Annual Report FY2017



EMORY MEDICINE

University of Nebraska Medical Center
Nebraska Medicine

NYC HEALTH+ HOSPITALS
Bellevue

Funded by the Assistant Secretary for Preparedness and Response (ASPR) and the Centers for Disease Control and Prevention (CDC)

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OVERVIEW

The National Ebola Training and Education Center (NETEC), funded by the Assistant Secretary for Preparedness and Response (ASPR) and the Centers for Disease Control and Prevention (CDC), was established as a consortium of three healthcare institutions that successfully treated patients with Ebola virus disease: Emory University, the University of Nebraska Medical Center, and NYC Health + Hospitals/Bellevue. NETEC leverages the unique expertise, resources, and experience of the three institutions to assess and assist healthcare facility readiness, educate and train providers, provide real-time technical assistance, and build a research infrastructure in the U.S. Combined with strong existing and new partnerships with federal agencies, NETEC ultimately strengthens our nation's health care and public health systems for the next emerging infectious disease threat.

Mission

To increase the capability of United States public health and health care systems to safely and effectively manage individuals with suspected and confirmed special pathogens.

Assessment

Empower hospitals to gauge their readiness using **Self-Assessment**

Measure facility and healthcare worker readiness using **Metrics**

Provide direct feedback to hospitals via **On-Site Assessment**

Education

Deliver didactic and hands-on simulation training via **In-Person Courses**

Provide self-paced education through **Online Trainings**

Technical Assistance

Provide **Onsite and Remote Guidance**

Compile **Online Repository** of tools and resources

Develop **Exercise Templates** that are customizable and based on the HSEEP model

Provide **Emergency On-Call Mobilization**

Research Network

Build **Central IRB Process** for rapid implementation of clinical research protocols

Develop Policies, Procedures, and Data Capture Tools to facilitate research

Create a **Specimen Biorepository**

Cross-Cutting, Supportive Activities

Develop Partnerships

Build and Expand Expertise and Program Infrastructure

COLLABORATION

NETEC'S VISION

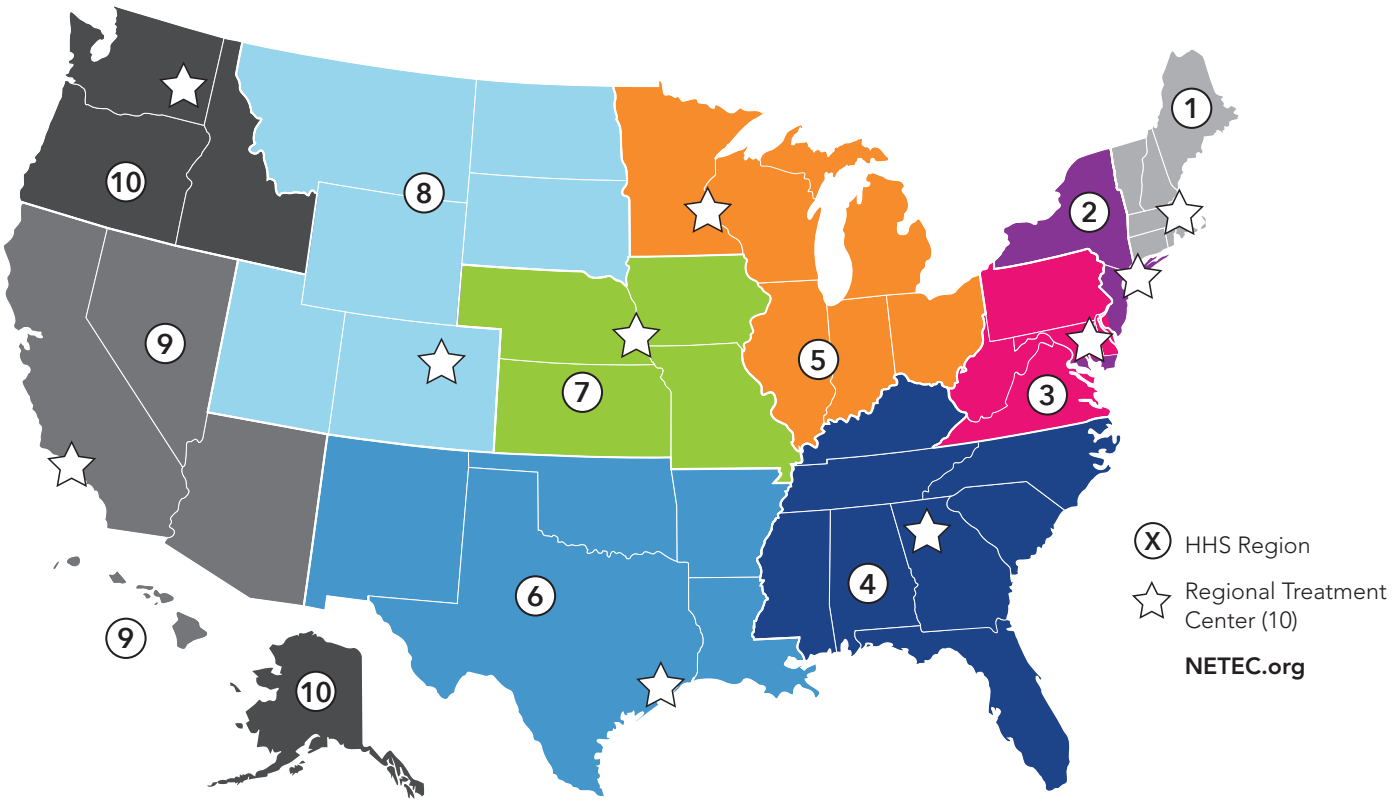
A sustainable infrastructure and culture of readiness for managing suspected and confirmed Ebola and other special pathogen incidents across United States public health and health care delivery systems.

NETEC Comprises Experts from:

- Emory University in Atlanta, GA
- University of Nebraska Medical Center/Nebraska Medicine in Omaha, NE
- NYC Health + Hospitals/Bellevue in New York, NY

Regional Ebola and Special Pathogens Treatment Centers

NETEC partners with 10 Regional Ebola and Other Special Pathogen Treatment Centers (RESPTC) to do on-site readiness assessments, conduct trainings at facilities across the country, and build the Special Pathogens Research Network (SPRN) to support rapid implementation of protocols for investigational interventions for Ebola and other special pathogens.



Regional Treatment Centers

1: Massachusetts General Hospital
2: NYC Health + Hospitals/Bellevue
3: Johns Hopkins Hospital
4: Emory University Hospital and Children's Healthcare of Atlanta – Egleston Hospital
5. University of Minnesota Medical Center
6: University of Texas Medical Branch at Galveston
7: University of Nebraska Medical Center
8: Denver Health Medical Center
9: Cedars-Sinai
10: Providence Sacred Heart Medical Center and Children's Hospital

COLLABORATION (continued)

Federal and External Partners

Expanding National Training Capacity

NETEC expanded the national capacity for infectious disease training by collaborating with both USAMRIID and FEMA CDP. These partnerships allow NETEC to reach a very broad population of health care workers and function as a force multiplier to increase the impact of NETEC on infectious disease preparedness. Combining NETEC expertise in infectious disease and simulation with existing training models at USAMRIID and FEMA CDP expands the national training capacity and impacts the U.S. global health security mission.

- U.S. Department of Homeland Security, Federal Emergency Management Agency Center for Domestic Preparedness (FEMA CDP)
- U.S. Army Medical Research Institute of Infectious Diseases (USAMRIID)
- American Nursing Association (ANA)
- Emergency Nurses Association (ENA)

Integrating Preparedness Programs

Over the first two program years, NETEC has developed very close relationships with the U.S. Department of Health & Human Services and other preparedness programs. NETEC has provided expert review of CDC guidance materials, and novel resources (CDC Personal Protective Equipment smart phone app). NETEC has developed exercise resources aligned with ASPR HPP performance measures to help measure and test infectious disease preparedness of EMS, hospitals and health care coalitions. NETEC coordinated with CDC HAI and PHEP programs to identify health care and public health agencies for targeted on-site or remote technical assistance.

- ASPR Hospital Preparedness Program (HPP)
- Centers for Disease Control and Prevention (CDC) Public Health Emergency Preparedness (PHEP) Program and CDC Healthcare-Associated Infections (HAI) Program
- National Association of State EMS Officials (NASEMSO)

One of the significant achievements of the year was the development of an integrated national clinical research network, which relied heavily upon the collaboration of key federal partners. This network consists of research sites at each of the 10 regional treatment centers, supported by centralized resources including a common rapid response institutional review board (IRB), a data repository, a biorepository, research training protocols, and standardized polices. Through the active participation of the following federal agencies, the Special Pathogens Research Network has been established as a resource that can leverage the expertise of federal agencies, while building a national research infrastructure.

- National Institute of Allergy and Infectious Diseases (NIAID)
- Biomedical Advanced Research and Development Authority (BARDA)
- Food and Drug Administration (FDA)
- US Critical Illness and Injury Trials Group (USCIITG)
- USAMRIID
- CDC





NETEC YEAR 2: BY THE NUMBERS

ACHIEVEMENTS

15 facilities assessed for readiness in 14 U.S. states or territories

40 states, the District of Columbia, and five U.S. territories represented at in-person trainings

24 educational activities held, including didactic and skills training courses, simulation courses, webinars, technical assistance sessions, and conference presentations

3,490 people attended NETEC educational activities – a **9-fold** increase from the previous year.

59% of in-person course participants were RNs. Other participant credentials included MPH, MD, Paramedic, and EMT.

31,687 NETEC.org page views

38 updated **+ 6** new exercise design templates

606 technical assistance requests were answered by NETEC on topics such as staffing, PPE, patient transport, and environmental hygiene.

138 people attended the 2017 NETEC Regional Ebola Treatment Center Summit, representing all 10 RESPTCs as well as federal partners from CDC and ASPR.

NEW ACCOMPLISHMENTS

Special Pathogens Research Network established including:

All **10** RESPTCs

8 SPRN working groups

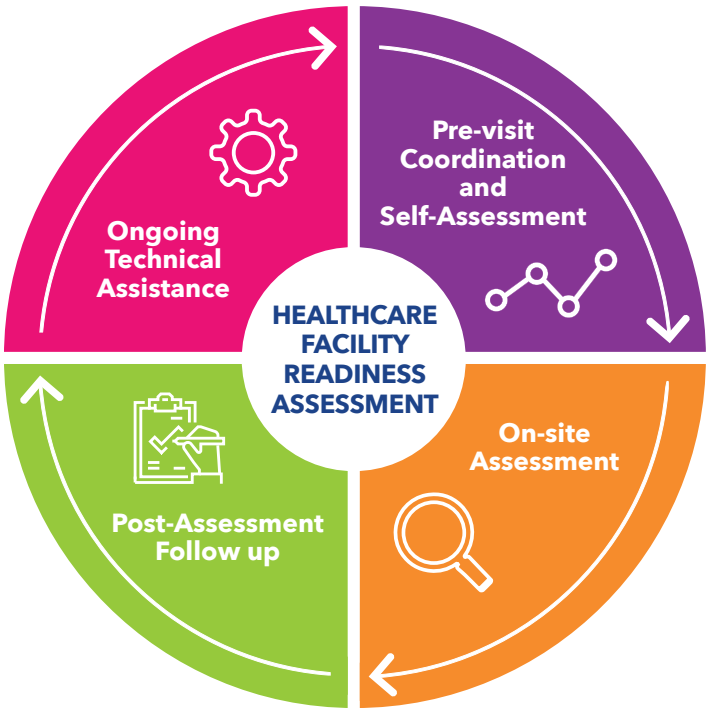
1ST use of the University of Nebraska Medical Center Central IRB reliance agreements to perform a ZMapp™ trial for the treatment of patients with Ebola virus infection

24 | 7 | 365 phone line established for emergency consultation with federal partners and healthcare facilities requiring assistance with patients suspected of or proven to have infections with special pathogens

REGIONAL PREPAREDNESS

NETEC evaluated the readiness of **49 adult-** and **31 pediatric**-capable biocontainment unit **beds**.

In Year 2, NETEC assessed 15 healthcare facilities (10 Regional Ebola and other Special Pathogen Treatment Centers, two state designated Ebola Treatment Centers, two Assessment Hospitals, and one Frontline Facility) in 14 U.S. states and territories. NETEC's healthcare facility readiness assessment process starts with facility self-assess, followed by a site visit to validate self-assessment findings and provide in-depth feedback. Post visit follow-up allows for targeted technical assistance for continuous improvement (figure below).



NETEC Readiness Assessment Tools

Healthcare Facility Self-Assessment Healthcare facilities assess their readiness with 132 metrics in nine domains, as well as the facilities' physical infrastructure and training programs.

On-Site Readiness Assessment
NETEC teams perform the on-site readiness assessment to indicate operational readiness across nine domains of facility infrastructure and performance. These domains include:

Domain 1 **Emergency Management**
Emergency Management

Domain 2 **Pre-Hospital**
EMS Planning and Coordination

Domain 3 **Intake and Internal Transport**
Identify
Isolate
Inform
Internal Transport

Domain 4 **Treatment and Care**
Adult Care
Surgical, Pediatric, Labor & Delivery Care
Patient & Family Wellbeing
Other Special Populations Care
Patient Discharge

Domain 5 **Healthcare Worker Management**
Staffing
Staff Engagement
Medical Surveillance
Staff & Family Wellbeing

Domain 6 **Laboratory**
Testing
Specimen Handling, Storage & Transport

Domain 7 **Waste Management**
Waste Management

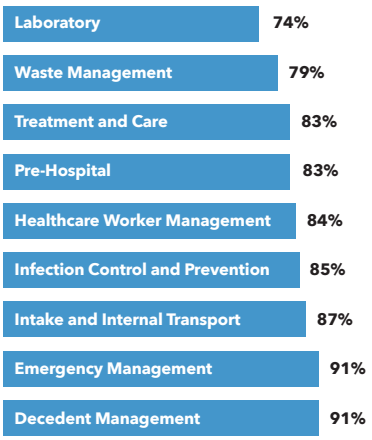
Domain 8 **Decedent Management**
Decedent Management

Domain 9 **Infection Control and Prevention**
Environmental Infection Control
PPE Capabilities

REGIONAL EBOLA AND OTHER SPECIAL PATHOGEN TREATMENT CENTER READINESS

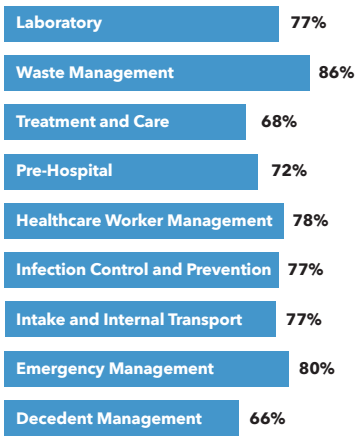
Healthcare Facility Self-Assessment

Percentage of self-assessment metrics fulfilled



On-site Readiness Assessment

Percentage of operational maturity



Leading Practices

- Integration of all-hazards emergency management structures for infectious disease events
- Automated healthcare worker monitoring for real-time information sharing with Public Health
- Using biocontainment space to advance infection control and prevention practices through applied research
- Objective competency based training and re-training programs
- Strengthening health care coalition collaborations through sustained and in-depth interactions
- Exercising multi-disciplinary teams to safely provide advanced care, including: surgery, critical care interventions, labor and delivery

In addition to the Healthcare Facility Readiness Assessment and the On-Site Readiness Assessment findings in the above charts, the healthcare facility readiness assessment process identified specific strengths and areas of growth within the nine domains.

Areas that represent strengths in both self- and on-site assessment:

- Emergency Management: Use of Hospital Incident Command System to support RESPTC care
- Treatment and Care: Infrastructure and equipment for adult isolation treatment and care; composition and mobilization of adult patient care teams

Areas that represent top priorities for growth in both assessment tools are:

- Laboratory: Specimen handling, storage and transport; national obstacles to transporting clinical specimens for testing at the CDC or reference laboratories
- Treatment and Care: Limitations in surgical, pediatric, labor & delivery isolation care capabilities; behavioral health support for isolation patients; defining strategies for patient discharge
- Prehospital: Opportunities for enhanced planning and coordination with EMS and public safety partners; limited regional coordination for air/ground transport
- Decedent management: opportunities to improve practices to safely process infectious remains; improve coordination with state/local agencies, crematories, medical examiner's offices

In addition, the healthcare facility self-assessment recognized the following areas for growth:

- Waste management: limited capability for waste storage and onsite sterilization
- Healthcare worker management: opportunities to utilize key roles and functions such as risk manager, infection control and prevention team, biosafety manager, occupational health, and laboratory services; medical surveillance programs

The on-site readiness assessment pointed to the following areas of growth:

- Intake and internal transport: gaps in systematic screening for infectious diseases across the healthcare spectrum, including the need for expanded signage and strategies for self-identification at multiple points of entry
- Infection control and prevention: potential for improvement of processes related to personal protective equipment, including refining donning and doffing protocols

Response to the Key Findings

Informed by the key gaps identified through the healthcare facility readiness assessment process, NETEC developed mitigation strategies to provide targeted training, technical assistance, and resources in Year 3. NETEC is also working with the federal partners to address issues of national concern.

YEAR 2 EDUCATIONAL ACTIVITIES

NETEC reached 3,490 health professionals via 24 educational opportunities.

"Infectious disease care for pathogens like Ebola requires advanced training and planning to insure highly proficient staff. NETEC provides education and infection control training for a broad range of U.S. health care providers to improve national readiness for the next outbreak." – Dr. Laura Evans

NETEC's In-Person Emerging Infectious Disease Preparedness Trainings

NETEC led eight in-person courses in Year 2, providing 718 participants from across the country with information, resources, networking opportunities, and hands-on practice.

Didactic and Skills Training Courses (656 Participants)

Six didactic and skills training courses, including courses held in Alaska and Guam, taught participants aspects of maintaining facility readiness to assess and treat patients with Ebola or other special pathogens. Among the topics covered were pathogens of concern, personal protective equipment (PPE), handling of persons under investigation, laboratory, clinical skills, leadership strategies, and emergency management.



"I took something valuable away from every session I attended and intend to implement changes at our assessment hospital as a result. What an empowering and valuable event!"

Course participant

YEAR 2 EDUCATIONAL ACTIVITIES (continued)

Simulation Courses (62 participants)

NETEC led eight in-person courses in Year 2, providing 718 participants from across the country with information, resources, networking opportunities, and hands-on practice.

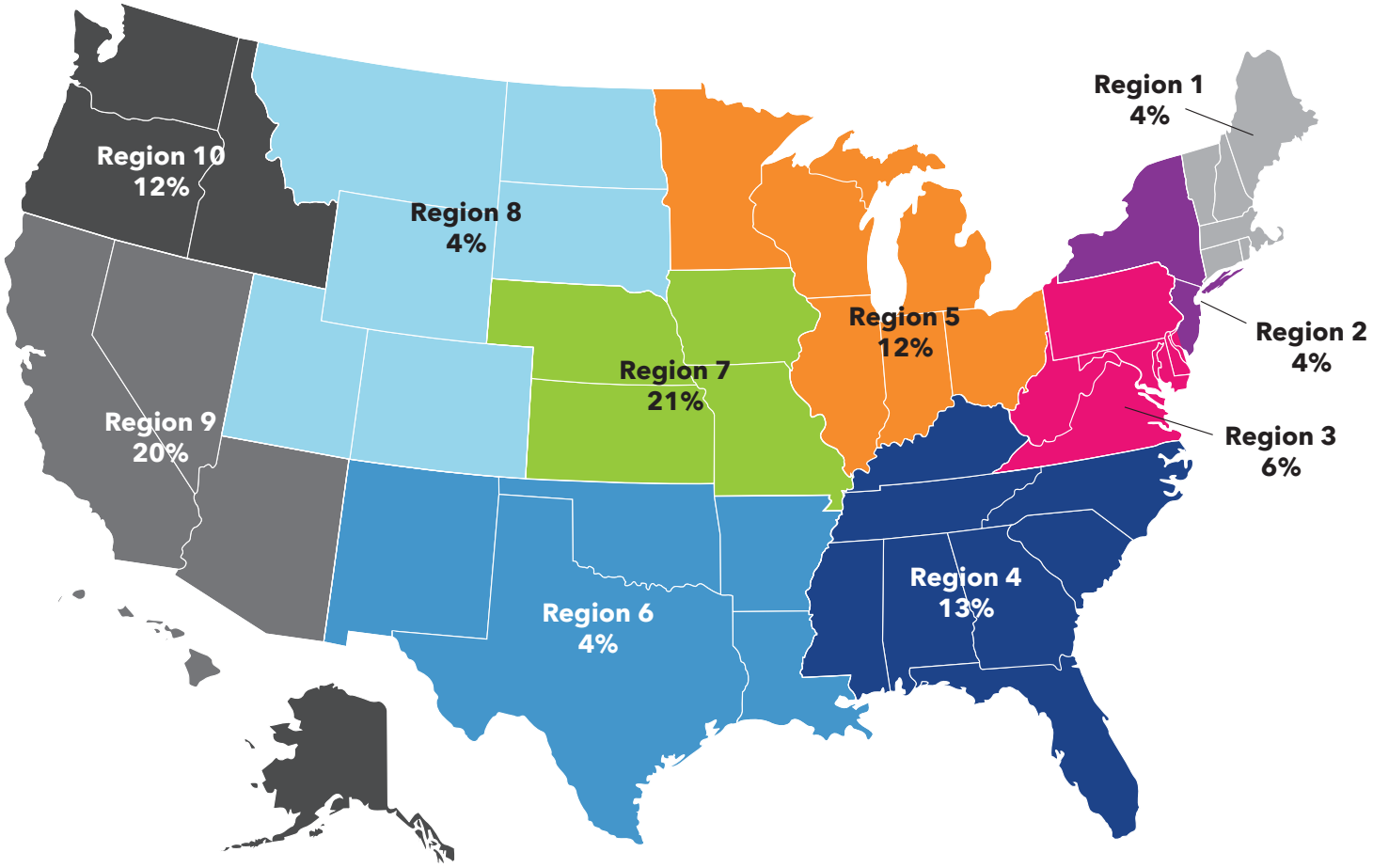
Two simulation courses gave participants hands-on practice of skills essential to safely care for patients with Ebola or other special pathogens. Among the scenarios and skills practiced were patient transfer, care of a deteriorating patient, IV insertion, spill cleanup, ventilation, catheter insertion, and nasopharyngeal swabbing, with all participants wearing full PPE for up to 3-4 hours at a time.





IN-PERSON TRAINING PARTICIPANTS BY HHS REGIONS

(n=718)



Participants came from all 10 HHS regions. About three-quarters of participants are from healthcare facilities.

Healthcare Facilities 72%				Government Agencies 20%	
Assessment Hospital 24%	Frontline Hospital 19%	Regional Ebola Treatment Center 13%	Unspecified Healthcare Facility 9%	State or Local Public Health Department 14%	Federal Gov't 6%
		State Ebola Treatment Center 5%		Other Facilities, 8% (e.g. EMS, research institutions)	

IN-PERSON TRAINING OUTCOMES

Participants felt NETEC courses enhanced their knowledge and confidence.

"I took something valuable away from every session I attended and intend to implement changes at our assessment hospital as a result. What an empowering and valuable event!"

RN, Didactic and Skills Training Course

"[Biggest take-away was] feeling more confident in my skills and abilities."

RN, Simulation Course

Participants intend to use what they learned at their home facilities.

"We need to do more exercises and competencies and I have the tools now to make it easier to put into practice."

Infection Preventionist, Didactic and Skills Training Course

"I identified numerous areas to improve upon, not only equipment and supplies but the weaknesses of our current plans were identified. Training at my hospital will need to be revised so I may include what I learned during this class."

RN, Simulation Course

Participants praised NETEC courses for creating effective learning environments.

"The knowledge and experience of the presenters and their dedication to sharing their lessons learned to help all of us address the issues of emerging infectious diseases made this training very powerful."

Department of Health staff, Didactic and Skills Training Course

"Appreciated being able to network and learn from other centers' experiences."

RN, Didactic and Skills Training Course

Other Educational Offerings

In addition to in-person trainings, NETEC offered:

- **Webinars.** ASPR TRACIE hosted four NETEC webinars on topics including exercise design, concept of operations, and PPE.
- **Presentations at professional conferences.** NETEC faculty delivered 11 presentations at conferences, reaching an additional 1,409 people. These conferences were hosted by national and state-level professional organizations, such as the American Nurses Association, Society for Healthcare Epidemiology of America, Tennessee Hospital Association, and Southwest Texas Regional Advisory Council. Topics covered included facility preparedness, infection control, and patient care.
- **Online courses.** NETEC launched its first online course this year, Behavioral Health Considerations for Patients and Healthcare Workers.
- **Targeted in person technical assistance.** NETEC faculty delivered on-site technical assistance for care of the deceased to 45 professionals.

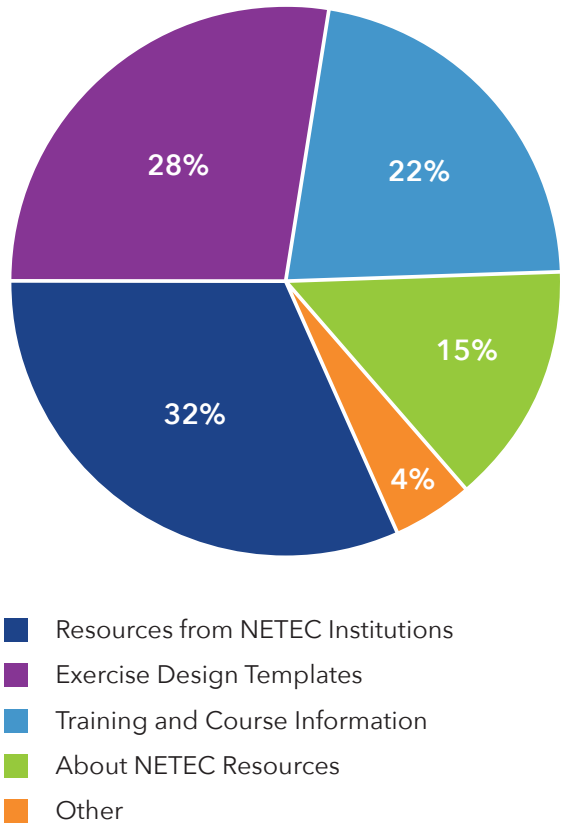
TECHNICAL ASSISTANCE, EXERCISE RESOURCES, AND TOOLS NETEC.ORG

In Year 2, NETEC built upon the successful 2015 launch of NETEC.org to expand a repository of resources for healthcare and public health stakeholders.

The website drew 10,685 visits, with 31,687 total page views. Users accessed and downloaded different resource files from the Online Repository 5,886 times, 4,899 of which were unique resource downloads. Users most frequently downloaded resources from the three NETEC Institutions (e.g. guidance documents on selecting personal protective equipment, training staff on donning and doffing, team development, MERS-CoV screening, and Ebola Virus Disease Incident Response Guides) and Exercise Design Templates.

Resources from NETEC Institutions and Exercise Design Templates represent the majority of resources downloaded from NETEC.org

Online resources in all categories will expand significantly in Year 3.



NETEC Exercise Toolkit

Maintaining readiness for Ebola and other special pathogens requires ongoing discussion—and operations-based drills and exercises. In the past year, NETEC refined and updated all 38 of its existing exercise resource-related documents and developed a suite of six new discussion-based airborne/special pathogen exercise templates. These ASPR/CDC-approved exercise templates are customizable to meet each of the six end user's requirements and map to HPP Guidance measures.

SIX END-USER REQUIREMENTS

- Frontline Facilities
- Assessment Hospitals
- State-Designated Ebola Treatment Centers
- Healthcare Coalitions
- Regional Ebola & Other Special Pathogens Treatment Centers
- Regional Transport Plan & Other Regional Partners

The plug-and-play templates contain exercise materials based on the Homeland Security Exercise Evaluation Program (HSEEP) model and include Situation Manuals/Exercise Plans, After Action Reports/Improvement Plans, and Exercise Schedules. The templates for Assessment Hospitals, Healthcare Coalitions, and Frontline Facilities were the most downloaded, accounting for 36% of all Exercise Template downloads.

Exercise Template Webinar Series

NETEC partnered with ASPR TRACIE to further disseminate its exercise resources and provide a closer, guided look into each of the six end-user's exercise templates via ongoing national webinars that share best practices, lessons learned and pearls and pitfalls. Hosted by NETEC's exercise design and development SMEs and other clinical and operational SMEs who've used the NETEC templates, the events have included 3 webinars on Highly Pathogenic Infectious Disease Exercise Planning Tools; Frontline Facilities; and Regional Transport Planning, attracting over 1, 418 live participants and over 604 recorded viewings.

On-Call Phone Line

NETEC established a 24/7/365 on-call phone line to provide ASPR, CDC, and healthcare facilities telephonic consultation with NETEC leadership and Subject Matter Experts during special pathogens incidents.

TECHNICAL ASSISTANCE, EXERCISE RESOURCES, AND TOOLS
(continued)

Enhancing Response to Inquiries

In Year 2, NETEC implemented a Customer Relationship Management system to serve as NETEC's Customer Service Portal, a central system for accepting and responding to inquiries from facilities and stakeholders. Since launching the system in late 2016, NETEC has provided technical assistance on 606 inquiries initiated through this portal.

NETEC staff catalog the subject matter expertise provided in the responses to build frequently asked questions and develop new resources for the Online Repository. This system is a key part of NETEC's ongoing efforts to identify and meet emerging technical, training, and resource needs.

On-site and Virtual Technical Assistance

NETEC's Exercise Resource Team continues to provide technical assistance on-site and virtually to local, state and national partners in designing, developing, conducting, evaluating and observing exercises. Via a series of virtual technical assistance calls, NETEC exercise experts aided the Alaska-based team in the use of NETEC exercise templates in the months leading to its "Frozen Contagion" full-scale exercise. During the exercise, NETEC sent two teams of clinical and emergency management practitioners to Alaska and Spokane, Washington to evaluate performance and offer experience-based suggestions. This unique combination of virtual and on-site technical assistance by NETEC faculty, who have led the planning for and response to suspected and confirmed Ebola and special pathogens patients, demonstrates NETEC's ongoing commitment to being the country's go-to resource for Ebola and other special pathogen preparedness.

Expansion of EMS Resources

In Year 2, NETEC's healthcare facility self-assessments, on-site readiness assessments, and course evaluations clearly identified a need to expand the scope of resources offered by NETEC for Emergency Medical Services (EMS) systems. As a result, NETEC leadership established an expert EMS and pre-hospital workgroup to address EMS needs across NETEC's metrics development, facility assessment, and training and education activities. This workgroup aligns NETEC activities with ongoing partner efforts from the National Association of State EMS Officials and the National Institute of Environmental Health and Safety Worker Training Program.

The roles of the EMS and pre-hospital workgroup are to:

- Evaluate standard operating procedures and guidelines for patient isolation and transport
- Increase accessibility of EMS subject matter experts to providers
- Integrate workgroup members into readiness assessment teams
- Review existing EMS metrics for infectious disease transport
- Develop exercises to test EMS protocols
- Develop NETEC EMS training materials

Together, these initiatives complement NETEC's other offerings by providing guidance and resources to an additional group of key stakeholders, and mitigate gaps at local, regional, and national levels to further strengthen the nation's pre-hospital preparedness and response for suspected and confirmed special pathogens.

CASE EXAMPLE

ONE-ON-ONE TECHNICAL ASSISTANCE

Leading up to a large full scale exercise involving transport of multiple patients to a Regional Ebola and Special Pathogens Treatment Center (RESPTC), NETEC received a request for technical assistance in coordinating multiple simultaneous patient arrivals. NETEC worked with the RESPTC to develop policies and procedures individualized for this facility around the complex logistics of receiving multiple patients including staffing, transport routes within the facility, and environmental decontamination.

CASE EXAMPLE

NASEMSO STRATEGIC PARTNERSHIP

Given the essential role that pre-hospital resources play in the safe transport of Ebola and other special pathogens patients, NETEC and the National Association of State EMS Officials (NASEMSO) formed a strategic partnership centering on the development of fully-customizable exercise templates. Modeled after NETEC's suite of exercise resources, the NASEMSO templates will provide EMS organizations across the country access to standardized templates to train on and test their capabilities.

SPECIAL PATHOGENS RESEARCH NETWORK



Highlights

In collaboration with ASPR, the CDC and the National Institutes of Health (NIH), NETEC launched the Special Pathogens Research Network (SPRN) this year with the expressed purpose of creating a national platform for study of special pathogens. This development and implementation of this network during a special pathogen outbreak will support the rapid development of lifesaving prevention and treatment strategies. In the inaugural meeting held in Omaha in November 2016, members from all 10 of the regional treatment centers met with federal partners from the CDC, National Institute of Allergy and Infectious Diseases (NIAID), Biomedical Advanced Research and Development Authority (BARDA), and United States Army Medical Research Institute (USAMRIID) in order to rapidly implement new, promising experimental therapeutics.

"When Ebola hit…institutions were all independently trying to determine the best drug for treatment. It was inefficient—we weren't using the same protocols, and there was no consistency to the research. Now we can all collaborate to systematically use and evaluate medical counter measures together."

— Chris Kratochvil, MD

Working groups were launched to establish the critical research infrastructure needed to advance the understanding of the clinical syndromes and therapeutic options for outbreaks of Ebola or other special pathogens. The working group activities, which include participation from all 10 RESPTCs and multiple federal partners, aim to:

- Engage the RESPTCs and federal partners to coordinate research initiatives for Ebola and other special pathogens by having quarterly calls, workgroup membership, and annual meetings.
- Create a master protocol for research that allows rapid modification and review with the support of a network study coordinator.
- Operationalize a central IRB for SPRN that is located at UNMC that allows for 24-hour turnaround on review of protocols.
- Implement a training curriculum for research staff in a biocontainment unit (BCU) using online content, available for just-in-time training.



SPECIAL PATHOGENS RESEARCH NETWORK (continued)



- Establish standardized policies and procedures for the conduct of clinical research in BCUs across multiple institutions.
- Create modular universal case report forms and questionnaires, based on the master protocol, that include clinical, virologic, and immunologic data.
- Develop a web-based clinical data capture tool and database with capabilities to collect and coordinate data from the research network and conduct rapid analyses to provide feedback that informs therapeutics and clinical management.
- Hold an annual investigator's meeting with clinical research teams from RESPTCs as well as other domestic and international partners in order to develop, discuss, and revise protocols and research resources.
- Customize a biorepository for special pathogen samples with BSL-3 and BSL-4 capabilities.

SPRN Accomplishments

- Engaging Federal Partners
  Involvement and commitment from various federal agencies was recognized as an early critical success factor for SPRN. Federal stakeholders, including the CDC, FDA, NIH, USAMRIID, BARDA, the NIH Clinical Center, the NIAID Integrated Research Facility, Defense Advanced Research Projects Agency (DARPA), U.S. Department of Defense and U.S. Department of State, were engaged to help develop a research infrastructure for outbreaks of Ebola and other special pathogens.

  In June 2016, a joint letter from NETEC was composed addressing the difficulty of sharing specimens among and between institutions due to current Division of Select Agents and Toxins (DSAT) regulations. This letter was submitted to ASPR and CDC and resulted in numerous dialogues with DSAT and others to address regulations for the clinical setting in the case of another outbreak.

- SPRN Central IRB
  A centralized Institutional Review Board (IRB) located at UNMC was operationalized in March 2017. This Central IRB will function as the IRB of record for the SPRN, a process integral to rapid approval and dissemination of research protocols across the entire network.

  An emergency use authorization protocol for the use of ZMapp™ was the first to be approved using this system which utilizes reliance agreements between the different institutions.

- SPRN Biorepository
  A specimen biorepository for SPRN was customized to collect biologic samples from patients admitted to regional BCUs. Its goals are to establish a centralized and standardized process for the storage of samples, and to coordinate the shipping of samples from BCUs to the biorepository. Ultimately, the goal will be to create a sample request system in order to allow samples needing BSL-3 and BSL-4 conditions to stay within the SPRN.

SPRN Annual Meeting

The SPRN Annual Meeting was held on June 28, 2017 and was attended by 56 experts representing RESPTCs and federal as well as other external partners. The focus of the meeting was to share the vision for the SPRN in its second year and provide face-to-face work time for the SPRN work groups.

Participants described the meeting as productive, and the discussions and decisions made during the meeting were judged to be useful in advancing special pathogen research. They found the meeting provided invaluable networking opportunities, reinforced the importance of establishing the network, and gave insight regarding the work and potential challenges ahead.

SPECIAL PATHOGENS RESEARCH NETWORK (continued)

The 2017 Regional Ebola Treatment Center Summit

NETEC hosted 138 individuals from all 10 RESPTCs and federal partners. These Regional partners shared innovations and best practices, engaged in break out groups in key topic areas, discussed national gaps and developed working groups for to address ongoing challenges. Dr. Sir Michael Jacobs, the Medical Director of the U.K.'s High Level Biocontainment Unit at the Royal Free Hospital in London, delivered the keynote address to connect the international importance of the vital work NETEC and its many partners are performing.

With the leadership of NETEC, the next chapter of U.S. preparedness will involve continuous national collaboration driven by five new workgroups established during the Summit consisting of members from all 10 regional centers.

1) Ethics workgroup will consider the appropriateness of a research ethics workgroup and will develop an ethical framework for containment care.
2) Syndromic Surveillance workgroup will work with CDC and electronic health record (EHR) vendors to digitalize, operationalize, and optimize highly infectious disease screening tools.
3) Biocontainment Unit Leadership workgroup will create national standard operating procedures applicable to the care of patients with respiratory pathogens.
4) Exercise Design workgroup will identify exercise leaders at each regional center and begin sharing exercise resources and After Action Reports/ Improvement Plans.
5) Pediatric workgroup will monitor the implementation and progress of consensus recommendations discussed during the Summit.

By further strengthening the engagement of the regional partners, the 2017 Summit marked a new chapter in the work toward NETEC's vision of a sustainable infrastructure and culture of readiness for managing suspected and confirmed Ebola and other special pathogen incidents across United States public health and health care delivery systems.

Summit attendees identified the following issues as requiring further discussion and resolution:

- Laboratory Specimen Transportation: National guidance on reasonable and scientifically sound practices for the safe handling, storage, and transportation of laboratory specimens.
- Coordinating Regional Transportation: National memorandum of understanding and standard operating procedures for requesting and conducting ground and air transport of Ebola and other special pathogen patients within and between states or regions.
- Sustaining funding and stakeholder engagement: National direction and support to maintain biocontainment unit (BCU) readiness after current federal grant funding ends in 2020.
- Personal Protective Equipment (PPE): Validation, recommendations, standardization, and training related to PPE.
- Waste Management: National guidance on reasonable and scientifically sound practices for processing and transporting waste.
- BCU Activation Recommendations: Maintain a list of pathogens and high consequence infectious diseases that should activate BCUs.



NOTABLE GAPS, ACTIONS, AND RECOMMENDATIONS

NOTABLE GAPS	NETEC ACTIONS
Updates on Year 1 Gaps	
Laboratory Processes and specimen transport	In Year 2: • Many healthcare facility readiness assessments focused on laboratory • Expanded healthcare facility self-assessment and on-site readiness assessment criteria on laboratory assessment criteria • SPRN engaged federal stakeholders on discussion of specimen transport difficulties In Year 3: • Offer track for laboratory personnel at in-person courses • Develop online course on laboratory
Pre-hospital Coordination and training with EMS, e.g. roles, decontamination, waste management Regional transportation of patients, especially for long distances	In Year 2: • Created pre-hospital workgroup • Offered simulation course with EMS transfer scenario In Year 3: • Develop EMS-specific guidance and tools • Offer track for EMS personnel at in-person courses • Additional EMS assessment criteria and SME support on readiness assessments
Personal Protective Equipment (PPE)	In Year 2: • Expanded healthcare facility self-assessment and on-site readiness assessment criteria on PPE and related infection control processes • Offered additional simulation course and clinical sessions during in-person courses In Year 3: • Offer beginner and advanced PPE sessions at in-person courses • Develop online course on PPE
Infection Control	In Year 2: • Offered simulation courses with infection control focus In Year 3: • Continue focus on infection control in simulation courses • Develop online courses on waste management, autoclave use, and infection control
Research & Clinical Trials	In Year 2: • Developed Special Pathogens Research Network In Year 3: • Continue SPRN buildout • Exercise emergency research protocol during national exercises

NOTABLE GAPS, ACTIONS, AND RECOMMENDATIONS
(continued)

NOTABLE GAPS	NETEC ACTIONS
Gaps Emerging in Year 2	
Exercise Design	In Year 2: • Subject matter expert participation in regional and national drills • More healthcare facility readiness assessments involved exercises • Exercise technical assistance provided virtually and in-person • Created Exercise Design working group at RESPTC Summit In Year 3: • Integrate exercises into all RESPTC readiness assessments
Care for Special Populations	In Year 2: • Developed a pediatric working group during RESPTC Summit In Year 3: • Offer simulation course on pediatric patient care
Screening and Identification of Patients	In Year 2: • Expanded screening focus and assessment criteria on readiness assessments In Year 3: • Develop online course on persons under investigation
Care for Patient and Family Wellbeing	In Year 2: • Expanded patient and family wellbeing focus and assessment criteria on healthcare facility readiness assessments In Year 3: • Offer psychological resiliency self-assessment tools to all RESPTCs to assess and support staff well being • Promote Behavioral Health Considerations for Patients and Healthcare Workers online course
Specialty Care Patient Discharge Processes	In Year 2: • Expanded patient discharge focus and assessment criteria for specialty care patients on healthcare facility readiness assessments
Management of the Deceased	In Year 2: • Offered in-person technical assistance to one state • Expanded decedent management focus and assessment criteria on healthcare facility readiness assessments

NEXT STEPS



The ability to foster relationships between RESPTCs, state designated ETCs and assessment centers within an HHS region is critical to regional preparedness. In Year 3, NETEC will invite RESPTCs subject matter experts to participate in readiness assessments within their HHS regions. NETEC will leverage RESPTC participation in readiness assessments to foster positive relationships and ongoing collaboration at the state, regional, and national level. NETEC will continue to engage its readiness assessment teams and regional partners in the refinement of its healthcare facility readiness assessment tools.

In Year 3, NETEC aims to expand its online course offerings, host courses at partner facilities, and continue to provide specialized courses such as a Clinical Pediatrics Infectious Disease Simulation course. Throughout the next year NETEC plans to dramatically increase the number of online resources and will establish a repository to increase accessibility of crucial NETEC guidance, protocols and educational materials.

NETEC efforts to resolve identified gaps include the integration of exercises into the readiness assessment process, which will allow NETEC to evaluate execution of standard operating procedures (SOPs). The opportunity for NETEC SMEs to observe SOPs being operationalized will provide invaluable information on readiness as well as provide opportunities to provide real-time assistance to refine processes.

In the newly created Special Pathogens Research Network, RESPTC partners play integral roles leading tasks and providing unique research expertise. This will grow in Year 3 as the foundational work of the Network begins to bear fruit in rapidly-executed research projects and an expanding shared biorepository.

INCREASING AND SUSTAINING PREPAREDNESS

"Engaging pre-hospital and frontline hospital providers is a critical element of infectious disease preparedness and sustaining the gains in preparedness that NETEC has achieved over time."

— Dr. Colleen Kraft

Through years 1 and 2, NETEC has used the experience gained through providing safe and effective care to patients with Ebola Virus Disease in the United States to substantially improve the readiness of U.S. healthcare facilities to care for patients infected with Ebola and other special pathogens. NETEC is uniquely positioned to lead this preparedness effort because of the hands on experience of NETEC personnel. In program year 3 and beyond, NETEC will continue to build capacity within healthcare facilities. While continuing to prepare for Ebola, NETEC will also focus on preparedness for other special pathogens, including both other viral hemorrhagic fevers as well as others transmitted via airborne transmission.

Engaging pre-hospital and frontline hospital providers is a critical element of infectious disease preparedness and sustaining the gains in preparedness that NETEC has achieved over time. Frontline hospitals are the first line of defense in infectious disease preparedness, in year 3 and beyond NETEC will expand the educational and training opportunities for pre-hospital and frontline hospital providers through online learning, in-person didactics and simulation, as well as continuing to offer on-site and remote technical assistance.

Moving forward, NETEC will continue to build and expand upon relationships with our partners in improving readiness. These partnerships are an effective force-multiplier in NETECs preparedness efforts. For example, members of Regional ESPTCs accompanying NETEC personnel to on-site readiness assessments offers opportunities to then disseminate best practices through relationships with assessment hospitals and frontline facilities within each region. As part of a larger mission of global health security, NETEC is building international relationships as well. In Year 3 NETEC, ASPR, CDC and NIH will convene a meeting of international experts with experience in treating Ebola and other special pathogens to advance global high-level isolation standards, capacity, and collaboration.

Additionally, the expansion of NETEC to include the Special Pathogens Research Network will provide a valuable and unique national resource. This year the network of biocontainment research sites, central IRB, electronic data capture system, biorepository, and research infrastructure development will all be operational. Routine inclusion of the research network in exercises will facilitate optimization and further readiness of the resource.

The National Ebola Training and Education Center is critical to strengthening the U.S. healthcare system to combat Ebola and other special pathogens. NETEC continues to provide a dynamic range of resources for the U.S. to reduce the horrific potential of serious communicable diseases and will continue to build national frameworks to battle future communicable diseases that have not yet been encountered in the U.S. NETEC advances the readiness of frontline healthcare workers to insure they stand ready to fight the next infectious disease outbreak with the utmost confidence in their training and safety.




NETEC