

## MEDICAL SURGE

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### Capability Definition

Medical Surge is the capability to rapidly expand the capacity of the existing healthcare system in order to provide triage and then to provide medical care. This includes providing definitive care to individuals at the appropriate clinical level of care, within sufficient time to achieve recovery and minimize medical complications. The capability applies to an event resulting in a number or type of patients that overwhelm the day-to-day acute-care medical capacity. Medical Surge is defined as rapid expansion of the capacity of the existing healthcare system in response to an event that results in increased need of personnel (clinical and non-clinical), support functions (laboratories and radiological), physical space (beds, alternate care facilities) and logistical support (clinical and non-clinical equipment and supplies).

### Outcome

Injured or ill from the initial event are cared for and new cases that arise from initial illness or injury and new illnesses or injuries or exacerbation of pre-existing illness or injury due to disease, contamination or injury including exposure from communicable diseases and/or injuries which are secondary to the primary event are minimized. The at-risk population receives the appropriate protection (countermeasures) and treatment in a timely manner.

### Relationship to National Response Plan Emergency Support Function (ESF)/Annex

This capability supports Emergency Support Function:

- (ESF) #8: Public Health and Medical Services.

### Capability Description

Activity	Description
Patient care	<ul style="list-style-type: none"> <li>▪ Triage, to include recognition of symptoms</li> <li>▪ Treatment including provision of a medical screening, examination, and appropriate outpatient or inpatient care</li> <li>▪ Patient movement</li> <li>▪ Victim registry/patient tracking (to include medical monitoring)</li> <li>▪ Decontamination</li> <li>▪ Postmortem care and disposition</li> <li>▪ Special needs populations</li> <li>▪ Long-term care.</li> </ul>
Training and education	<ul style="list-style-type: none"> <li>▪ Training and event-specific risk communication (provider and public in conjunction with public health officials)</li> <li>▪ Public health education on aspects of self-care</li> <li>▪ Training and education regarding worker safety</li> <li>▪ Training in symptom recognition, identification, and treatment.</li> <li>▪ CBRNE (chemical, biological, radiological, nuclear, and explosive) training for all healthcare providers</li> <li>▪ Training non-specialists and staff in non-trauma hospitals to be</li> </ul>

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Activity	Description
	<p>prepared to accept trauma or special (burn, pediatric, etc.) cases that are beyond the capacity of the special centers or that self deliver to a non-trauma center hospital.</p> <ul style="list-style-type: none"> <li>▪ Training for paraprofessionals to provide behavioral health services.</li> <li>▪ Re-emphasis on training for injuries/illness related to “Natural Disasters”</li> </ul>
Resource management	<ul style="list-style-type: none"> <li>▪ Logistics (supply/resupply, utilities, equipment, mass distribution plans for prophylaxis)</li> <li>▪ Management of medical resources (prioritization of use, communication, information technology (IT))</li> <li>▪ Specialty beds, equipment, and staff</li> <li>▪ Coordination and management (including verification of credentials) of healthcare professionals/volunteers working in private healthcare systems</li> <li>▪ Clinical labs have to report syndromic and diagnostic data to the Public Health Lab Network.</li> <li>▪ Surge personnel from outside the affected area</li> </ul>
Hazards mitigation	<ul style="list-style-type: none"> <li>▪ Management of medical waste</li> <li>▪ Decontamination</li> <li>▪ Personal protective equipment (PPE)</li> <li>▪ Implementation of infection control precautions (to include isolation and quarantine)</li> <li>▪ Epidemiological surveillance of initial and subsequent hazards arising from or as a consequence to the initial event.</li> </ul>
Coordination	<ul style="list-style-type: none"> <li>▪ Security</li> <li>▪ Local and State emergency operations centers</li> <li>▪ Local and regional healthcare facilities</li> <li>▪ Mass care shelters</li> <li>▪ Special needs shelters</li> </ul>
Financial management	<ul style="list-style-type: none"> <li>▪ Establishment of an expense tracking system</li> </ul>

**Critical Tasks**

UTL#	Task
Res.B.1 3	Activate an incident command system (ICS).
Res.B.2 1.2.2.1	Establish criteria for patient decontamination that fully considers the safety of emergency medical services (EMS) personnel and hospital-based first responders, knowing that up to 80% of all victims will self-refer to the nearest hospital.
Res.B.2 5.5.6	Implement plans, procedures, and protocols to ensure individual gross decontamination of persons prior to admittance to shelters and other mass care facilities, medical and alternate care facilities, reception centers, and other places

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	as needed.
Res.B.5 4.2.2.3	Disseminate public health and safety information to the public to improve provision of home healthcare.
Res. C.1 1.1.3.4	Establish a system including facilities that have been identified to deal with burns and other specialized medical injuries.
Res. C.1 1.2.3.1.1	Provide post-hospitalization regulating and mass movement of patients that matches needy patients with transportation assets and available definitive care.
Res.C.1 1.2.3.1.2	Enhance emergency system patient transport and tracking systems.
Res.C.1 3	Provide coordination and support through the ICS for providing medical care.
Res.C.1 3.1.2.2	Ensure that comprehensive stress management strategies and programs are in place and operational for all emergency responders and workers.
Res.C.1 3.3.1	Coordinate with State, Tribal, and local medical, mental health, substance abuse, public health, and private sector officials to determine current assistance requirements.
Res.C.1 3.3.3.2	Activate procedures for altered nursing and medical care standards.
Res.C.1 3.3.3.6	Support medical surge capability by using volunteer resources.
Res.C.1 3.3.4.1	Establish alternate emergency care sites and overflow emergency medical care facilities to manage hospital surge capacity.
Res.C.1 3.3.4.4	Provide medical equipment and supplies in support of immediate medical response operations and for restocking supplies/equipment requested.
Res.C.1 3.4.3	Coordinate public health and medical services among those people who have been isolated or quarantined.
Res.C.1 3.4.8	Identify local, state and region mental health and substance abuse professionals or paraprofessionals by survey and needs assessment and integrate them within the response planning.
Res.C.1 4.1.7	Provide emergency medical and dental care.
Res.C.1 4.2.2	Activate healthcare workers' and volunteers' call systems.
Res.C.1 4.2.4	Mobilize burn/trauma/pediatric healthcare specialists.
Res.C.1 4.3.3.2	Provide accurate and relevant public health and medical information to clinicians, other responders, and the public in a timely manner.
Res.C.3 1.4	Implement medical surge plans, procedures, and protocols for special needs populations.
Rec.A.1 1.4.4	Develop and execute medical mutual aid agreements.

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UTL#	Task
Rec.A.1 1.4.5.4	Execute medical mutual aid agreements.
Rec.A.1 3.1.1	Provide long-term mental health and substance abuse behavioral health services to the community.
Rec.A.1 3.1.1.2	Provide counseling support.
Rec.A.1 3.1.1.3	Provide family support services.
Rec.A.1 3.1.1.4	Provide worker crisis counseling and mental health and substance abuse behavioral health support.
Rec.A.1 3.1.1.5	Mobilize mental health specialists for pediatrics.

**Preparedness Measures and Metrics**

Preparedness Measure	Preparedness Metric
<p>Triage treatment and initial stabilization can be conducted for the following classes of patients within three hours of an emergency:</p> <ul style="list-style-type: none"> <li>▪ 500 cases per million population for patients with symptoms of acute infectious disease – especially smallpox, anthrax, plague, tularemia and influenza;</li> <li>▪ 50 cases per million population for patients with symptoms of acute botulinum intoxication or other acute chemical poisoning – especially that resulting from nerve agent exposure;</li> <li>▪ 50 cases per million population for patients suffering burn or trauma; and</li> <li>▪ 50 cases per million populations for patients manifesting the symptoms of radiation-induced injury – especially bone marrow suppression</li> </ul>	Yes/No
<p>A 50-bed nursing subunit can be staffed for 12 hours with:</p> <ul style="list-style-type: none"> <li>(1) Physician</li> <li>(1) Physician’s assistant (PA) or nurse practitioner (NP) (physician extenders)</li> <li>(6) RNs or a mix of RNs and licensed practical nurses (LPN)</li> <li>(4) Nursing assistants/nursing support technicians</li> <li>(2) Medical clerks (unit secretaries)</li> <li>(1) Respiratory therapist (RT)</li> <li>(1) Case manager</li> <li>(1) Social worker</li> <li>(1) Housekeepers</li> <li>(1) Patient transporters</li> </ul>	Yes/No

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Preparedness Measure	Preparedness Metric
Percentage of hospitals that have the capacity to maintain, in negative pressure isolation, at least one suspected case of a highly infectious disease or a febrile patient with a suspect rash or other symptoms of concern who might be developing a highly communicable disease	100%
Regional system has been established to ensure a sufficient supply of pharmaceuticals to provide prophylaxis for 3 days to hospital personnel (medical and ancillary staff) and their family members and hospital based emergency first responders and their families -- in the wake of a terrorist-induced outbreak of anthrax or other disease for which such countermeasures are appropriate	Yes/No
Adequate PPE is available for current and additional health care personnel during an incident	Yes/No
Percentage of hospitals capable of providing decontamination to individual(s) with potential or actual hazardous agents in or on their body	100%
Percentage of hospitals that can decontaminate 500 persons in hours per millions population	100%
For an isolated community hospital serving a population of 100,000 persons, the hospital is able to decontaminate 50 persons in 2 h, or 25 per hour, or about one every 2 1/2 min.	Yes/No
Hospitals have at least one set of equipment to decontaminate ambulatory patients and one set of equipment for non-ambulatory patients	Yes/No
<p>Hospital decontamination systems address the following essential elements:</p> <p>(1) Adequate outdoor or indoor systems with consideration of typical ambient climate or heating systems to support colder climates. There must be adequate lighting and systems to communicate with staff and patients, both indoors and outdoors</p> <p>(2) Provision for separate entrance from typical ambulatory entrance, if the decontamination area is indoors. Some hospitals must combine the decontamination area with the EMS entrance. This is not desirable in the implementation of new systems as hospitals do redesigns</p> <p>(3) Provision for shower heads supplied with warm clean water, sufficient in number to manage the planning volumes</p> <p>(4) Gender and privacy concern</p>	<p>Yes/No</p> <p>Yes/No</p> <p>Yes/No</p> <p>Yes/No</p>

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Preparedness Measure	Preparedness Metric
(5) Capability to separate, isolate, and secure personal property for later decontamination	Yes/No
(6) Provision of supplies (for example, containers and name tags) and procedures for separately securing personal clothing and valuables and a process that allows valuables to be matched back with the patient	Yes/No
(7) Provision of clothing for persons to wear following the decontamination	Yes/No
Secure and redundant communications system that ensure connectivity during a terrorist incident or other public health emergency between health care facilities and state and local health departments, emergency medical services, emergency management agencies, public safety agencies, neighboring jurisdictions and federal public health officials have been established	Yes/No
Hospitals are utilizing competency-based education and training programs for adult and pediatric pre-hospital, hospital, and outpatient health care personnel responding to a terrorist incident or other public health emergency	Yes/No

**Preparedness Measures and Metrics**

Performance Measure	Performance Metric
Medical surge plans have been developed	Yes/No
Personnel (option 2): ratio based on the number of surge beds needed and the predefined patient:staff ratios that exist (if any). The minimal number of staff providing direct patient care on the 50-bed nursing subunit per 12-hour shift is 12, which includes the physician, the physician extenders, nurses, and nursing assistants (ACC CONOPS)	<ul style="list-style-type: none"> <li>▪ State A: population—5,595,211; surge beds—2,798; healthcare personnel (1:4)—2,938; healthcare personnel (1:6)—1,958</li> <li>▪ State B: population—11,353,140; surge beds—5,677; healthcare personnel (1:4)—5,960; healthcare personnel (1:6)—3,974</li> <li>▪ State C: population—20,851,820; surge beds—10,426; healthcare personnel (1:4)—10,947; healthcare personnel (1:6)—7,298</li> </ul>

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Performance Measure	Performance Metric
Isolation capacity (for contagious biological events)	<ul style="list-style-type: none"> <li>▪ Ensure that all hospitals have the capacity to maintain, in negative pressure isolation, at least one suspected case of a highly infectious disease (e.g., smallpox, pneumonic plague, SARS, influenza, hemorrhagic fevers) or a febrile patient with a suspect rash or other symptoms of concern who might be developing a highly communicable disease.</li> <li>▪ Identify at least one regional healthcare facility, in each defined region, that is able to support the initial evaluation and treatment of at least 10 adult and pediatric patients at a time in negative pressure isolation within 3 hours of the event.</li> </ul>

**Performance Measures and Metrics**

Performance Measure	Performance Metric
Patients and responders are identified, screened, and monitored after an event	Yes/No
Personnel are available to augment treatment facilities	Yes/No
Protocols for the set up, staffing and operation of alternate care facilities are established and implemented in the event	Yes/No
Adequate supplies, pharmaceuticals, and equipment are available to support facility surge capacity	Yes/No
Patients are successfully tracked	Yes/No
Policies for security of facility and its perimeter are implemented in the event	Yes/No
The percentage of staff at risk who are protected by appropriate PPE	100%
Mass decontamination is performed at the healthcare facility	Yes/No
Percentage of the population receiving definitive medical care that recovers from injuries over time	Incident Dependant

Performance Measure	Performance Metric
Percentage of hospitals that are available to support the incident	100%
Timely public health information is disseminated to improve provision of home healthcare	Yes/No
Adequate resources are available to provide post-hospitalization regulating and mass movement/transfer of patients	Yes/No

**Capability Elements**

**Personnel**

- Hospital Administrators
- Physicians
- Physician’s assistant (PA) or nurse practitioner (NP) (physician extenders)
- Nurses (registered nurses (RNs) or a mix of RNs and licensed practical nurses (LPN))
- Nursing assistants/nursing support technicians
- Pharmacists
- Pharmacy Technicians
- Medical clerks (unit secretaries)
- Respiratory therapist (RT)
- Radiology Technicians
- Laboratory Technicians
- Phlebotomists
- Physical Therapists
- Dietitians/Food Service
- Case manager
- Social worker
- Behavioral Health Specialists (paraprofessionals and professionals)
- Housekeepers
- Patient transporters
- Hospital Security
- Veterinarians
- Dentists
- Morticians

**Planning**

- Beds to be provided for patients who require hospitalization within 3 hours of a terrorism incident or other public health emergency
- Establishment of alternate care facilities capable of providing acute care needs and short term stabilization prior to transfer to established definitive care facility
- Isolation capacity to maintain suspected cases of a highly infectious disease
- Pharmaceutical caches to provide prophylaxis to hospital personnel, first responders, and their family members

**Equipment and Systems**

- Personal Protective Equipment for healthcare personnel
- Decontamination equipment (ASTM Standard E 2413)
- Communications and IT, allowing a secure and redundant communications system

**Training and Education**

- Competency-based education and training programs for healthcare personnel responding to a terrorist incident, natural disaster, or other public health emergency

**Planning Assumptions**

General

- Although applicable to several of the 15 National Planning Scenarios, the capability planning factors were developed from an in-depth analysis of the Pandemic Influenza scenario. Other scenarios were reviewed to identify required adjustments or additions to the planning factors and national targets.
- This Capability applies to a wide range of incidents and emergencies including accidental or deliberate disease outbreaks, natural disasters, nuclear and conventional events.
- The professionals listed in the following have basic skill sets commensurate with their professional training and experience qualified by professional licensure and/or industry standards.
- There will be a significant problem locating displaced family members as well as victims at treatment facilities.
- Emergency Response Plans are activated.
- Public Health Emergency and Stafford declaration will be utilized to enable the Secretary of the Department of Health and Human Services (HHS) to invoke Emergency Hiring Authority and additional resources for additional healthcare assets.
- Response to the overwhelming demand for services will require non-standard (Altered Standards of Care) approaches, including: Discharge of all but critically ill hospital patients. Expansion of hospital “capacity” by using all available space. Less than code compliance beds. Relaxation of practitioner licensure requirements as deemed appropriate. Utilization of general purpose and special needs shelters as temporary health facilities.
- Secondary bacterial infections following any mass casualty event will stress antibiotic supplies.
- There will be critical shortages of health care resources such as staff, hospital beds, mechanical ventilators, morgue capacity, temporary holding sites with refrigeration for storage of bodies and other resources.
- Routine medical admissions for acute medical and trauma needs will continue.
- Alternate healthcare facility plans are implemented.
- Emergency Use Authorities will be sought.
- Victims and Responder monitoring and treatment may be required over a long time frame.
- There may be a denigration of Healthcare Staff numbers for a variety of causes.

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- A large number (75 percent plus) of victims will self present without field triage or evaluation.
- The “normal” supply chain may be disrupted.
- Hospital logistical stores will be depleted in the early hours of any large scale event.
- There will be a significant increase and demand for specialty healthcare personnel and beds (biological contagious, burn, trauma, pediatrics) depending of the specific event.
- Healthcare providers are subject to the affects of disasters and may need decontamination and prophylaxis measures before being able to perform their response roles.

### Pandemic Influenza:

- Pandemic is pervasive and not localized.
- Worst case scenario would produce 733,000 patients hospitalized on any given day.
- Up to 20 percent of those hospitalized (146,600 patients) are critical and will each require a critical care bed, mechanical ventilation; necessitating staff to patient ratios of 1:2 registered nurses (RN) (73,300 RNs), 1:10 physicians (14,660 MDs); 1:5 respiratory therapists (29,320 RTs).
- 80 percent of those hospitalized (586,400 patients) are non-critical and necessitate a general medical bed, patient to staff ratios of 1:40 physician (14,660 MDs) and 1:20 RN (29,320 RNs).
- Vaccine availability will be insufficient and time to produce additional vaccine unacceptably long.
- Antiviral drug production will be surged.
- Strategic National Stockpile (SNS) will be depleted.
- 42 million Out Patient visits were provided with antivirals; antipyretics; analgesics
- 50 million at home on self care are on over-the-counter (OTC) only.
- 1 percent of the hospitalized patient population (7,338) warrant transfer from one healthcare facility to another more than 100 miles.
- 50 percent of the transferring patient population (3,669) will require transfer during one two-month period; the other half (3,669) during a separate two-month period; averaging 61 patients per day, with surging to 200 patients per day for one week.
- 10 percent of transferring patients (total of 733 patients over/during the entire scenario) could travel by commercial means sans medical attendance en route.
- 50 percent are ambulatory (total 3,669) but require medical attendance en route at a rate of 1 nurse per 50 patients.
- 40 percent are restricted to litters (total 2,936) and require medical attendance at a rate of 1 nurse per 20 patients.
- 50 percent of litter patients are critical and require ventilation and 1 nurse per patient (1,468).
- Because of the limited supply and production capacity, there is a need for explicit prioritization of influenza vaccine based on the risk of influenza complications, the likelihood of benefit from vaccination, role as an influenza pandemic responder, and impact of the pandemic on maintenance of critical infrastructure.

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- Persons of all ages will likely need 2 doses of vaccine, 3-4 weeks apart in order to be protected.

### Chemical:

- Most likely route of introduction of a chemical exposure in a mass casualty event will be inhalation.
- There will most likely be a delay in the identification of the chemical.
- All chemicals are toxic depending on the concentration and time spent in that concentration.
- Medical treatment facilities have inadequate decontamination capabilities.

### Nuclear Detonation:

- Triage will be a major issue for care providers.
- Decontamination and monitoring will be a major issue.
- As a rule of thumb, the sooner the onset of symptoms and the higher the dose received the less likely the victim will survive.
- Generally, invasive (open) procedures should be performed within the first forty-eight hours (48) in those receiving significant doses of radiation exposure due to immunocompromise.
- Critical infrastructure and personnel will be damaged and rendered ineffective for a three mile radius.
- Tens of thousands will require decontamination and both short-term and long-term treatment.
- The evacuated population will require shelter and food for an indefinite time.
- Healthcare facilities and emergency workers in the affected area will be overwhelmed.
- There will be a significant psychological impact on survivors creating long term mental health demands.
- The effects of the radiation will be prevalent for years creating long term health issues.
- Healthcare facilities involved in the affected area will have to be replaced and relocated.
- Triage may identify a significant number of patients who have received lethal doses of radiation with zero chance of survivability who will require palliative care only.
- There is a lack of palliative care resources and planning for large numbers of victims.
- Timely and accurate emergency public health information / crisis information news releases are vital for mitigation and prevention of further health issues.

### **Planning Factors from an In-Depth Analysis of a Scenario with Significant Demand for the Capability (Pandemic Influenza)**

Resource Organization	Estimated Capacity	Scenario Requirement Values	Quantity of Resources Needed <i>(Note: to completely mitigate scenario volume)</i>
Beds			Provide triage treatment and initial stabilization above the current daily

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<b>Resource Organization</b>	<b>Estimated Capacity</b>	<b>Scenario Requirement Values</b>	<b>Quantity of Resources Needed</b> <i>(Note: to completely mitigate scenario volume)</i>
			<p>staffed bed capacity for the following classes of adult and pediatric patients requiring hospitalization within 3 hours in the wake of a terrorism incident or other public health emergency:</p> <ul style="list-style-type: none"> <li>▪ 500 cases per million population for patients with symptoms of acute infectious disease—especially smallpox, anthrax, plague, tularemia and influenza</li> <li>▪ 50 cases per million population for patients with symptoms of acute botulinum intoxication or other acute chemical poisoning—especially that resulting from nerve agent exposure</li> <li>▪ 50 cases per million population for patients suffering from burns or other trauma</li> <li>▪ 50 cases per million population for patients manifesting the symptoms of radiation-induced injury—especially bone marrow suppression</li> </ul>
<p>Personnel (option 1): the concept of operations for the acute care center</p>	<p>Suggested minimal staffing per 12-hour shift for a 50-bed nursing subunit follows:</p>		<ul style="list-style-type: none"> <li>▪ 1 physician</li> <li>▪ 1 physician assistant (PA) or nurse practitioner (NP) (physician extenders)</li> <li>▪ 6 registered nurses (RNs) or a mix of RNs and licensed practical nurses (LPNs)</li> <li>▪ 4 nursing assistants/nursing support technicians</li> <li>▪ Medical clerks (unit secretaries)</li> <li>▪ Respiratory therapist (RT)</li> <li>▪ Case manager</li> <li>▪ Social worker</li> <li>▪ Housekeepers</li> <li>▪ 1 patient transporter</li> </ul>
<p>Pharmaceutical caches</p>			<p>Establish a regional system that ensures a sufficient supply of pharmaceuticals to provide prophylaxis for 3 days to hospital personnel (medical and ancillary staff) and their family members and hospital-based emergency first responders and their families in the wake of a terrorist-induced outbreak of anthrax or other disease for which such countermeasures are</p>

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<b>Resource Organization</b>	<b>Estimated Capacity</b>	<b>Scenario Requirement Values</b>	<b>Quantity of Resources Needed</b> <i>(Note: to completely mitigate scenario volume)</i>
			appropriate.
Personal protective equipment (PPE)			Ensure adequate PPE (to include prophylaxes) to protect current and additional healthcare personnel during an incident. The quantity and type of PPE will be established based on a hazardous vulnerability analysis (HVA) and the level of decontamination that is being designed.
Decontamination (ASTM International Standard E 2413)			<ul style="list-style-type: none"> <li>▪ A community must be able to provide decontamination to 500 persons per million population in 3 hours. This should allow hospitals to plan for one set of equipment that would serve ambulatory patients (a showering setup), and one set of equipment that would decontaminate nonambulatory patients (two at a time, washed about 5 minutes a piece) but could be adapted if all persons are ambulatory.</li> <li>▪ Communities must make four hospital employees available 24 hours a day to use level C protection to decontaminate patients who are grossly contaminated.</li> </ul>
Communications and information technology			<ul style="list-style-type: none"> <li>▪ Establish a secure and redundant communications system that ensures connectivity during a terrorist incident or other public health emergency among healthcare facilities and State and local health departments, emergency medical services (EMS), emergency management agencies, public safety agencies, neighboring jurisdictions, and Federal public health officials.</li> <li>▪ Enhance the capability of rural and urban hospitals, clinics, EMS systems, and poison control centers to report syndrome-related and diagnostic data that is suggestive of terrorism or a highly infectious disease to local and State health departments on a 24/7 basis.</li> </ul>
Training and education			Awardees will use competency-based education and training programs for adult and pediatric pre-hospital, hospital, and outpatient healthcare personnel responding

Resource Organization	Estimated Capacity	Scenario Requirement Values	Quantity of Resources Needed <i>(Note: to completely mitigate scenario volume)</i>
			to a terrorist incident or public health emergency.

**Approaches for Large-Scale Events**

None specified.

**National Targets and Assigned Levels**

- The metrics set forth below are from the cooperative agreement guidance of the Health Resources and Services Administration’s (HRSA’s) National Bioterrorism Hospital Preparedness Program (NBHPP) and are for the express purpose of planning.
- All incidents are local and initially will be managed locally. All States have been charged through the NBHPP cooperative agreement to plan based on hazard vulnerability analyses that have been done in their States.
- It should be noted that because these are *planning* level requirements, these numbers have not been validated or proven to be realistic but serve as a starting point from which to plan.

Resource	Assigned Level and Quantity
Beds	<p>Provide triage treatment and initial stabilization above the current daily bed capacity for the following classes of adult and pediatric patients requiring hospitalization within 3 hours in the wake of a terrorism incident or public health emergency:</p> <ul style="list-style-type: none"> <li>▪ 500 cases per million population for patients with symptoms of acute infectious disease—especially smallpox, anthrax, plague, tularemia, and influenza</li> <li>▪ 50 cases per million population for patients with symptoms of acute botulinum intoxication or other acute chemical poisoning—especially that resulting from nerve agent exposure</li> <li>▪ 50 cases per million population for patients suffering from burns or other trauma</li> <li>▪ 50 cases per million population for patients manifesting the symptoms of radiation-induced injury—especially bone marrow suppression</li> </ul>
Personnel (option 1): the concept of operations for the acute care center	<ul style="list-style-type: none"> <li>▪ 1 physician</li> <li>▪ 1 PA or NP</li> <li>▪ 6 RNs or a mix of RNs and LPNs</li> <li>▪ 4 nursing assistants/nursing support technicians</li> <li>▪ 2 medical clerks (unit secretaries)</li> <li>▪ 1 RT</li> </ul>

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Resource	Assigned Level and Quantity
	<ul style="list-style-type: none"> <li>▪ 1 case manager</li> <li>▪ 1 social worker</li> <li>▪ 1 housekeeper</li> <li>▪ 1 patient transporter</li> </ul>
<p>Personnel (option 2): ratio based on the number of surge beds needed and the predefined patient:staff ratios that exist (if any)</p>	<ul style="list-style-type: none"> <li>▪ State A: population—5,595,211; surge beds—2,798; healthcare personnel (1:4)—2,938; healthcare personnel (1:6)—1,958</li> <li>▪ State B: population—11,353,140; surge beds—5,677; healthcare personnel (1:4)—5,960, healthcare personnel (1:6)—3,974</li> <li>▪ State C: population—20,851,820; surge beds—10,426; healthcare personnel (1:4)—10,947; healthcare personnel (1:6)—7,298</li> </ul>
<p>Isolation capacity</p>	<ul style="list-style-type: none"> <li>▪ Ensure that all hospitals have the capacity to maintain, in negative-pressure isolation, at least one suspected case of a highly infectious disease (e.g., smallpox, pneumonic plague, SARS, influenza, hemorrhagic fevers) or a febrile patient with a suspect rash or other symptoms of concern who might be developing a highly communicable disease.</li> <li>▪ Identify at least one regional healthcare facility in each defined region that is able to support the initial evaluation and treatment of at least 10 adult and pediatric patients at a time in negative-pressure isolation within 3 hours of the event.</li> </ul>
<p>Pharmaceutical caches</p>	<p>Establish a regional system that ensures a sufficient supply of pharmaceuticals to provide prophylaxis for 3 days to hospital personnel (medical and ancillary staff) and their family members and hospital-based emergency first responders and their families in the wake of a terrorist-induced outbreak of anthrax or other disease for which such countermeasures are appropriate.</p>
<p>Personal protective equipment (PPE)</p>	<p>Ensure adequate PPE to protect current and additional healthcare personnel during an incident. The quantity and type of PPE will be established based on an HVA and the level of decontamination that is being designed.</p>
<p>Decontamination (ASTM International Standard E 2413)</p>	<ul style="list-style-type: none"> <li>▪ A community must be able to provide decontamination to 500 persons per million population in 3 hours. This should allow hospitals to plan for one set of equipment that would serve ambulatory patients (a showering setup) and one set of equipment that would decontaminate nonambulatory patients (two at a time, washed about 5 minutes each) but could be adapted if all persons are ambulatory.</li> <li>▪ Communities must make four hospital employees available 24 hours a day to use level C protection to decontaminate patients who are grossly contaminated.</li> </ul>

Resource	Assigned Level and Quantity
Communications and information technology	<ul style="list-style-type: none"> <li>▪ Establish a secure and redundant communications system that ensures connectivity during a terrorist incident or public health emergency among healthcare facilities and State and local health departments, EMS, emergency management agencies, public safety agencies, neighboring jurisdictions, and Federal public health officials.</li> <li>▪ Enhance the capability of rural and urban hospitals, clinics, EMS systems, and poison control centers to report syndrome-related and diagnostic data that are suggestive of terrorism or a highly infectious disease to their associated local and State health departments on a 24/7 basis.</li> </ul>
Training and education	Use competency-based education and training programs for adult and pediatric pre-hospital, hospital, and outpatient healthcare personnel responding to a terrorist incident or public health emergency.

**Linked Capabilities**

- Animal Health Emergency Support
- CBRNE Detection
- Communications
- Community Preparedness and Participation
- Emergency Operations Center Management
- Emergency Public Information and Warning
- Epidemiological Surveillance and Investigation
- Fatality Management
- Isolation and Quarantine
- Law Enforcement Investigations and Operations (Evidence collection)
- Mass Care (Sheltering, Feeding, and Related Services)
- Mass Prophylaxis
- Medical Supplies Management and Distribution
- Planning
- Public Health Laboratory Testing
- Responder Safety and Health
- Restoration of Lifelines
- Risk Management
- Structural Damage and Mitigation Assessment
- Triage and Pre-Hospital Treatment
- Volunteer Management and Donations

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