Crisis Standards of Care: A Systems Framework for Catastrophic Disaster Response

Committee on Guidance for Establishing Standards of Care for Use in Disaster Situations
Institute of Medicine

Stephen V. Cantrill, MD, FACEP

2014 Hospital Emergency Preparedness Forum
13 March 2014
Little Rock, AR
Crisis Standards of Care: Preparing for the Worst

Pandemics

Terrorism

Natural Disasters
CSC: Scarce Resource Settings

![Diagram showing the relationship between resources, demand, available, and time with trigger points.](image)
Accused Doctor Said to Have Faced Chaos at New Orleans Hospital

By CHRISTOPHER DREW  
and SHAILA DEWAN

NEW ORLEANS, July 19 — She arrived at Memorial Medical Center to treat several patients as Hurricane Katrina’s winds were gathering and did not leave until days later, when the water and the temperature and the body count had risen beyond endurance.

By the time the ordeal ended, her friends and supporters say, Dr. Anna M. Pou was one of the few doctors left in a hospital that had become a nightmare.

Overheated patients were dying around her, and only a few could be taken away by helicopter, the only means of escape for the most fragile patients until the water receded. Medicines were running low, and with no electricity, patients living on machines were running out of battery power. In the chaos, Dr. Pou was left to care for many patients she did not know.

But did she cross a line during those harrowing days, using lethal injections to kill several patients who were in extreme distress? The attorney general of Louisiana says Dr. Pou did, and on Tuesday recommended that she be prosecuted for murder.

Her supporters, though, say there is another explanation: she was using drugs to try to calm and comfort patients who had nearly reached their limit.

Eugene Myers, a professor at the University of Pittsburgh who helped train Dr. Pou, said that what she had told him shortly after the hurricane sounded heroic.

He said Dr. Pou had told him that she and Lori Budo and Cheri Landry, two nurses who have also been arrested in the case, either helped evacuate the last patients or tried to make them comfortable with pain medications.

Dr. Anna M. Pou at her mother’s home yesterday in New Orleans. She and two nurses are accused of killing patients at Memorial Medical Center.
“Crisis Standards of Care” - Where Have We Been?
“Altered Standards of Care in Mass Casualty Events”
AHRQ, 2005

Overall goal: Save the greatest number of lives
● Will require changes in the usual standards of care
● Planning and guidance in this area is lacking
● Basis for allocation of scarce resources and care must be fair, clinically sound and transparent
● Guidance must be dynamic and flexible during an event

Related Issues:
● Establishing the authority to activate the use of altered standards of care under certain conditions
● Legal issues related to liability, licensing, and intergovernmental or regional mutual aid agreements.

(+ many other points)

1. Introduction
2. Ethical Considerations in Community Disaster Planning
3. Assessing the Legal Environment Concerning Mass Casualty Event Planning and Response
4. Prehospital Care
5. Hospital/Acute Care
6. Alternative Care Sites
7. Palliative Care
8. Influenza Pandemic Case Study

Serious systematic disaster planning at the community level with broad outreach is essential.

Involvement and accountability of political and community leadership is necessary.

Transparency of ethical judgments is required.

Maximize lives saved.

- “Graceful degradation of care” resulting in poor patient outcomes is the option of last resort.

Recognize that standards will change; protocols for triage will need to be adaptable.
Concept of Operations for Triage of Mechanical Ventilation in an Epidemic

John L. Hick, MD, Daniel T. O’Laughlin, MD

Abstract

The recent outbreak of severe acute respiratory syndrome and the growing potential of an influenza pandemic force us to consider the fact that despite great advances in critical care medicine, we lack the capacity to provide intensive care to the large number of patients that may be generated in an epidemic or multisite bioterrorism event. Because many epidemic and bioterrorist agent illnesses involve respiratory failure, me-

Academic Emergency Medicine 2006; Volume13, Number 2: 223-229
Development of a triage protocol for critical care during an influenza pandemic


See related article page 1393

ABSTRACT

Background: The recent outbreaks of avian influenza (H5N1) have placed a renewed emphasis on preparing for an influenza pandemic in humans. Of particular concern in this planning is the allocation of resources, such as ventilators and antiviral medications, which will likely become scarce during a pandemic.

Methods: We applied a collaborative process using best evidence, expert panels, stakeholder consultations and ethical principles to develop a triage protocol for prioritizing access to critical care resources, including mechanical ventilation, during a pandemic.

Results: The triage protocol uses the Sequential Organ Failure Assessment score and has 4 main components: inclusion criteria, exclusion criteria, minimum qualifications for survival and a prioritization tool.

Interpretation: This protocol is intended to provide guidance for making triage decisions during the initial days to weeks of an influenza pandemic if the critical care system becomes overwhelmed. Although we designed this protocol for use during an influenza pandemic, the triage protocol would apply to patients both with and without influenza, since all patients must share a single pool of critical care resources.

CMAJ 2006;175(11):1377-81

mand for intensive care unit (ICU) resources, solely for patients with influenza, would peak at 171% of current ICU bed capacity and 118% of the ventilator capacity. These figures do not take into account the current usage rate of critical care for patients without influenza, which is nearly at 100%. Nor does this model factor in the availability of human resources. Surge response strategies10 (e.g., scaling back elective procedures, opening additional critical care areas and implementing the use of “mass critical care”11,12) will partially mitigate the sudden demand for medical care during an influenza pandemic; however, these strategies will be inadequate to fully address the demands on the health care system.

When resource scarcities occur, the tenets of biomedical ethics and international law dictate that triage protocols be used to guide resource allocation.13-15 International law requires a triage plan that will equitably provide every person the “opportunity” to survive. However, such a law does not guarantee either treatment or survival.16 We have developed this triage protocol in an effort to ensure the equitable and efficient use of critical care resources if scarcities occur during an influenza pandemic.

Methods

In December 2004, at the request of the steering committee of the Ontario Health Plan for an Influenza Pandemic (OH-PIP), a group of clinicians with expertise in critical care,
Allocation of Ventilators in an Influenza Pandemic: Planning Document

NYS Workgroup on Ventilator Allocation in an Influenza Pandemic
NYS DOH/ NYS Task Force on Life & the Law

Executive Summary:

A powerful strain of avian influenza has generated concern about a possible pandemic, though scientists do not know with certainty whether or when a pandemic will occur. However, the better-prepared New York State is, the greater its chances of

Powell, Tia, Christ, Kelly C., Birkhead, Guthrie S. Allocation of Ventilators in a Public Health Disaster
DISASTER MEDICINE AND PUBLIC HEALTH PREPAREDNESS 2008 2: 20-26
DEFINITIVE CARE FOR THE CRITICALLY ILL DURING A DISASTER

Summary of Suggestions From the Task Force for Mass Critical Care Summit, January 26–27, 2007
Asha Devereaux; Michael D. Christian; Jeffrey R. Dichter; James A. Geiling; Lewis Rubinson

Definitive Care for the Critically Ill During a Disaster: Current Capabilities and Limitations: From a Task Force for Mass Critical Care Summit Meeting, January 26–27, 2007, Chicago, IL
Michael D. Christian; Asha V. Devereaux; Jeffrey R. Dichter; James A. Geiling; Lewis Rubinson

Definitive Care for the Critically Ill During a Disaster: A Framework for Optimizing Critical Care Surge Capacity: From a Task Force for Mass Critical Care Summit Meeting, January 26–27, 2007, Chicago, IL
Lewis Rubinson; John L. Hick; Dan G. Hanfling; Asha V. Devereaux; Jeffrey R. Dichter; Michael D. Christian; Daniel Talmor; Justine Medina; J. Randall Curtis; James A. Geiling

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Lewis Rubinson; John L. Hick; J. Randall Curtis; Richard D. Branson; Suzi Burns; Michael D. Christian; Asha V. Devereaux; Jeffrey R. Dichter; Daniel Talmor; Brian Erstad; Justine Medina; James A. Geiling

Definitive Care for the Critically Ill During a Disaster: A Framework for Allocation of Scarce Resources in Mass Critical Care: From a Task Force for Mass Critical Care Summit Meeting, January 26–27, 2007, Chicago, IL
Asha V. Devereaux; Jeffrey R. Dichter; Michael D. Christian; Nancy N. Dubler; Christian E. Sandrock; John L. Hick; Tia Powell; James A. Geiling; Dennis E. Amundson; Tom E. Baudendistel; Dana A. Brner; Mike A. Klein; Kenneth A. Berkowitz; J. Randall Curtis; Lewis Rubinson
EMERGENCY PREPAREDNESS

States Are Planning for Medical Surge, but Could Benefit from Shared Guidance for Allocating Scarce Medical Resources
Adapting Standards of Care under Extreme Conditions: Guidance for Professionals During Disasters, Pandemics, and Other Extreme Emergencies

American Nurses Association
Summary of a Workshop Series

Clare Stroud, Bruce M. Altevogt, Lori Nadig, Matthew Hougan, Rapporteurs

Forum on Medical and Public Health Preparedness for Catastrophic Events

Board on Health Sciences Policy

http://www.nap.edu/catalog/12787.html

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Department of Health and Human Services
200 Independence Ave., S.W.
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Dear Dr. Lurie:

On behalf of the Institute of Medicine (IOM) Committee on Guidance for Establishing Standards of Care for Use in Disaster Situations, we are pleased to report our conclusions and recommendations. At the request of the Office of the Assistant Secretary for Preparedness and Response, Department of Health and Human Services, the IOM convened this committee to develop guidance that state and local public health officials and health-sector agencies and institutions can use to establish and implement standards of care that should apply in disaster situations—
Guidance for Establishing Crisis Standards of Care for Use in Disaster Situations

September, 2009
Duty to Plan

“Note that in an important ethical sense, entering a crisis standard of care mode is not optional – it is a forced choice, based on the emerging situation. Under such circumstances, failing to make substantive adjustments to care operations – i.e., not to adopt crisis standards of care – is very likely to result in greater death, injury or illness.”
A substantial change in usual healthcare operations and the level of care it is possible to deliver, which is made necessary by a pervasive (e.g., pandemic influenza) or catastrophic (e.g., earthquake, hurricane) disaster.
This change in the level of care delivered is justified by specific circumstances and is formally declared by a state government, in recognition that crisis operations will be in effect for a sustained period.
The formal declaration that crisis standards of care are in operation enables specific legal/regulatory powers and protections for healthcare providers in the necessary tasks of allocating and using scarce medical resources and implementing alternate care facility operations.
Recommendations

1. Develop Consistent State Crisis Standards of Care Protocols with Five Key Elements

2. Seek Community and Provider Engagement

3. Adhere to Ethical Norms during Crisis Standards of Care

4. Provide Necessary Legal Protections for Healthcare Practitioners and Institutions Implementing Crisis Standards of Care

5. Ensure Consistency in Crisis Standards of Care Implementation

6. Ensure Intrastate and Interstate Consistency Among Neighboring Jurisdictions
Crisis Standards of Care
With 5 Key Elements

1. A strong ethical grounding
2. Integrated and ongoing community and provider engagement, education, and communication
3. Assurances regarding legal authority and environment
4. Clear indicators, triggers, and lines of responsibility
5. Evidence-based clinical processes and operations
Full Report:

http://www.iom.edu/Reports/2009/DisasterCareStandards.aspx
IOM CSC Phase Two:
Abbreviated Statement of Task:

• Review the impact of the IOM 2009 CSC letter report

• Identify metrics to assess the development of crisis standards of care protocols.

• Develop templates for states, EMS systems, hospitals and individual clinicians to use to guide decision making.

• Develop a template for state and local governments for community engagement tools.
Crisis Standards of Care: A Systems Framework for Catastrophic Disaster Response
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### Study Sponsors

- The Department of Health and Human Services
- The Department of Veterans Affairs
- The National Highway Transportation Safety Administration
Structure of the Report

Introduction
- Introduction, Framework, Legal Issues, Cross-Cutting Themes (ethics, palliative care, and mental health)

Four discipline-specific volumes
- State and local, EMS, health care facilities, out-of-hospital care
- Includes the roles of each stakeholder, relevant CSC operational considerations, template descriptions, and the templates (functions and tasks to develop and implement CSC)

Public Engagement
- The case for and challenges of public engagement
- Public Engagement Toolkit

Appendices
Introduction and CSC Framework
Conceptualizing a Systems Framework for Catastrophic Disaster Response
Comprehensive Discussions:

- Legal Issues
- Cross-Cutting Themes
  - Ethics
  - Palliative Care
  - Mental Health
REPORT RECOMMENDATION

Crisis Standards of Care
A Systems Framework for Catastrophic Disaster Response

INSTITUTE OF MEDICINE
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Introduction and CSC Framework
RECOMMENDATION

Federal, state, tribal, and local governments should develop a systems-based framework for catastrophic disaster response, which must be integrated into existing emergency response plans and programs. To facilitate the implementation of this framework, the committee specifically recommends that:

- Each level of government should ensure coordination and consistency in the active engagement of all partners in the emergency response system, including emergency management, public health, emergency medical services, public and private health care providers and entities, and public safety.

- Each level of government should integrate crisis standards of care into surge capacity and capability planning and exercises.
RECOMMENDATION (cont.)

- HHS/ASPR (e.g., through its Regional Emergency Coordinators) should facilitate crisis standards of care planning and response among state and tribal governments within their region.

- In crisis standards of care planning and response efforts, states should collaborate with and support local governments.

- Federal disaster preparedness and response grants, contracts, and programs in HHS, DHS, DOD, DOT, and VA—such as the HPP, PHEP, Metropolitan Medical Response System, Community Environmental Monitoring Program, and UASI—should integrate relevant crisis standards of care functions.
STATE & LOCAL GOVERNMENT

• CSC emergencies are expected to be multi-jurisdictional, statewide, or even multi-state incidents. Therefore:
  • Governments at all levels play a crucial role in leading and coordinating CSC planning and implementation, and
  • Considerable state-level coordination with intrastate, interstate, federal (including RECs), and private sector partners is essential

• State* government: Ultimately accountable for CSC activities, with states having “the political and constitutional mandate to prepare for and coordinate the response to disaster situations throughout their state jurisdictions” (2009)

• Local government: “Uniquely positioned in the organizational structure of states to intersect with both state government partners and the communities in their local jurisdiction(s)” (2012)

* For the purposes of the report, the term “state” encompasses states, tribal jurisdictions, and territories.
STATE GOVERNMENT

- States are uniquely positioned to coordinate with intrastate (e.g., regional, local), interstate, federal, & private sector partners
  - State role is essential in promoting consistent CSC planning, response, and recovery activities
- Variations in state agency structures and authorities will often dictate emergency response leadership roles
  - States should have the flexibility to develop the CSC organizational structure that makes the most sense for them
  - However, the state health department is fundamentally the most appropriate agency to lead and coordinate CSC planning and implementation at the state level and to advise state leadership
    - Roles include: convening stakeholders, coordinating CSC plan development/revision, ensuring regional and local coordination and consistency, leading CSC responses, advising state leadership, etc.
SDMAC: State Disaster Medical Advisory Committee

STATE LEADERSHIP
(Public Health Agency, Emergency Management Agency, Governor)

Function 1: Establish SDMAC

Function 2: Draft CSC Plan

Function 3: Introduce CSC Plan to Stakeholders

Function 4: Revise CSC Plan

Function 5: Adopt and Disseminate CSC Plan

Function 6: Maintain CSC Plan

Include Multidisciplinary Stakeholders (local, regional, state)

For CSC responses, a small group of SDMAC experts is available to advise state leadership on CSC issues.

Review and Incorporate Stakeholder Input

Review and Incorporate Response Lessons Learned, New Guidance, and Stakeholder Input
LOCAL GOVERNMENT

• All disasters are, ultimately, local

• Despite variations in state and local government structures, the role of local government in CSC planning/implementation is crucial
  • Local governments are uniquely positioned in the organizational structure of states to intersect with both state government partners and the communities in their local jurisdiction
  • As the “front line” of public health agencies, the local health department is the most appropriate agency to coordinate CSC planning and implementation at the local level

• Local CSC coordination, consistent with state planning and response actions, is critical to achieving the envisioned systems-based CSC response
  • Incorporating the state CSC plan into local planning efforts (e.g., OEP health/medical annex) will help guide local CSC response activities
State Response Structure along the Continuum of Care

CONVENTIONAL

Local Health Care System (hospitals, practitioners, clinics, etc.)

CONTINGENCY

State EMA/SHD (+ State EOC/SHD EOC) (if needed)

Regional Emergency Coordination Groups

Local EMA(s) (+ Local EOC)
LHD(s) (+ LHD EOC)

Health Care Coalition(s)

Local Health Care System

CRISIS

Neighboring States

Governor

Federal Partners

Mutual Aid

SDMAC

State EMA (+ State EOC)

SHD (+ SHD EOC)

Regional Emergency Coordination Groups

Local EMA (+ Local EOCs)
LHDs (+ LHD EOCs)

Health Care Coalitions

Local Health Care Systems
Template 5.1. Core Functions for CSC Plan Development (Within States)

Function 1. Establishment of CSC Planning Committee

Task 1
State public health agency is identified as the lead state agency for CSC planning and implementation.

Task 2
State health department establishes and staffs a state-level, multidisciplinary, and transparent state disaster medical advisory committee (SDMAC) to draft the state CSC plan. During a CSC response, a smaller, technical subgroup of the SDMAC is available to serve as an operational, expert advisory body to inform and advise the state health department, state leadership, and other stakeholders on CSC plan development, implementation, and recovery issues.

Full SDMAC meets as needed. Full SDMAC CSC plan drafting group includes a broad range of stakeholders, such as:

- state health department;
- local health departments and other local government agencies;
- state emergency management agency (EMA);
- state homeland security office;
- health care (including SDMAC members if such a committee already exists, regional medical coordination centers or regional DMACs [RDMACs], health care coalitions, private practitioners, hospitals, health care systems, specialty hospitals, professional boards and associations, and emergency medical services [EMS]);
- medical examiner;
- ethics experts;
- attorneys;
- academics;
- community members;
- representatives of at-risk populations (e.g., pediatric, mental health);
- governor’s office;
- National Guard;
- Department of Veterans Affairs (VA) health care facilities (if located within the state);
- Department of Defense (DOD) health care facilities (if located within the state); and
- others as applicable (including federal partners, such as Department of Health and Human Services [HHS] regional emergency coordinators [RECs]).

Task 3
SDMAC recommends to the state the CSC response structure that

Notes and Resources
An SDMAC or similar committee may already exist in the state. If so, that existing committee can be adapted to conduct CSC planning, ensuring that its membership includes the appropriate range of stakeholders. After the planning phase, the SDMAC can contract to a smaller, technical subgroup that assumes operational responsibility for advising the state during CSC incidents.
Template 5.2. Core Functions for Implementing CSC Plans in States During CSC Incidents

Function 1. Alerting and Activation

Task 1
State health department and the state emergency management agency (EMA) are able to receive and manage emergency alerts that may trigger activation of the state CSC plan from stakeholders, including local public health, health care, and emergency management partners.

Task 2
Upon receiving emergency information suggesting the need for activation of the state CSC plan, state health department (as the lead state agency for CSC) activates and consults with the state disaster medical advisory committee (SDMAC), and also consults with applicable state (e.g., governor, EMA) and local (e.g., mayor, local health department) leadership to assess the situation and make a determination on activation of the state CSC plan. Routine and crisis monitoring and reporting mechanisms are developed to establish local, regional, and state normative levels of seasonal/incident-based demand, resources, capacity (beds), and staffing.

Task 3
Before or concurrently with health department activation of the state CSC plan, state health department ensures that applicable state and local emergency declarations (e.g., public health emergency, catastrophic health emergency, state of emergency, or civil defense emergency, depending on the jurisdiction) are made or requested; the state also understands applicable federal, state, and local legal authorities and regulations (see Chapter 3).

Task 4
State health department activates components of the state CSC plan based on indicators and triggers outlined in the plan and on the assessment performed under Task 2 above; the state health department and state EMA also work with state, regional, and local partners to activate local and/or regional CSC or other emergency plans and mutual aid agreements, as applicable.

Task 5
Throughout the emergency, SDMAC members are available to the state for consultation, and the state health department and SDMAC are able to continually assess the situation, including whether the state CSC plan should remain activated.
Three Different Sections in the Report, But All Closely Related by the Provision of Care
Three of the Five Pillars of Medical Surge Response: “Where the patients are”
Hospital Example: Movement from Conventional to Contingency to Crisis

<table>
<thead>
<tr>
<th>Incident demand/resource imbalance increases</th>
<th>Risk of morbidity/mortality to patient increases</th>
<th>Recovery</th>
</tr>
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<table>
<thead>
<tr>
<th>Conventional</th>
<th>Contingency</th>
<th>Crisis</th>
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<tbody>
<tr>
<td>Space</td>
<td></td>
<td></td>
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<tr>
<td>Usual patient care space fully utilized</td>
<td>Patient care areas re-purposed (PACU, monitored units for ICU-level care)</td>
<td>Facility damaged/unsafe or non-patient care areas (classrooms, etc.) used for patient care</td>
</tr>
<tr>
<td>Staff</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Usual staff called in and utilized</td>
<td>Staff extension (brief deferrals of non-emergent service, supervision of broader group of patients, change in responsibilities, documentation, etc.)</td>
<td>Trained staff unavailable or unable to adequately care for volume of patients even with extension techniques</td>
</tr>
<tr>
<td>Supplies</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cached and usual supplies used</td>
<td>Conservation, adaptation, and substitution of supplies with occasional re-use of select supplies</td>
<td>Critical supplies lacking, possible re-allocation of life-sustaining resources</td>
</tr>
<tr>
<td>Standard of care</td>
<td></td>
<td></td>
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<tr>
<td>Usual care</td>
<td>Functionally equivalent care</td>
<td>Crisis standards of care®</td>
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Normal operating conditions

Indicator: potential for crisis standards®

Trigger: crisis standards of care®
Coordination and Integration of These Three Pillars:

• Horizontally across “Pillars”
• Vertically with local, state and federal agencies
• Unified strategies / coordinated tactics
• Application of NIMS / NRF principles and systems
All Fit Under the Same Overall Critical Guidance Structure
Section for Each Pillar is a Separate Bound Volume: EMS, Hospitals, Alternate Care

- Defines roles and responsibilities of stakeholders
- Describes operational considerations for development and implementation of CSC plans
- Templates outlining functions and tasks for each stakeholder under crisis conditions
Challenges in Dealing with EMS for Crisis Standards of Care

- Range of governance: Public (Fire based vs Third Service) vs Private Volunteer
- Range of training and capabilities: EMT-B, EMT-I, EMT-P, EMD
- Area served: Urban vs Suburban vs Rural
- Range of operations: Dispatch, Response, Patient assessment, Transport
Options to be Considered in CSC Development for EMS:

• Changes to:
  • Scopes of practice
  • Treatment modalities
  • Ambulance staffing
  • Call response
  • Treatment and Transport protocols
  • Dispatch criteria
  • Allowable destinations (e.g. Alternate care sites)

• Triggers and thresholds for invoking CSC
Core Functions of EMS Systems in the Implementation of CSC Plans

1. Assessment and activation
2. Alerts and notifications
3. Command
4. Control
5. Communications
6. Coordination
7. Public information
8. Operations
9. Logistics
10. Planning
11. Jurisdiction, scope, authority and legal/regulatory issues
Core Functions of EMS Personnel in the Implementation of CSC Plans

1. Notification
2. Command, control, communications and coordination
3. Public information
4. Operations
5. Logistics
6. Mental health
7. Legal issues
Template 6.1. Core Functions of EMS Systems in the Development of State Crisis Standards of Care (CSC) Plans

Function 1. Assess Jurisdictional Authority and Planning Resources

State and Regional/Local Tasks

State Task 1
State EMS office participates with the state lead agencies responsible for CSC planning and implementation (state health department/emergency management agency [EMA]) in assessing the scope, jurisdiction, and authority of existing state and regional EMS infrastructure for CSC planning and implementation:

- advisory committees
- regional trauma/EMS advisory councils/committees, and
- health care coalitions

State Task 2
State EMS office, in collaboration with the state health department, EMA, and legal counsel, develops an inventory of applicable federal, state, and local legal and regulatory authorities and protections, including those related to EMS personnel and provider agency liability, licensing, credentialing, and mutual aid agreements. Includes

- understanding how authorities and protections can be used to facilitate CSC strategies and identifying gaps to be addressed for revision of the plan, including EMS agency licensing, operations (e.g., staffing, advanced life support [ALS]/basic life support [BLS] licensure), and dispatch center operations; and
- state and local medical directors examining regulatory implications with respect to changing dispatch protocols, ambulance staffing, scope of practice, treat-and-release policies, destination policies, and disaster triage decisions.

State and Regional/Local Task 3
State EMS, regional infrastructure, and local EMS agencies identify and review existing state, regional, and local surge capacity, mass casualty, and CSC plans. Includes

- identifying gaps in the state/regional/local plans;
- reviewing after-action reports from previous functional exercises addressing surge capacity and CSC needs;
- searching resources from other states and national organizations (see the “Notes and Resources” column);
- identifying at-risk populations for inclusion in EMS CSC planning (refer to the EMS for Children program); and
- identifying and reviewing resource documents that may assist state, regional, and local EMS agencies in assessing CSC needs and developing CSC plans.

Notes and Resources


Preparedness and Response to a Rural Mass Casualty Incident: Workshop Summary (IOM, 2011)

Principles of EMS Systems (ACEP, 2005)

Medical Surge Capacity and Capability: A Management System for Integrating Medical and Health Resources During Large Scale Emergencies (HHS, 2007)

State, regional, and local surge capacity plans

State, regional, and local mass casualty plans

Pre-arrival dispatch instruction protocols

State EMS statute and regulatory standards

Emergency Medical Assistance Compact (EMAC) and mutual-aid agreements

Templates for:
EMS Systems
EMS Personnel
Hospitals and Acute Care Facilities

- Clinical Care Committee necessary at each hospital to implement CSC
- Bi-directional reporting mechanism with state and local governments
- Planning required at local and regional levels
  - Maximizes use of available resources
  - Insures fair and consistent use of resources for uniform level of care
  - Provides mechanism for consistent policy development
General Functions of Hospital Facilities

1. Alerting
2. Notification
3. Command
4. Control
5. Communications
6. Coordination
7. Public information
8. Operations
9. Logistics
10. Planning
11. Administration
Functions of Hospital Care Providers

1. Notification
2. Command, control, communications and coordination
3. Public information
4. Operations
5. Logistics (space, staff, supplies)
6. Logistics (mental health)
7. Legal issues
### Template 7.1. Core Functions of Hospital Facilities and Providers in the Implementation of CSC Plans

**Hospital Facilities**

#### Function 1. Alerting

**Task 1**
Health care facility is able to receive and manage alerts from emergency medical services (EMS), public safety, hospital partners, the department of public health (Health Alert Network), and the National Weather Service.

**Task 2**
Health care facility emergency response plan provides the triggers and process for incident command to activate the CSC plan and indicators (if applicable) to prompt consideration of activation.

#### Notes and Resources
Triggers and indicators are consistent with regional and state plans as applicable.

#### Function 2. Notification

**Task 1**
Institution is able to alert staff within and external to the facility, including:

- EMS and coalition/partner health care facilities;
- medical, administrative, and support staff;
- clinical care committee members; and
- technical experts, including those in toxicology, radiation safety, infectious disease, critical care, emergency medicine, trauma surgery, blood banking, dialysis, pediatrics, burn surgery, and mental health (those institutions without in-house expertise should identify other sources for consultation).

Notification mechanisms account for redundancy in case a disaster affects usual means of contact/consultation.

**Task 2**
Expectations of staff, including technical experts and those staffing the clinical care team, are understood prior to an incident, and appropriate activation/notification policies are in place.

#### Notes and Resources
Institution tests notification systems at least annually and ensures that up-to-date contact information is available.
Goal: Enhanced Facility Preparedness
“Out-of-Hospital and Alternate Care Systems” – A Heterogeneous Grouping of Heterogeneous Objects

Alternate care systems
  Hotlines / electronic care
Alternate care sites
  Privately supported
  Publicly supported
  Federally supported
Ambulatory care
Shelter-based care
Non-ambulatory care / hospital overflow
FMS – Federal Medical Stations
“Out-of-Hospital and Alternate Care Systems” – A Heterogeneous Grouping of Heterogeneous Objects

- Alternate care systems
- Clinics
- Private practitioner offices
- Long-term care facilities
- Surgical and Procedure centers
- Home care agencies

“89% of health care is delivered in outpatient settings”
Challenges in Dealing with the “Outpatient Sector”

1. No single governance or command structure
   A. “Herding cats”
2. Heterogeneous in terms of resources, capability and training
Relationship between degree of intervention and number of patients benefiting from care
The Goal is to be Able to Move to the Lower Dashed Line:
General Functions of “Outpatient Sector”

1. Alerting
2. Notification
3. Command
4. Control
5. Communications
6. Coordination
7. Public information
8. Operations
9. Logistics
10. Planning
11. Administration
Functions of Outpatient Care Providers

1. Notification
2. Command, control, communications and coordination
3. Public information
4. Operations
5. Logistics
6. Legal issues
Templates for:
Outpatient Facilities
Long-term Care Facilities
Home Care Organizations
Alternate Care Systems
Out-of-Hospital Providers
Public Engagement on Crisis Standards of Care
Goals and Benefits of Public Engagement

Inform members of the community about the concept of CSC / Raise awareness of need to focus on broader goals of disaster preparedness

Provide policy makers with community perspectives on ethical dilemmas of allocating scarce medical resources

- Have CSC guidelines that reflect community values and priorities

- Guidelines will be more acceptable when implemented

Understanding and acceptance will help to attain best possible results in the event of catastrophic disaster
Model Resource: Tool Kit

Model Process and set of tools for community conversations based on:

- Experience of various jurisdictions Seattle/King County (Washington), Harris County (Texas) and Minnesota
- Two pilots in Boston and Lawrence, Massachusetts

Developed for state and local jurisdictions to tailor and adapt to their needs.
Essential Principles

Policymakers are committed to considering public input
Participants represent the community’s diversity
Participants are provided with information and meaningful opportunity to engage in discussion
Deliberation is a goal in and of itself
  ● Consensus is not essential
  ● Discussion informs development of CSC plans
Input receives consideration in decision making process
  ● Not a “vote”
  ● Final policy decisions will be shared
  ● Basis for differences discussed and explained
Sufficient sponsor support and resources are available
Toolkit for Public Engagement Sessions

- User friendly, practical blueprint for organizing and convening community conversations
- Tools to engage the general public on values that underlie the allocation of scarce resources in response to a disaster
- Provides framework for sponsors to modify to incorporate and reflect local issues
Toolkit: Guidebooks

I. Sponsor: state, regional and local sponsoring public health agencies
   ● Organize/convene conversation
   ● Recruit participants and facilitators

II. Lead Facilitator
   ● Introduce CSC Concepts
   ● Lead large group discussion

III. Table Facilitator
   ● Lead small group discussions and deliberations on scenarios

IV. Note Takers
   ● Record Information
Pilot Community Conversations in Massachusetts

Two public engagement sites:
- Boston: more academic
- Lawrence: more community based

IOM Committee as Sponsor, working with Harvard Medical School

Followed guidance/used materials provided in Report
Agenda

Pre Survey
Presentation on CSC with introductory PowerPoint slides; Q&A
Small-group discussions of scenarios
- Shorter session (Lawrence) used one scenario
- Longer Session (Boston) used two scenarios
Report back to large group
Post Survey
Discussion and Wrap Up
**Survey**

**IMAGINE** that a major disaster or pandemic has struck. Suddenly, there is not enough medical care to give the normal level of treatment to everyone in need.

Do you agree or disagree with the following statements?

<table>
<thead>
<tr>
<th>Statement</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. It is better to save the most lives—even if it means that some people won’t get all of the medical care they would get under normal conditions.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>2. More medical care should go to save younger patients because they have the most years to live.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>3. Health care providers should be allowed to perform services different from their usual duties if that might save more patients.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>4. The sick and injured should be treated “first-come, first-served”—whether or not they are likely to survive.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>5. Firefighters, police, and other first responders should be at the front of the line for medical care because they are important for public safety.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>
When Might We Need Crisis Standards of Care? (From Toolkit PowerPoint)

Extreme Crisis
- Hurricane
- Flu Pandemic
- Earthquake
- Bioterrorism

Scarce Medical Resources
- Blood
- Ventilators
- Drugs
- Vaccines
- Staff
How Are Crisis Standards of Care Different? (From Toolkit PowerPoint)

Focus of *Normal* Care

Individual patient → Community

Focus of *Crisis* Care
Preparing for Disaster

Crisis Standards of Care ("CSC") -- a piece of the puzzle

(From Toolkit PowerPoint)
Scenario 1: Major Earthquake

Early one morning, without warning, a violent earthquake strikes your community. Buildings sway and many crumble to the ground. Water shoots out from broken water-main lines, and electric power seems to be out everywhere.

Highways and main streets are blocked by debris, bridges have collapsed into the river, and railroad tracks and airport runways are badly damaged. Phone service, television, radio, and other means of communications are severely disrupted, adding to the anxiety and concern of people in the community. The number of injured and dead is quickly rising.

It is now 12 hours after the earthquake. Your community’s only hospital is caring not only for earthquake victims, but for patients with other serious health problems unrelated to the earthquake. Critical medical supplies are starting to run out. The health care workers and emergency personnel who were able to report to work are stretched to the limit. Patients are being placed in hallways and cafeterias as space begins to run out. The community is cut off from outside federal and state help and will not be reconnected for some time. The hospital has nowhere to turn.

The hospital has nine critically injured or sick patients, but only enough medical supplies and staff to treat five of them. The four patients who do not receive treatment probably will die before more help arrives—these patients will continue to receive comfort care to minimize their suffering.
Scenario Deliberations

1. Which of the following patients should receive treatment?

| Patient ID | Age | Chance of Survival with Treatment | Rank  
1 = Treat First  
9 = Treat Last |
<table>
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</thead>
<tbody>
<tr>
<td>A</td>
<td>2</td>
<td>Low (10-30%)</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>35</td>
<td>Low (10-30%)</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>80</td>
<td>Low (10-30%)</td>
<td></td>
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<tr>
<td>D</td>
<td>11</td>
<td>Medium (40-60%)</td>
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<tr>
<td>E</td>
<td>55</td>
<td>Medium (40-60%)</td>
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<td>H</td>
<td>25</td>
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<tr>
<td>I</td>
<td>85</td>
<td>High (70-90%)</td>
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</tbody>
</table>
Take Home Message: Public Engagement works and should be embraced, not feared!

- Community participants understood concepts and were thoughtful and engaged
- Discussions provided valuable information for policy development and next steps in drafting CSC Guidelines
- Individuals appreciated the opportunity to hear about and discuss the issues
- IOM Report provides materials necessary for successful public engagement
What are the challenges ahead?

• Return to the “same-old-same-old”
• Denial is not just a river in Egypt
• Getting the attention of the different players and having them engage in joint planning:
  • State and Local governments
  • State/Local health departments
  • EMS
  • Hospitals
  • Alternate care systems
  • Providers, public and private
  • Public engagement
Milestones for Planning and Implementation for Crisis Standards of Care

1. Establish a State Disaster Medical Advisory Committee.

2. Ensure the development of a legal framework for CSC implementation.

3. Promote understanding of the disaster response framework among elected officials and senior (cabinet-level) state and local government leadership.

4. Develop a state health and medical approach to CSC planning that can be adopted at the regional/local level by existing health care coalitions, emergency response systems (including the Regional Disaster Medical Advisory Committee), and health care providers.

5. Engage health care providers and professional associations by increasing their awareness and understanding of the importance and development of a CSC framework.
Milestones for Planning and Implementation for Crisis Standards of Care

6. Encourage participation of the outpatient medical community in planning.

7. Ensure that local and state CSC plans include clear provisions that permit adaptation of EMS systems under disaster response conditions.

8. Develop and conduct public community engagement sessions on the issue of CSC.

9. Support surge capacity and capability planning for health care facilities and the health care and public health systems.

10. Plan for an alternate care system capability.

11. Support scarce resource planning by the RDMAC (if developed) for health care facilities and the health care system.
Milestones for Planning and Implementation for Crisis Standards of Care

12. Incorporate crisis/emergency risk communication strategies into CSC plans.

13. Exercise CSC plans at the local/regional and interstate levels.

14. Refine plans based on information obtained through provider engagement, public/community engagement and exercises, and real-life events.

15. Develop a process for continuous assessment of disaster response capabilities.
Crisis Standards of Care: A Systems Framework for Catastrophic Disaster Response

Downloadable from: http://www.nap.edu/catalog.php?record_id=13351
Crisis Standards of Care: A Toolkit for Indicators and Triggers

Indicators: Measurements or predictors of change in demand for health care services or availability of resources.

Triggers: Decision points about adaptations to health care service delivery.

Tactics: Actions taken based upon the triggers.

Downloadable from: http://www.nap.edu/catalog.php?record_id=18338
# Sample Indicators, Triggers & Tactics

## TABLE 2-1
Sample Indicators, Triggers, and Tactics by Discipline

<table>
<thead>
<tr>
<th>Discipline</th>
<th>Indicator</th>
<th>Trigger</th>
<th>Tactic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emergency management</td>
<td>National Weather Service (NWS) watches/warnings</td>
<td>NWS forecasts Category 4 hurricane landfall in 96 hours</td>
<td>Issue evacuation/shelter orders, determine likely impact, support hospital evacuations with transportation resources, risk communication to public about event impact</td>
</tr>
<tr>
<td>Public health</td>
<td>Epidemiology information</td>
<td>Predicted cases exceed epidemic threshold</td>
<td>Risk communication, consideration of need for medical countermeasures/ alternate care site planning, establish situational awareness and coordination with EMS/hospitals/ long-term care facilities</td>
</tr>
<tr>
<td>Emergency medical services (EMS)</td>
<td>911 call</td>
<td>X casualties</td>
<td>Automatic assignment of X ambulances, supervisor, assignment of incident-specific radio talk group</td>
</tr>
<tr>
<td>Inpatient</td>
<td>Emergency department (ED) wait times</td>
<td>ED wait times exceed X hours</td>
<td>Increase staffing, diversion of patients to clinics/urgent care, activate inpatient plans to rapidly accommodate pending admissions</td>
</tr>
<tr>
<td>Outpatient</td>
<td>Demand forecasting/epidemiology information</td>
<td>Unable to accommodate number of requests for appointments/service</td>
<td>Expand hours and clinic staffing, prioritize home care service provision, increase phone support</td>
</tr>
<tr>
<td>Behavioral health</td>
<td>Crisis hotline call volume</td>
<td>Unable to accommodate call volume</td>
<td>Activate additional mental health hotline resources, “immunization” via risk communication, implement psychological first aid (PFA) techniques and risk assessment screening in affected areas</td>
</tr>
</tbody>
</table>
Toolkits For:

• Emergency Management
• Public Health
• Behavioral Health
• Emergency Medical Services
• Hospital and Acute Care
• Out-of-Hospital Care

Discussion and decision-support tool to facilitate the development of indicators and triggers that help guide decision making during a disaster
Hospital Roles and Responsibilities: Development of response plan to include:

- Installation and maintenance of an incident management system (such as HICS)
- Response communication and coordination capabilities with key stakeholders
- Appropriate space, staff and supplies
- Specific planning for scarce resource planning
Hospital Discussion Participants:

- Hospital administration
- Hospital emergency management
- Chief medical officer
- Legal counsel
- Subject matter experts (e.g., infection control for the pandemic scenario or trauma program manager for the earthquake scenario, etc)
- Healthcare coalition members
Key Questions: Slow-Onset Scenario

1. What indicator data are available (regional bed utilization, etc)?
2. Who monitors and interprets these data?
3. How does the facility interact with its regional health care partners?
4. What are the crisis care triggers for the institution?
5. Etc.
Key Questions: No-Notice Scenario

1. What alerts/situation info does the facility receive from outside agencies?

2. What internal info is available for indicator/trigger thresholds (e.g. bed capacity, staffing, etc)

3. What specific thresholds can be set to invoke actions (e.g. disaster plan activation, staff call-back, etc)

4. What specific indicators and triggers are needed for specialty care (e.g. burn, peds, etc)

5. Etc.
Decision Support Tool: To be completed

<table>
<thead>
<tr>
<th>Indicator Category</th>
<th>Contingency</th>
<th>Crisis</th>
<th>Return Toward Conventional</th>
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<td>Surveillance data</td>
<td>Indicators:</td>
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<td>Tactics:</td>
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</table>
Example: Supplies

Crisis Indicators:

• Coalition lack of available ventilators

• Anesthesia machines and other adaptive ventilation strategies in use

• Coalition/vendor lack of available critical supplies/medications
Example: Supplies

Crisis Triggers:

• Inadequate ventilators (or other life-sustaining technology) for all patients that require them

• Inadequate supplies of medications or supplies that cannot be effectively conserved or substituted for without risk of disability or death without treatment
Example: Supplies

Crisis Tactics:

• Implement triage team/clinical care committee process

• Determine bridging therapies (bag-valve ventilation, etc.)

• Coordinate care /triage policies with coalition facilities (in no-notice event, this may not be possible)

• Triage access to live-saving resources (ventilators, blood products, specific medications) and reallocate as required to meet demand according to state/regional consensus recommendations.

• Restrict medications to select indications

• Restrict PPE to high-risk exposures (and/or permit PPE reuse)
Questions / Comments?