

ISOLATION AND QUARANTINE

Capability Definition

Isolation and Quarantine is the capability to protect the health of the population through the use of isolation and/or quarantine measures in order to contain the spread of disease. Isolation of ill individuals may occur in homes, hospitals, designated health care facilities, or alternate facilities. Quarantine refers to the separation and restriction of movement of persons who, while not yet ill, have been exposed to an infectious agent and may become infectious. Successful implementation will require that sufficient legal, logistical, and informational support exists to maintain these measures. Most experts feel that isolation and quarantine will not stop the outbreak and that if used, the focus will be on cases that might introduce the disease into the State or other geographic area.

Outcome

Individuals who are ill, exposed, or likely to be exposed are separated, movement is restricted, basic necessities of life are available, and their health is monitored in order to limit the spread of a newly introduced contagious disease (e.g., pandemic influenza). Legal authority for those measures is clearly defined and communicated to all responding agencies and the public. Logistical support is provided to maintain measures until danger of contagion has elapsed.

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

This capability supports the Emergency Support Function (ESF) #8: Public Health and Medical Services.

Preparedness Tasks and Measures/Metrics

Activity: Develop and Maintain Plans, Procedures, Programs, and Systems	
Critical Tasks	
Res.B3b 1.1	Develop plans, policies, and procedures for implementing isolation and quarantine
Res.B3b 1.1.1	Introduce legislation authorizing isolation and quarantine (including quarantine of groups)
ResB3b 1.1.2	Develop plans for coordinating quarantine activation and enforcement with public safety and law enforcement
Res.B3b 1.3.1	Stand up isolation and quarantine units (including defining procedures/protocols) in all 83 of the target cities and as needed in foreign countries
ResB3b 1.2	Develop plans, procedures, and protocols to monitor long-term health effects across community interests
ResB3b 1.3	Establish systems, programs, and resources for implementing isolation and quarantine
Res.C1a 6.2.3	Improve monitoring of adverse treatment reactions among those people who have received medical countermeasures and have been isolated or quarantined
RecA2b 1.1	Create and implement policies to deal with the financial impact to individuals who are placed in isolation or quarantine and to the public health system

Preparedness Measures	Metrics
Legislation has been enacted authorizing appropriate isolation and quarantine measures (including quarantine of groups)	Yes/No
Plan for conducting isolation and quarantine operations is in place	Yes/No
Plan specifies the criteria for activating Isolation and Quarantine procedures	Yes/No
Plan addresses coordinating with Mass Care (e.g. for provision of water, food, bulk supplies to isolated and quarantined individuals).	Yes/No
Plan addresses cultural characteristics of populations to be isolated and/or quarantined (e.g. religious needs, language barriers).	Yes/No
Plan addresses the financial impact to individuals who are placed in isolation and quarantine.	Yes/No
Plan addresses coordinating quarantine activation and enforcement with public safety and law enforcement	Yes/No
Plan addresses tracking details of individuals placed in Isolation or Quarantine using Personal Health Identification Number (PHIN)	Yes/No
Plan addresses implementation of infection control precautions	Yes/No
Legal authority to isolate and/or quarantine individuals, groups, facilities, animals, and food products is defined	Yes/No
Plan addresses how to ensure adequate stockpiles of appropriate personal protective equipment (PPE)	Yes/No
Plan addresses having or having access to information systems to support tracking adherence to isolation and quarantine measures that comply with the PHIN functional requirements for <i>Countermeasure and Response Administration</i>	Yes/No
System is in place for monitoring people who have been isolated or quarantined (e.g., for evidence of infection, progression of illness)	Yes/No

Activity: <i>Develop and Maintain Training and Exercise Programs</i>	
Critical Tasks	
ResB3b 2.1	Develop and implement training for isolation and quarantine
ResB3b 2.2	Develop and implement exercises for isolation and quarantine
Preparedness Measures	Metrics
Staff have been trained in isolation and quarantine operations and plans	Yes/No
Exercises to test plans for implementing isolation and quarantine have been conducted	Yes/No

Performance Tasks and Measures/Metrics

Activity: *Direct Isolation and Quarantine Tactical Operations*

Definition: In response to a need for isolation and quarantine orders, direct, manage, and coordinate isolation and quarantine operations

Critical Tasks	
Res.B3b 3.1.1	Identify decision-makers to oversee isolation and quarantine conduct
Res.B3b 3.1.3	Develop disease-specific isolation and quarantine plan
Res.B3b 3.1.2	Identify applicable isolation and quarantine laws, policies, and implementation procedures
Res.B3b 3.2	Provide isolation and quarantine information to emergency public information for release
Res.B3b 3.2.4	Coordinate with public information agencies to disseminate health and safety information to the public
Res.B3b 3.2.5	Coordinate public information releases about those people who have been isolated or quarantined
Res.B3b 3.2.1	Coordinate with public information agencies regarding notification of quarantine or isolation to ensure compliance of the general public (e.g., doors are locked and may be opened only by public health official or designated persons)
Res.B3b 3.2.3	Promote the public acceptance of isolation and quarantine as necessary control measures
Res.B3b 3.2.2	Coordinate with public information agencies to provide timely dissemination of health and safety information to the public regarding risk and protective actions
Res.B3b 3.3.1	Coordinate with Law Enforcement to monitor and enforce restrictions, if necessary
Res.B3b 3.1.4	Ensure appropriate judicial review of isolation and quarantine orders
Res.B3b 3.3.2	Coordinate with public health and medical services to ensure appropriate care for those individuals who have been isolated or quarantined
Res.B3b 3.3.2.1	Ensure critical medical care for any ill individuals (related to the epidemic or not)
Res.B3b 3.3.2.2	Coordinate comprehensive stress management strategies, programs, and crisis response teams for isolation and quarantine operations
Res.B3b 3.3.5	Assist public health in disease control, quarantine, containment, and eradication
Res.B3b 3.3.3	Coordinate with Mass Care to provide water, food, and bulk supplies to isolated and quarantined individuals
Res.B3b 3.3.3.1	Ensure that adequate food, water, and medication are provided to quarantined or isolated persons (through public health officials; oversight by case manager) (Note: Not only public health officials, all appropriate sectors are involved in this)
Res.B3b 3.3.4	Coordinate with Public Works for retrieval and disposal of contaminated articles from homes or other locations where individuals are isolated or quarantined
Res.B3b 3.3.6	Coordinate with the agriculture community regarding potential animal influence on need for isolation/quarantine
Res.B3b 3.4.2	Report health status data on isolated and quarantined populations
Res.B3b 6.3.1.1	Monitor for fever or evidence of infection (quarantine) or progression of illness requiring hospitalization (isolation) by epidemic agent
Res.B3b 6.3.1.2	Identify and respond to adverse events (epidemic treatment or prophylaxis)

Pro.B1e 3.2.1	Maintain communication channels (Centers for Disease Control (CDC) Coordinating Office for LRN)	
Res.B3b 6.6	Have or have access to information systems to support monitoring adherence to isolation and quarantine measures that comply with the PHIN functional requirements for Countermeasure and Response Administration.	
Performance Measures		Metric
Public health official with legal authority to issue isolation and quarantine orders is identified		Yes/No
Time in which isolation and quarantine order is issued		Within 4 hours from notification of need to implement isolation and quarantine
Time in which educational information is provided for release		Within 1 hour from issuance of order
Time in which medical resource personnel are notified and assembled at isolation and quarantine areas		Within 12 hours from need to implement isolation and quarantine
Time in which communications with public health officials and CDC are established		Within 30 minutes from need to implement isolation and quarantine

Activity: *Activate Isolation and Quarantine*

Definition: Initiate plan and mobilize healthcare and security personnel and resources to contain a communicable disease outbreak

Critical Tasks

Res.B3b 4.1	Identify community sites suitable for quarantine	
Res.B3b 4.3	Issue isolation and quarantine order or an agreement for voluntary isolation	
Res.B3b 4.3.1	Issue an order that closes public venues based on the recommendation of an epidemiologist	
Res.B3b 4.4	Disseminate guidelines for isolation and quarantine restrictions	
Res.B3b 4.4.1	Disseminate protocols for isolation and care giver treatment of isolated individuals	
Res.B3b 4.2	Stand up isolation and quarantine units	
Res.B3b 4.4.2	Ensure mental health care and access to religious practices	
Res.B3b 4.4.3	Ensure access to communication with family and friends to reduce unnecessary stress	
Res.B3b 4.4.4	Provide PPE and culturally and linguistically appropriate instruction on its use for household members and caregivers	
Performance Measures		Metric
Time in which isolation and quarantine units are stood up		Within 24 hours from notification of need to implement isolation and quarantine
Time in which personnel are deployed to traveler screening locations		Within 2 hours from identifying screening locations
Time in which restriction guidelines and treatment protocols are disseminated to medical care providers		Within 2 hours from order being issued

Activity: Implement Travel Restrictions

Definition: Screen travelers from outbreak or pandemic areas and implement travel restrictions consistent with disease specific precautions

Critical Tasks	
Res.B3b 5.1	Establish traveler screening locations
Res.B3b 5.2.1	Screen inbound/outbound travelers from outbreak or pandemic areas for illness or exposure
Res.B3b 5.2.2	Prevent boarding of potentially infected passengers in foreign countries with endemic disease
Res.B3b 5.2.3	Educate international travelers on health risks and symptoms
Res.B3b 5.2.4	Screen and educate all staff of outbound flights to exclude potentially infected passengers
Res.B3b 5.2.5	Isolate and quarantine potentially infected travelers
Performance Measures	Metric
Time in which screening locations are established	Within 30 minutes from screener arrival onsite
Percent of inbound/outbound travelers screened while isolation and quarantine order is in effect	100%
Percent of screened positive persons isolated and quarantined	100%

Activity: Implement Voluntary Isolation and Quarantine

Definition: Within an identified geographic area, implement separation and restriction of movement of potentially exposed asymptomatic individuals and isolate symptomatic individuals on a voluntary basis

Critical Tasks	
Res.B3b 6.1	Acquire identification information of affected individuals under voluntary isolation and quarantine
Res.B3b 6.2	Provide medical and supportive care guidance to community under voluntary isolation and quarantine
Res.B3b 6.5	Provide infection control education materials to community under voluntary isolation and quarantine and hospitals
Res.B3b 6.3.1	Monitor health status of voluntarily isolated and quarantined individuals and caregivers in the community and hospitals
Res.B3b 6.4	Arrange for transportation to designated healthcare facilities of critically ill individuals under voluntary isolation and quarantine
Res.B3b 6.3.2	Monitor compliance in whatever way is necessary (e.g., direct communication with the person under order via land line)
Performance Measures	Metric
Percent of caregivers for isolated patients who become infected while under voluntary isolation and quarantine	0%

Frequency with which updates are provided to tracking system from voluntarily isolated or quarantined individuals while under voluntary isolation and quarantine	Every 24 hours
Percent of persons receiving care and prevention instruction while under voluntary isolation and quarantine	100%
Percent of caregivers using infection control precautions while under voluntary isolation and quarantine	100%

Activity: *Implement Mandatory Isolation and Quarantine*

Definition: Ensure compliance with orders for separation and restriction of movement of potentially exposed asymptomatic individuals and isolation of symptomatic individuals within an identified geographic area

Critical Tasks

Res.B3b 7.1	Acquire identification information of affected individuals under mandatory isolation and quarantine
Res.B3b 7.2	Provide medical and supportive care guidance to affected population under mandatory isolation and quarantine
Res.B3b 7.3	Monitor compliance with infection control and mandatory restrictions of movement
Res.B3b 7.4	Monitor health status of individuals and caregivers under mandatory isolation and quarantine and hospital staff
Res.B3b 7.5	Arrange for transportation to designated healthcare facilities of critically ill individuals under mandatory isolation and quarantine

Performance Measures	Metric
Percent of caregivers for isolated patients who become infected while under mandatory isolation and quarantine	0%
Frequency with which updates to tracking system are provided from isolated or quarantined individuals while under mandatory isolation and quarantine	Every 24 hours
Percent of persons receiving care and prevention instruction while under mandatory isolation and quarantine	100%
Percent of caregivers using infection control precautions while under mandatory isolation and quarantine	100%
Percent of isolated or quarantined persons receiving daily monitoring and compliance contact	100%

Activity: *Demobilize Isolation and Quarantine*

Definition: Upon isolation and quarantine order being lifted, decontaminate equipment, supplies, and personnel if appropriate and demobilize

Critical Tasks

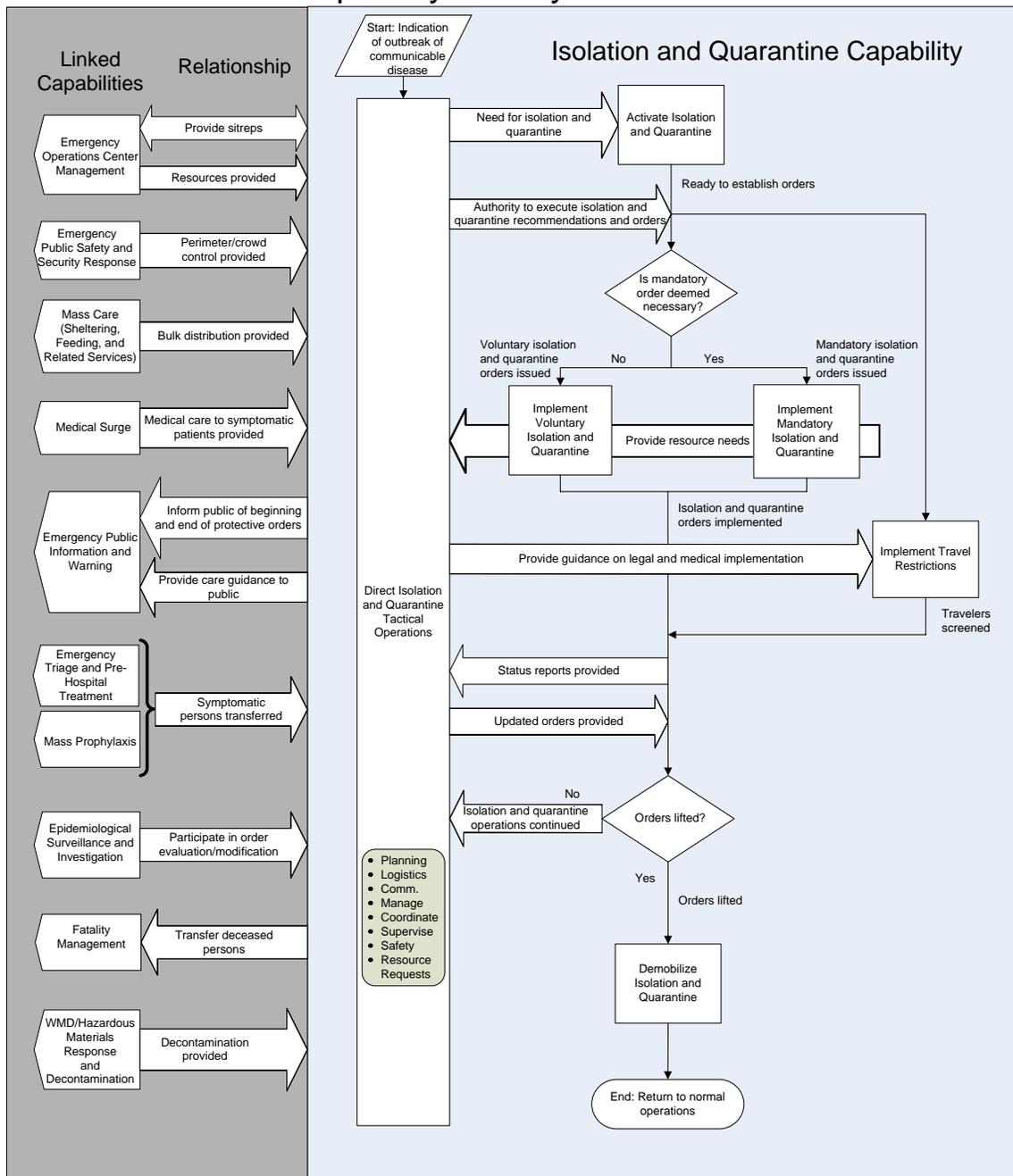
Res.B3b 8.2	Participate in incident debriefing on isolation and quarantine implementation
Res.B3b 8.3	Release personnel supporting isolation and quarantine operations

Res.B3b 8.4	Reconstitute resources and facilities supporting isolation and quarantine operations	
Performance Measures	Metric	
Time in which isolation and quarantine facilities are restored to pre-incident operations	Within 7 days from isolation and quarantine order being lifted	
Isolation and quarantine personnel are debriefed	Yes/No	

Linked Capabilities

Linked Capability	Relationship
Emergency Operations Center Management	Emergency Operations Center Management provides resources to Isolation and Quarantine. Emergency Operations Center Management and Isolation and Quarantine provide each other with situation reports.
Emergency Public Safety and Security Response	Emergency Public Safety and Security Response provides perimeter and crowd control to Isolation and Quarantine.
Mass Care (Sheltering, Feeding, and Related Services)	Mass Care provides bulk distribution items to Isolation and Quarantine.
Medical Surge	Medical Surge treats symptomatic patients in Isolation and Quarantine.
Emergency Public Information and Warning	Isolation and Quarantine provides care guidance to public and protective order information to Emergency Public Information and Warning for release to the public.
Emergency Triage and Pre-Hospital Treatment	Emergency Triage and Pre-Hospital Treatment transfers symptomatic persons to Isolation and Quarantine.
Mass Prophylaxis	Mass Prophylaxis transfers symptomatic persons to Isolation and Quarantine.
Epidemiological Surveillance and Investigation	Epidemiological Surveillance and Investigation participates in order modification/evaluation with Isolation and Quarantine.
Fatality Management	Isolation and Quarantine transfers deceased persons to Fatality Management.
WMD and Hazardous Materials Response and Decontamination	WMD and Hazardous Materials Response and Decontamination provides decontamination to Isolation and Quarantine.

Capability Activity Process Flow



Resource Element Description

Resource Elements	Components and Description
Community Isolation and Quarantine Teams	Teams located in district, county, and municipal office that comprise 6 officers per district or county team and 4 officers per municipal team
Quarantine Stations	CDC Quarantine Stations provide advanced emergency response capabilities, including isolation and communications facilities. They include regional health officers to provide clinical, epidemiologic, and programmatic support, and quarantine public health officers to conduct surveillance, response, and communicable disease prevention activities. WHO also provides quarantine stations.

Planning Assumptions

- 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 and plague scenarios. Other scenarios were reviewed to identify required adjustments or additions to the planning factors and national targets.
- Isolation and quarantine deals specifically with infectious diseases.
- Isolation and quarantine deals specifically with separation of individuals rather than prohibition on structures.
- This capability refinement addresses community separation and not hospitalized patients.
- Recognition and assessment of exposure to an illness is an epidemiological function.
- 50 percent of infected persons are asymptomatic shedders of the influenza virus.
- Shedding of the virus occurs 24 hours before the development of symptoms.
- Cases are occurring in a single wave over 8 weeks. The response is an evolving process – it has a phased approach.
- Number of days in quarantine are 10 to 14 days (epidemiological evidence may allow for a reduction in this time).
- Number of days in isolation varies by age (7 days for adults; 14 days for children).
- World Health Organization (WHO) pandemic influenza phase: Phases 1 and 2 are interpandemic; 3, 4, and 5 are pandemic alert; 6 is pandemic period. General preparedness activities have occurred in WHO Phases 1 – 3.
- WHO Phase 1 – 3: General Preparedness activities.
- In WHO Phase 4, cases are occurring outside of the USA.
- WHO Phase 4, if there is extensive trade or travel links with the affected country, and WHO Phase 5, are the most important when considering isolation and quarantine.
- WHO Phase 5 is larger clusters, more transmission, suggesting that the virus is becoming more adoptive to human transmission.
- WHO Phase 5 is most important when considering Isolation and Quarantine.
- Set up isolation/quarantine stations in each foreign country that is a source of the infection.
- Under the Department of Health and Human Services (HHS), there are 83 tier 1 cities in the United States (i.e. airports with more than 1 million travelers, seaports with more than 100k travelers, or land borders with more than 5 million crossings); currently there are isolation/quarantine stations in 18 of these cities.
- Screening for inbound/outbound flights will be needed.

Target Capabilities List

- WHO Phase 6: try and isolate 10 cases per million population. Sustained community transmission is assumed to be occurring when cases exceed 10 per million population.
- Attempt to quarantine 30 contacts per case (300 contacts per 1 million population).
- This will be community based rather than hospitalized patients.
- Closing of public venues may be retained here.
- There is a high Percent of absenteeism related to medical, traditional first responder, and public health personnel.
- Isolation orders will be based on a case definition, not strictly on laboratory test results.
- At least eight other countries are affected.
- Resources for provision of mental health services are not defined in this capability.
- Resources for provision of law enforcement are not defined in this capability.
- Resources for public information are not defined in this capability.

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

Resource Organization	Estimated Capacity	Scenario Requirement Values	Quantity of Resources Needed
Community Isolation/and Quarantine Team	One per 20 persons isolated or quarantined	Isolate 10 per million population; quarantine 300 per million population. Current population of the USA is 297 million. Need to isolate 2970 persons and quarantine 89,100 persons.	Total 92,070, divided by 20 =4,604. Could be reduced by number of hospital isolations — need to cross-reference with Health Resources and Services Administration.
Quarantine Station	Two per city can provide isolation and quarantine services to inbound and outbound passengers	83 Tier One cities	Two per 83 Tier One Cities, plus one per affected overseas country.

Approaches for Large-Scale Events

- Community Isolation/Quarantine Teams need to be situated locally.
- Federal Quarantine Stations need to be located in tier 1 cities (those that have airports with more than 1 million travelers, seaports with more than 100,000 travelers, or land borders with more than 5 million crossings). Note that 18 Federal Quarantine Stations currently exist in tier 1 cities.

Target Capability Preparedness Level

Resource Element Unit	Type of Element	Number of Units	Unit Measure (number per x)	Lead	Capability Activity Supported by Element
Community Isolation & Quarantine Team	Resource Organization	1	Per jurisdiction affected	Local (City)	All Activities

Resource Element Unit	Type of Element	Number of Units	Unit Measure (number per x)	Lead	Capability Activity Supported by Element
Community Isolation & Quarantine Team	Resource Organization	1	Per district/county affected	Local (County)	All Activities
Quarantine station	Resource Organization	1	Per Tier 1 City	Federal (HHS/CDC)	Implement Travel Restrictions
Quarantine Station	Resource Organization	1	Per pandemic agent source country	Private Sector (World Health Organization)	Implement Travel Restrictions

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