



Emergency Medical Services System Response

Emergency Department Response

Surgical Department Response

**Intensive Care Unit Response**

Radiology Response

Blood Bank Response

Hospitalist Response

Administration Response

Drugs and Pharmaceutical Supplies

Nursing Care

## ■ **Managing Surge Needs for Injuries: Intensive Care Unit Response**

### PURPOSE

To mobilize and assign intensive care unit (ICU) beds and related assets to provide life- and limb-saving care to those who could benefit most out of 300 patients injured from explosions (care extends to patients from the community with acute illness) for up to 72 hours after a bombing.

### BACKGROUND

The Madrid, Spain, terrorist bombings were used as a model to help develop solutions for managing rapid surge problems during a mass casualty event.

On March 11, 2004, 10 explosions occurred almost simultaneously on commuter trains in Madrid, killing 177 people instantly and injuring more than 2,000. On that day, 966 patients were taken to 15 public community hospitals. More than 270 patients arrived at the closest facility between 8:00 a.m. and 10:30 a.m.

Federal resources should not be expected to arrive sooner than 72 hours from the time of the explosion. Resources can be delayed by the time taken to deploy them and by emergency personnel responding to multiple communities.

### GOAL

Within 2 hours of a blast event, mobilize the resources of the intensive care units and related support areas and sustain response for up to 72 hours from the time of the event.

### REQUIRED RESOURCES

- ◆ Resources needed for communicating within the organization and with the community (e.g., satellite phone and other portable communication devices).
- ◆ Transportation resources for the patients who may have severe burns. After initial resuscitation, some of these patients may require transfer to a burn center.
- ◆ Additional ventilators may be needed. Most, if not all, ICUs and ventilators and other usual ICU resources will be in use at the time of the incident.

► ***This document is a resource guide. Local needs, preferences, and capabilities of affected communities may vary.***

## ASSUMPTIONS

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- ◆ Patient care in the ICU will extend beyond the emergency department surge and may last for days or weeks.
- ◆ ICU assets are a critical component of surge capacity after an explosion and must be mobilized quickly.
- ◆ The ICU capacity of any institution or community (i.e., number of beds) is fixed because of structural requirements.
- ◆ Some critical care physicians, nurses, respiratory care practitioners, and pharmacists will be in the hospital or be available within 2 hours after an event occurs.
- ◆ The majority of critical care patients will require mechanical ventilation.
- ◆ The institution will be capable of caring for burns and open fractures for a minimum of 24 hours.
- ◆ Occult injuries may become apparent in the ICU or outside the ICU and, therefore, need additional resources.
- ◆ Other critical care specialists can be available within 2 hours of an event to provide direct patient care in the operating rooms and related areas.
- ◆ If operating rooms and related areas are not made available in a timely manner, patients could suffer adverse consequences.
- ◆ Some patients could be moved to different care sites.
- ◆ Federal resources cannot be expected to arrive sooner than 72 hours from the time of an explosion.
- ◆ ICU staff will be familiar with the hospital disaster plan, their individual roles and responsibilities, and the roles and responsibilities of all essential departments.

## ACTION STEPS

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### 1. Involve leadership.

Critical care leadership should be involved in all components of hospital disaster planning.

### 2. Designate medical and nursing leadership.

The hospital should designate medical and nursing leadership to coordinate critical care resources and report through the incident management system.

### 3. Plan for patient overflow.

Hospitals will identify ICU overflow sites for patients who cannot be admitted to an existing ICU and ensure that adequate staff support and monitoring can be provided.

### 4. Plan for secondary triage.

ICU referral may differ in a mass casualty event. Expertise is required in secondary triage and in ongoing care for decisions regarding application of resources.



### 5. Develop a plan to ventilate patients.

Hospitals will have a plan to obtain additional ventilators and/or personnel if needed. The plan should include a protocol for managing patients when ventilators are not available.

### 6. Educate incident command leaders.

Ensure that individuals who will assume a role in the critical care component of the incident command role are knowledgeable about incident command, operations of other hospital components, and community disaster response.

### 7. Identify lines of communication.

Identify lines of communication and interactions with other components of the community-wide disaster plan and regional trauma system.

### 8. Establish admission protocols.

Ensure that protocols for admission to the ICU during a disaster are in place.

### 9. Ensure that supply of critical and necessary medications is available.

## EVALUATION

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- ◆ Participate in community-wide drills and evaluate performance of ICU incident management.
- ◆ Determine when individuals should be on-site. Review triage decisions and quality, quantity, and appropriateness of information obtained from and given to others, including hospital incident command, emergency medicine, and other community assets.
- ◆ Refine and conduct further planning based on drill experience.

For more information, visit <http://emergency.cdc.gov/masscasualties>.