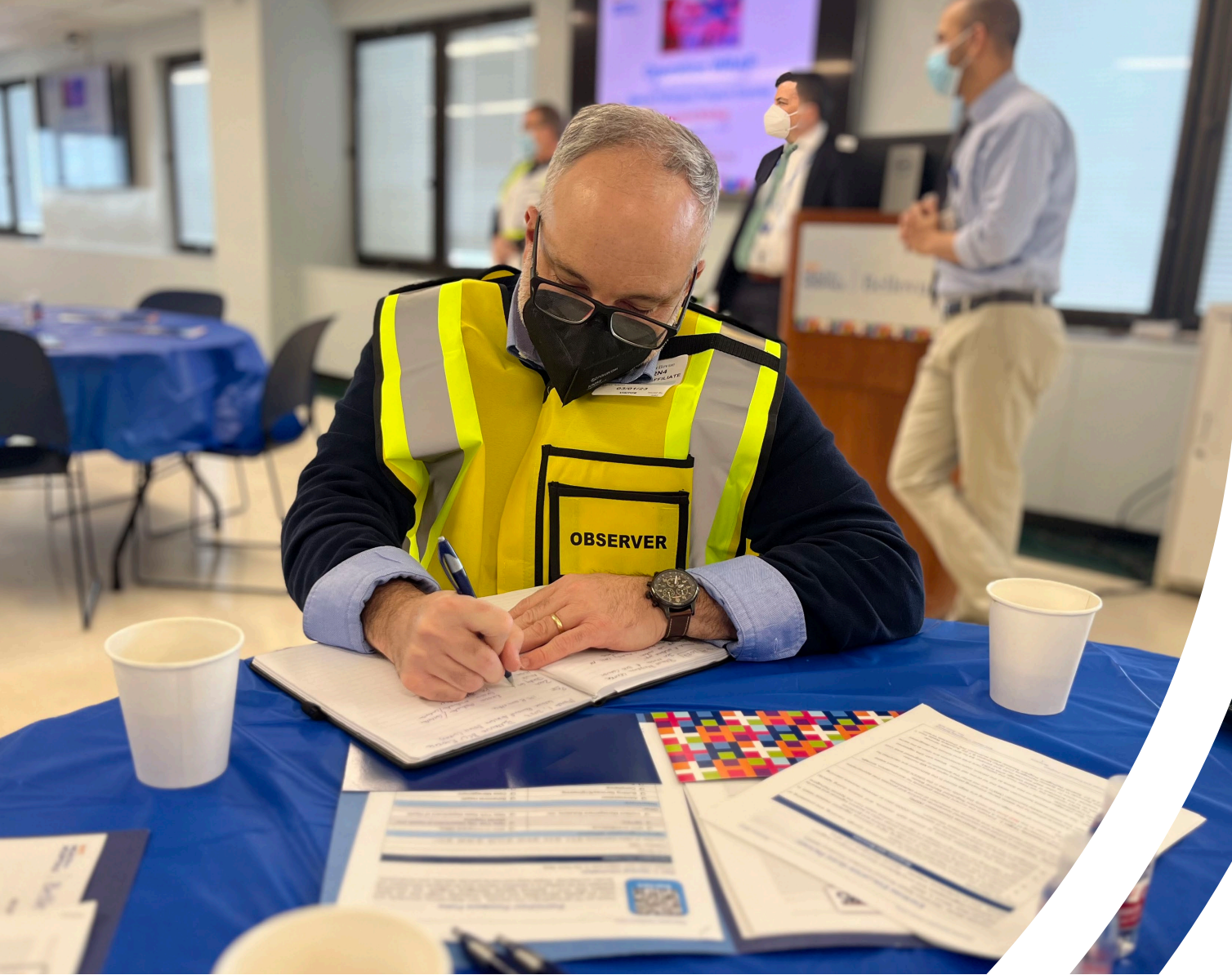
- Pediatric Transport
- Neonate Transport
- Special Needs Patient Transport
- Interstate Transport
- Inclement Weather
- Finance
- Language Barriers

PANDEMIC DOMAIN

- Supply Chain Integrity
- Workforce Integrity
- Crisis Standards of Care
- Modified Operations



In FY22, special pathogens experts from across the country finalized the design of the SPORSA tool and began to pilot it's use among select health care agencies. As of this writing, 10 RESPTCs and 13 EMS agencies have completed a SPORSA, and 24 additional health care agencies have requested a SPORSA. In the coming months, the SPORSA will be fully operational and able to provide a comprehensive assessment of special pathogens readiness to health care and EMS agencies across the nation.



RESPTC Readiness Consultation Findings

Domains of Greatest Preparedness

RESPTCs were noted to be most prepared in the following domains:

PERSONAL PROTECTIVE EQUIPMENT

NETEC's RESPTC Readiness Consultations found that all 10 RESPTCs reported advanced levels of preparedness in the PPE domain, with few to no noted areas for improvement. Among their achievements, all 10 RESPTCs have SOPs in place that guide organizational PPE conservation strategies, processes to utilize replacement items for PPE ensembles if supply chain interruptions are realized, have selection criteria and established donning and doffing protocols for all types of special pathogens (viral hemorrhagic fevers (VHF), orthopox viruses, and novel respiratory pathogens), maintain at least 7-days PPE inventory for each type of pathogen. Additionally, all 10 RESPTCs have a comprehensive respiratory protection program (RPP) in place, and in 9 RESPTCs, RPP include training and education on the proper use of respirators for all staff who are expected to wear respirators at work.



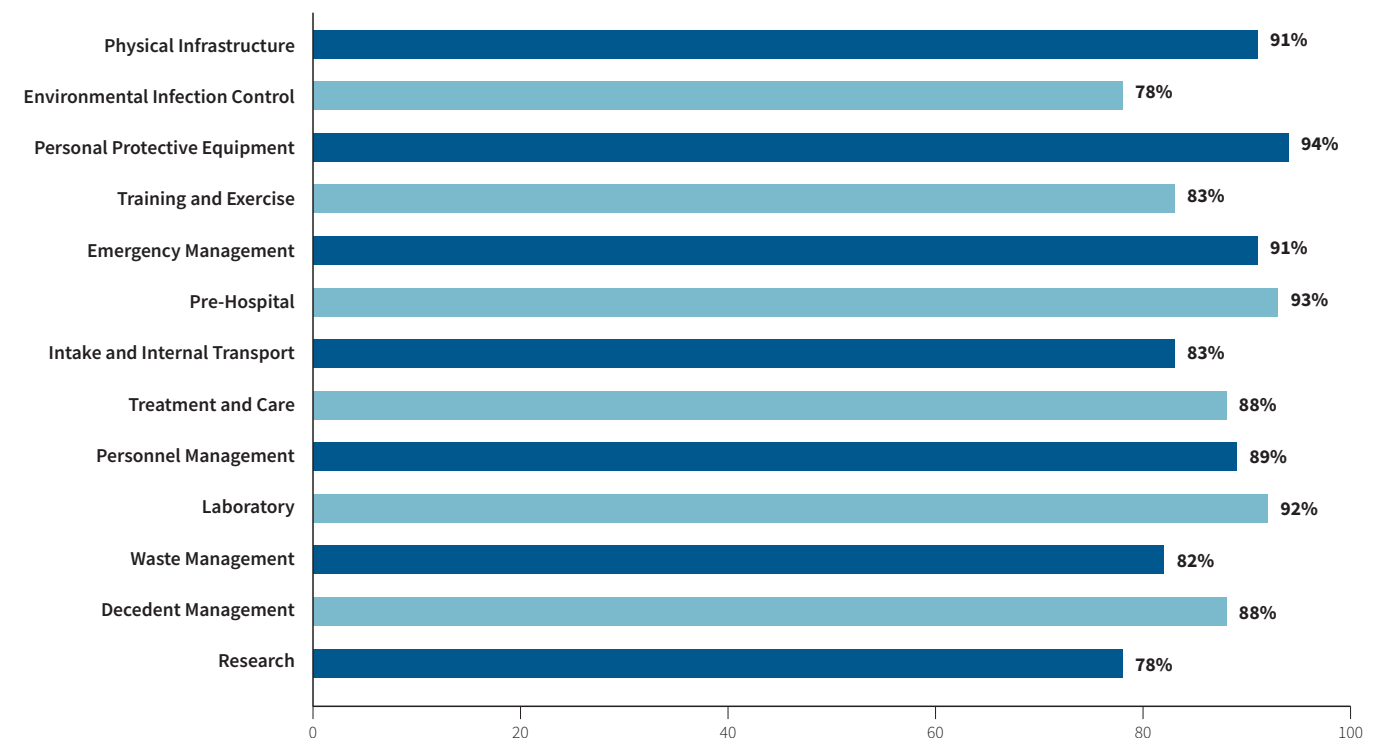
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All 10 RESPTCs have SOPs in place that guide organizational PPE conservation strategies.

CHART 1

Aggregate Operational Readiness For SPORSA Domains



Assessing Annual Readiness

The State of Special Pathogens Preparedness in the U.S.

Each year, NETEC conducts operational readiness consultations with each of the Regional Emerging Special Pathogen Treatment Centers (RESPTCs) across the U.S. In FY22, these consultations utilized the SPORSA tool, providing vital insight into the special pathogens operational maturity of the national system across each of the 13 SPORSA domains.

EMERGENCY MANAGEMENT

In the Emergency Management domain, NETEC found that all 10 RESPTCs have established full or partial/modified Hospital Incident Command System (HICS) that can be activated in response to special pathogen events, having integrated Emergency Management (EM) into the special pathogen response, defining the EM role based on specific HICS activation triggers. Further, all RESPTCs have an established emergency operations plan (EOP), with processes to review and revise the EOP, Incident Response Guide (IRG), or Special Pathogen Annex following exercises or real-world events. Additionally, 90% of RESPTCs utilize the EOP or equivalent document to address event assessment, internal and external notifications, and communication decision trees.

PRE-HOSPITAL

The RESPTC Readiness Consultation found advanced levels of preparedness in the Pre-Hospital domain among all 10 RESPTCs. All RESPTCs have access to the current state and regional transportation plan for patients suspected or confirmed to be infected with a special pathogen as well as access to, or knowledge of, the health care coalition or local health department plans. Similarly, all RESPTCs have trained or exercised special pathogen transport plans with at least one EMS agency in their region, and most have engaged multiple states within their region in transport exercises. Further, all RESPTCs have processes to communicate with EMS on the expectations for preparing the patient for transport using barrier protective devices (e.g., coverall for the patient, containment/barrier wrap, portable isolation device), and trained personnel to receive them upon arrival.

All RESPTCs have trained or exercised special pathogen transport plans with at least one EMS agency in their region.



All RESPTCs have established protocols, supplies, and personnel to collect and ship specimens to a designated LRN laboratory.



LABORATORY

Though challenges remain, NETEC found that RESPTCs across the nation reported advanced special pathogens laboratory capabilities. For patients suspected or confirmed to have VHF or orthopox infection, all RESPTCs have the ability to provide laboratory tests, including: CBC, liver function test, complete metabolic panel, malaria testing, respiratory viral panel, urinalysis/pregnancy screen, PT/INR/PTT, and blood culture testing. Additionally, all RESPTCs have established protocols, supplies, and personnel to collect and ship specimens to a designated Laboratory Response Network (LRN) laboratory for presumptive special pathogen identification and diagnosis, as well as coordinating shipment of specimens to CDC for confirmatory testing. All 10 RESPTCs have a CLIA certified designated special pathogens laboratory and adhere to all indicated regulatory requirements as well as backup plans to accommodate the unanticipated failure of the primary equipment. All RESPTCs completed comprehensive risk assessments for laboratory areas and have developed and implemented mitigation strategies for any gaps identified in the risk assessment. Finally, 90% of RESPTCs have tracking systems that monitor the special pathogen specimen from point of collection to final disposition (including storage and destruction).

Opportunities for Improvement

However, despite these advances, challenges continue to be seen in the following areas:

TRAINING AND EXERCISE

NETEC's RESPTC Readiness Consultations revealed continued challenges in training and educating team members to serve in special pathogen units. While all RESPTCs have structured orientation programs for staff joining special pathogen response teams that address, at a minimum, identification, isolation, treatment, and transport protocols, only 70% include special pathogen education in their orientation for employees in the emergency department or other points of entry. Additionally, only 50% of RESPTCs have established ongoing training programs for physicians, nurses, and infection preventionists working in the emergency department. Six of the 10 RESPTC special pathogen response team training plans include provisions that indicate that all staff are expected to participate in the identification, isolation, and delivery of care for a patient suspected or confirmed to have a special pathogen.

INTAKE AND INTERNAL TRANSPORT

While 90% of RESPTCs have a process to screen for special pathogens prior to entering the facility that entails signs and symptoms of a communicable illness first, and then travel-based screening at the point of entry, and the majority implement the screening for patients, visitors, vendors and staff at all points of entry, there is an opportunity to increase screening of direct admissions to inpatient areas such as L&D, ICUs, and procedural based areas. Further, only 40% of RESPTCs receive results Local dispatch (911, EMS, others) incorporates symptom and travel-based screening for incoming calls.

WASTE MANAGEMENT

While all RESPTCs have established plans to manage Category A Hazardous Substances, 80% of RESPTCs report that they: have implemented on-site inactivation using steam sterilization, have backup plans in place in event of steam sterilization failure, have identified 3rd party vendors to support



transport of Category A Hazardous Substances, and report that their validation and verification processes meet transport vendor and DOT regulations. Additionally, while 90% of RESPTCs report an established process to work with local and state health departments to implement waste management strategies if there is a novel pathogen (Disease X), and a classification has not yet been assigned to the waste generated, only 40% of RESPTCs have their SOPs for onsite sterilization verification reviewed and approved by local and state public health departments for both solid and liquid waste.

There is an opportunity to increase screening of direct admissions to inpatient areas.

Special Pathogens Preparedness Targeted Support Services (TSS)

In October 2021 NETEC implemented a new process to standardize their Targeted Support Services (TSS) program. Through the TSS program, NETEC experts are selected and assigned to respond to technical assistance requests based on the unique needs of the requestor. Requests range from simple to complex, and support may be provided virtually or on-site depending on need.

In FY22, NETEC received 92 TSS requests from 57 facilities in 28 states, representing all 10 HSS regions as well as three international health care agencies. The most common areas of inquiry included pediatrics, policies and procedures, COVID-19, laboratory topics, and equipment and supplies. Of the TSS recipients that responded to a post-service satisfaction survey, 95% reported that they were either extremely satisfied or satisfied with the TSS response provided.

SETTING THE GOLD STANDARD:

Special Pathogens Education, Training, and Resources



Special Pathogens Training and Education

NETEC's innovative training, education, and resources have aided more than 30,000 health care workers in enhancing special pathogens preparedness, individually and within their health care agencies, across the nation and around the world. As the COVID-19 pandemic continued to necessitate digital and online training, NETEC expanded the breadth and depth of virtual educational material to meet the needs of special pathogen preparedness and response for the health care workforce through in-depth online courses, live and recorded webinars, podcasts, skills and micro e-learning videos, and a broad range of on-demand, downloadable resources.

More than 10,200 individual health care workers logged more than 17,760 person training hours by utilizing NETEC's library of free online courses (most of which are available for continuing education credits), training webinars, skill-building videos, and educational and informational podcasts in FY22. NETEC expanded upon, and leveraged, a wide range of digital platforms to increase access to these vital training and education materials, hosting courses on our online Learning Management System (LMS), sharing webinars and videos on NETEC's YouTube channel, disseminating content on NETEC's website and blog, and launching two new informational series: NETEC SitReps, which provide up-to-date information on special pathogens outbreaks from NETEC experts; and Transmission Interrupted, the first podcast series of its kind to feature special pathogens-focused content. Combined, these resources provided accessible self-paced learning opportunities for health care workers on topics ranging from fundamental infection prevention and control practices, to specialized skill development like special pathogens laboratory procedures and PPE utilization.

In addition to these interactive tools, NETEC has further expanded the library of on-demand, downloadable resources available to health care workers through the NETEC Resource Library, providing special pathogens training exercise templates, educational and skill-building videos and animations, and Quick Reference Guides designed to empower

Education and Training

More than **10,200** individual health care workers logged more than **17,760** person training hours.

More than **16,100** users, representing every state in the U.S. and more than **78** nations around the world, downloaded more than **2,700** resources from the NETEC Resource Library in FY22.

NETEC and the RESPTCs experts published **14** articles featuring **79** unique authors and contributors.



health care workers to enhance preparedness in their individual practices and in the facilities in which they work. More than 16,100 users, representing every state in the U.S. and more than 78 nations around the world, downloaded more than 2,700 resources from the NETEC Resource Library in FY22.

Special Pathogens Research Network (SPRN)

In FY22, the Special Pathogens Research Network (SPRN), continued to make progress on its mandate to develop a national infrastructure to facilitate rapid, multi-site clinical research of emerging special pathogens by advancing the creation of both a central special pathogens Institutional Review Board and a special pathogens biorepository, in addition to supporting the publication of a special NETEC supplement in the journal *Health Security*.

THE SPECIAL NETEC SUPPLEMENT OF "HEALTH SECURITY"

Supported and facilitated by the SPRN, the cumulative growth of special pathogens expertise in the U.S., facilitated in large part by NETEC experts and clinicians, found its greatest expression in the tremendous range of expertise featured in the special NETEC supplement of the journal *Health Security*, entitled *Readiness in the United States: From Ebola to COVID-19 and Beyond* and released in June 2022. NETEC and the RESPTCs experts and researchers demonstrated the inextricable link between infectious disease preparedness and health security, publishing 14 articles featuring 79 unique authors and contributors.

NETEC resources provided accessible self-paced learning opportunities for health care workers.



The SPRN Biorepository and associated protocols initiative provides access to biospecimens paired with rich clinical metadata.

“Well prepared hospitals with the capability of handling high-consequence pathogens have never been more important. The work of NETEC in education and training about special pathogens needs to be documented and shared broadly.”

- Dr. Eric Toner,

Guest Editor of Health Security and Senior Associate with the Johns Hopkins Center for Health Security

The articles, which covered topics ranging from preparing for the next unknown special pathogens event to the importance of ameliorating crisis conditions in pandemic-strained health care infrastructure and beyond, leveraged the authors’ experiences serving on the frontlines of the COVID-19 pandemic alongside their expertise in infectious disease management, to address the necessity of special pathogen preparedness on a global scale. Among the most important accomplishments brought about in the special supplement, the issue amplified the importance of the contributions of the U.S. regional emerging special pathogens programs in the COVID-19 response.

“We find ourselves living in an age of epidemics. From HIV to West Nile to SARS to Ebola to COVID to Mpox, dangerous outbreaks of emerging and reemerging pathogens are happening with increasing frequency. Well prepared hospitals with the capability of handling high-consequence pathogens have never been more important. The work of NETEC in education and training about special pathogens needs to be documented and shared broadly.”

- Dr. Eric Toner, Guest Editor of Health Security and Senior Associate with the Johns Hopkins Center for Health Security

The readiness in the United States: From Ebola to COVID-19 and Beyond NETEC special supplement highlights the key role NETEC plays in promoting special pathogens thought leadership around the country.

CENTRAL SIRB

The SPRN Central Institutional Review Board (sIRB) will ensure that clinical trials across partner facilities in key response regions of the country are reviewed efficiently and with the highest ethical and quality standards. Designed to provide a rapid response review process that gives researchers quicker turn-around times during special pathogens events, NETEC identified the need to develop resources that with the capacity to guide potential users in the use of this novel IRB. To that end, in FY22, NETEC created two manuals that offer specific guidance for use of the developing sIRB, instructing interested individuals in how to onboard their sites to partake in the system.

BIOREPOSITORY

The SPRN Biorepository and associated protocols initiative provides access to biospecimens paired with rich clinical metadata collected from patients infected with high-consequence pathogens and health care workers working in the clinical biocontainment environment. They are a resource for SPRN investigators and external collaborators around the globe.



IPP seeks to strengthen collaboration, networking, and knowledge-sharing among international high-level isolation units and other special pathogens programs.

In the special NETEC supplement of “Health Security,” NETEC and the RESPTCs experts and researchers demonstrated the inextricable link between infectious disease preparedness and health security.



International Partnerships And Programs

In FY22, NETEC launched the International Partnerships and Programs (IPP) activity to coordinate, organize, plan, and implement strategic international collaborations to advance U.S. and global special pathogens preparedness. IPP seeks to strengthen collaboration, networking, and knowledge-sharing among international high-level isolation units and other special pathogens programs to advance global capabilities, knowledge, and practices for safe and effective care of individuals with suspected or confirmed special pathogens. In FY22, IPP developed a robust strategy and implementation plan, established a working group with representatives from each of the RESPTCs, provided technical support to a biocontainment unit in Ireland reconfiguring and advancing its capabilities, engaged with 21 biocontainment units from six countries, and launched the bimonthly Global Rounds program. The Global Rounds provide a curated forum to allow for global special pathogens programs to network, share experiences and best practices, discuss challenges, and identify opportunities for collectively advancing special pathogens readiness. Key considerations and practices discussed by RESPTCs and global peers at Global Rounds are later shared on NETEC’s website as blog posts or other resources.



In 2020, to address this threat, and informed by the gaps and inefficiencies in the existing, fragmented national infrastructure for special pathogens, the Administration for Strategic Preparedness and Response (ASPR) tasked NETEC to develop a National Special Pathogen System of Care (NSPS) Strategy. In FY22, NETEC has continued to advance the NSPS strategy, and taken on the role of bringing the NSPS System of Care online.

The Mission and Vision of the NSPS

The mission of the NSPS is to provide a coordinated and standardized health care network of high-quality, patient- and community-centered care for patients suspected of or infected by a special pathogen in the United States, while protecting the health workforce.

Once operationalized, the NSPS will save lives through a sustained, standardized special pathogen system of care that enables health care personnel and administrators to provide agile and high-quality

care across the care delivery continuum. The vision can be illustrated through aspirational success measures, which include:

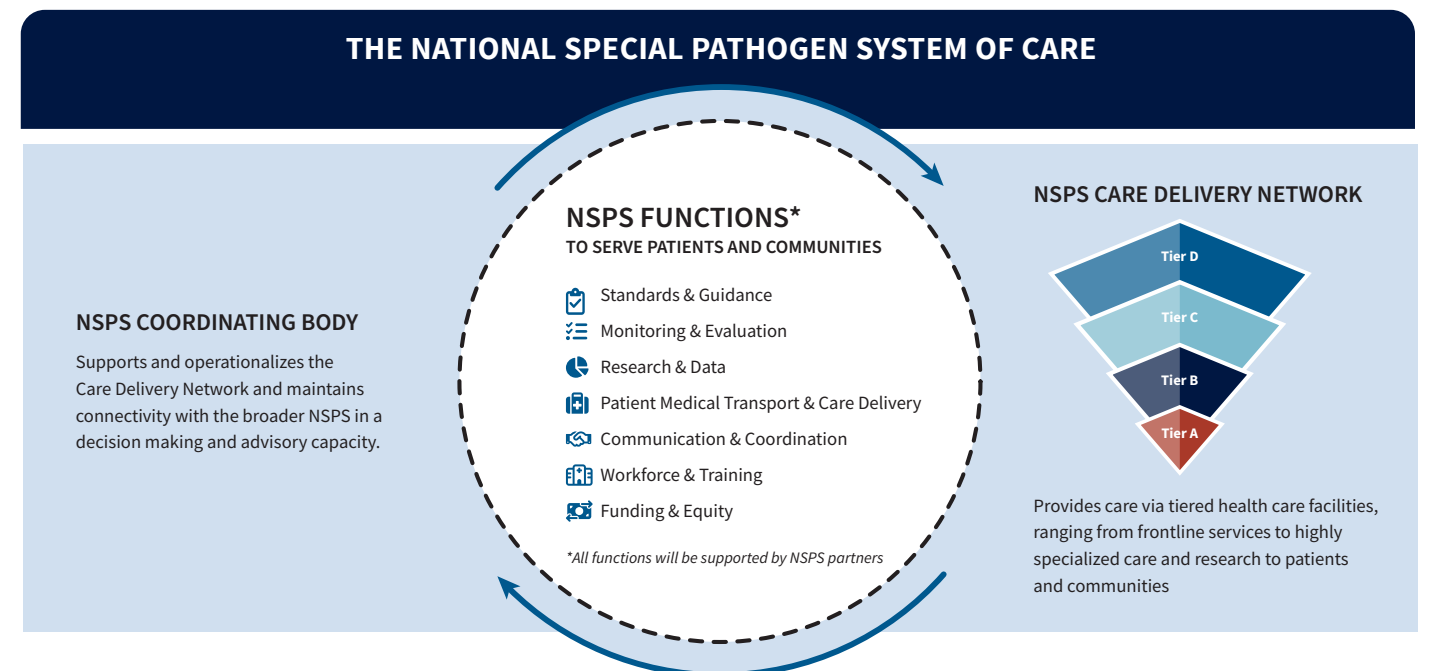
- Zero preventable deaths after special pathogen infection
- A mobilized network within two hours of a suspected special pathogen
- Access to high-quality special pathogen care for 100% of the U.S. population

Structure of the NSPS

The NSPS is the future system of care composed of a Care Delivery Network (built on the existing

NETEC will act as the NSPS Central Body, supporting the Care Delivery Network by providing essential services in the areas of communication and coordination, standards and guidance, training & education, research and knowledge sharing, monitoring and evaluation, and data and technology.

FIGURE 2.
Structure of the NSPS



The NSPS is set up to help coordinate and expand special pathogen care delivery efforts nationwide so that future preparedness and response efforts are more effective, efficient, and ultimately better serves both patients and providers.

Advancing National Preparedness: The National Special Pathogens System of Care (NSPS)

As evidenced by the urgent and ongoing necessity of special pathogens education, training, and response, emerging infectious diseases pose a grave threat to the nation's health, economy, and national security.

delivery system), a central coordinating body, and other strategic partners. NETEC will act as the NSPS Central Body, supporting the Care Delivery Network by providing essential services in the areas of communication and coordination, standards and guidance, training & education, research and knowledge sharing, monitoring and evaluation, and data and technology.

THE NSPS CARE DELIVERY NETWORK

The NSPS Care Delivery Network is the tiered structure organizing care facilities to ensure access to and equity in special pathogen care delivery. The purpose of the Care Delivery Network is aligned directly to the mission of the NSPS – it supports an ongoing focus on patient- and community centered special pathogen care while it protects the health workforce and provides the coordination needed to save lives. The capabilities of the tiers are depicted in Figure 3.

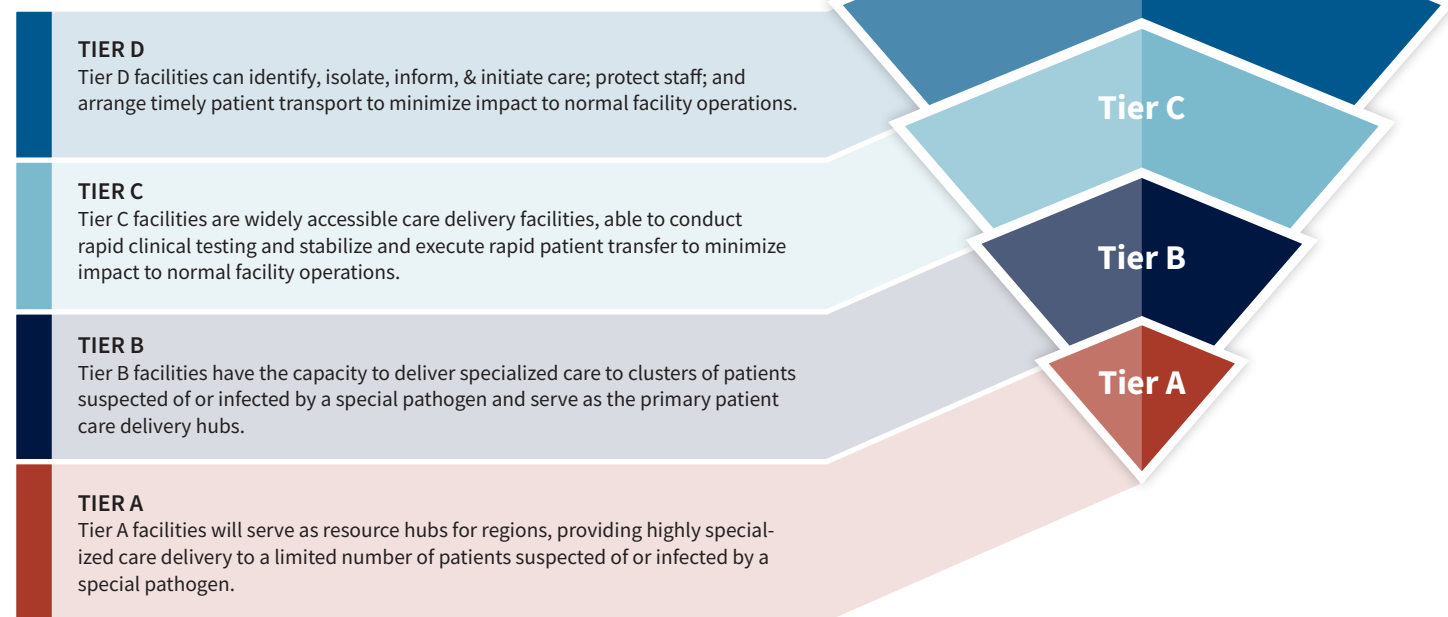
STRATEGIC PARTNERS

In the last two years, NETEC has worked with more than 100 leading experts from organizations ranging from professional societies to EMS providers and frontline nurses to design and implement the NSPS, as shown in Figure 4.

Moving forward, NETEC will continue to engage these strategic partners in addition to:

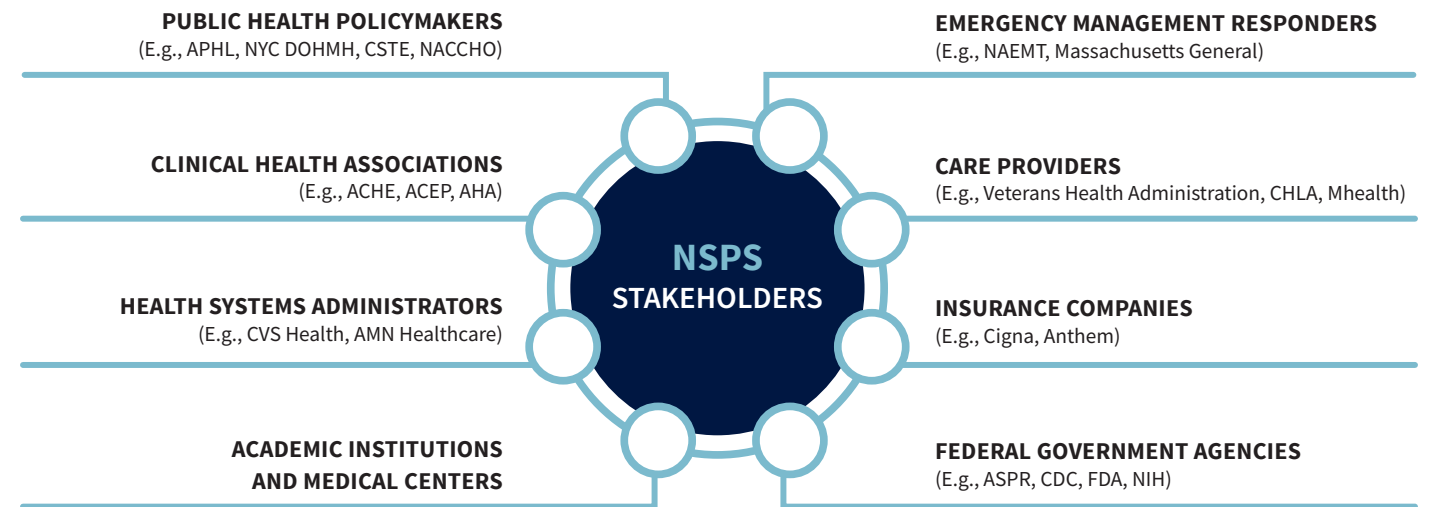
- Government Agency Leaders
- Emergency Responders
- Frontline Providers
- Academic Institutions and Medical Centers
- Public Health Policy Experts
- Professional Health Associations
- Health Systems Executives
- Insurance (Payers)

FIGURE 3
Tiers of the NSPS Care Delivery Network



The current 13 RESPTCs represent Tier A facilities in the CDN. We are in the process of further defining the minimum viable capabilities needed to join the network.

FIGURE 4.
Key NSPS Strategic Partners



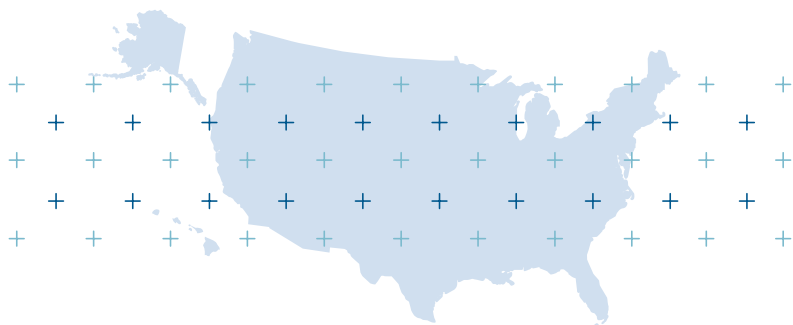
Tier A facilities will serve as resource hubs for regions, providing highly specialized care delivery to a limited number of patients suspected of or infected by a special pathogen.

CONCLUSION:

Sustained Readiness is the Path to Sustained Health Security



The need for a national coordinated, agile and timely effective special pathogens response has never been greater and will only increase as the frequency and severity of infectious disease outbreaks continues around the world.



In the coming years, NETEC plans to leverage the continued investment in national special pathogens preparedness and response to develop and build out the National Special Pathogens System of Care, and to develop the educational, assessment, and research resources necessary to maintain and enhance this vital state of readiness. With global, federal, and regional partnerships, NETEC remains prepared, equipped, and ready to lead the U.S. into a state of sustained preparedness that will protect millions of American lives.

NETEC Faculty and Staff

- | | | | |
|-----------------------------|--------------------|------------------------|----------------------|
| Chimora Amobi | Jennifer Garland | Anthony LoPicollo | Lauren Sauer |
| Kim Angell | Shawn Gibbs | Kari Love | Timothy Scholten |
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| Brian Garibaldi | Corri Levine | Daryl Ruby | |
| | Josephine Lok | Matt Sasser | |



NATIONAL EMERGING SPECIAL PATHOGENS
TRAINING AND EDUCATION CENTER

-  info@netec.org
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