Crisis Standards of Care: A Toolkit for Indicators and Triggers

ISBN
978-0-309-28552-0

216 pages
8 1/4 x 10
PAPERBACK (2013)

Dan Hanfling, John Hick, and Clare Stroud, Editors; Committee on Crisis Standards of Care: A Toolkit for indicators and Triggers; Board on Health Sciences Policy; Institute of Medicine

7: Toolkit Part 2: Emergency Medical Services

INTRODUCTION

This chapter presents a discussion and decision-support tool to facilitate the development of indicators and triggers that help guide emergency medical services (EMS) decision making during a disaster. Because integrated planning across the emergency response system is critical for a coordinated response, it is important to first read the introduction to the toolkit and materials relevant to the entire emergency response system in Chapter 3. Reviewing the toolkit chapters focused on other stakeholders also would be helpful.

Roles and Responsibilities

The role and expanse of responsibilities of the EMS professional go far beyond prehospital patient care delivery and transport. Emergency medical dispatch (EMD) plays the critical role as the "gatekeeper" of the resources and assets that must be appropriately dispatched and distributed for a successful emergency response. Once on the scene, the EMS provider is the direct observant of the scene of the incident, if an accident, or of the patient's residence. It is often the EMS provider who notes that a patient may not have any or insufficient resources within his or her residence to maintain independence or personal safety. Therefore, an important message to include in any crisis planning is that all personnel, regardless of years of experience or expertise, should be (and feel) empowered to report any unusual events, observations on the scene, or surge in patient complaints or threats to an administrative avenue that is operational and responsive at all times.

The role of the EMS medical director is very important. This individual is a physician with a solid foundation of knowledge and expertise in emergency medical dispatch, EMS, emergency medicine, public health, triage, and appropriate allocation of resources who can serve in a leading role during an emergency or catastrophic incident. The continuous partnership of the EMS medical director with the EMS agency supervisor as a unified team during all aspects of the response cannot be understated.

Each state has the statutory authority and responsibility to regulate EMS within its borders. In addition, each state has the authority over the certification or licensure of their EMS providers, EMS scope of practice, and EMS provider titles. For the delivery of EMS services, some states have mandatory statewide protocols while others permit the use of variable regional or local protocols. During the creation of crisis standards of care (CSC) plans, the state EMS offices and the National Association of State EMS Officials

(NASEMSO), the lead national organization for state EMS offices, are invaluable assets. They are the best sources of EMS-specific information regarding individual state EMS system structure and state EMS administrative, legislative, and operational requirements and practices. During routine and evolving crises that will not require a federal response or gubernatorial declaration of emergency, the state EMS offices and NASEMSO are assets of knowledge and support. Special attention to neighboring state EMS systems must be consistently included at all levels of CSC because emergency dispatch and response, prehospital care delivery, and patient transport occur routinely across state lines on a daily basis during conventional levels of care in many jurisdictions.

Additional discussion about EMS roles and responsibilities in planning for and implementing CSC is available in the Institute of Medicine's (IOM's) 2012 report *Crisis Standards of Care: A Systems Framework for Catastrophic Disaster Response*. This report also includes planning and implementation templates that outline core functions and tasks.

Key Considerations for EMS

Disaster planning has been a core component for the EMS community for many years. As a result, EMS providers tend to have integrated adaptation skills in their routine practice. The concept of CSC, with the three stages of conventional, contingency, and crisis levels, is a relatively new concept for many in the health care community, including EMS providers. In the past, the focus has been on crisis planning rather than maximizing crucial tactics at the conventional and contingency phases to avoid entering a state of crisis.

This toolkit is designed to serve as a facilitator of creative, flexible, and expansive thought during the development of processes and protocols for the EMS disaster planning team. CSC require a shift from the former culture and mindset of disaster planning of a binary response (disaster or not) to a continuum of services that can be provided based on demand, with adaptations at each step to allow the system to bend, but not break. The EMS agency should craft its plan in a manner that best incorporates and coordinates the available local, regional, state, and federal resources into a framework that serves the jurisdiction. A disaster response team should have and be able to execute a plan to manage a response to victims without an adequate supply of medical resources. Such a team should have and be able to execute a plan to retain, secure, and maintain the EMS workforce instead of writing a plan where the primary focus is on managing a disaster without staffing.

Significant alterations in response procedures and allocation of resources may be required at the contingency level, with the primary goal of avoiding a transition into the crisis level. Important elements that must accompany these procedures include training and disaster exercises that actively include emergency medical dispatch, EMS, and EMS medical direction; community engagement and education; repeated and frequent dissemination of timely and accurate information to the community and the Joint Information Center; and appropriate regulatory relief and liability protection for the parameters included in both contingency and CSC. Ideally, these groups should be included in all disaster training exercises along with organizations in the private and public sectors and any out-of-state agencies that may be dispatched for mutual aid.

The true test of the fortitude of the EMD and EMS response system is to stress it beyond its capacity. The most valuable disaster exercises will tax this system beyond its limits and demonstrate how well the participants identify indicators, recognize critical triggers, and develop and implement adaptive and effec-

tive tactics. In the creation of disaster exercises as well as in conventional operations, it is beneficial for an EMS system to break down the barriers between public and private EMS agencies and cultivate symbiotic partnerships between these organizations. As a disaster transitions through the conventional, contingency, and crisis plans, there must also be triggers and indicators that signal the incident commander that the crisis is deescalating and potentially approaching resolution (though in long-term events, a return to conventional status may be only temporary). In partnership and close liaison with the emergency management system and other key emergency response system stakeholders, those with nimble minds who can create a path less trodden and use reduced resources effectively will be successful.

DISCUSSION AND DECISION-SUPPORT TOOL

Building on the scenarios and overarching key questions presented in Chapter 3, this tool contains additional questions to help participants drill down on the key issues and details for EMS. It also contains a chart that provides example EMS indicators, triggers, and tactics, and a blank chart for participants to complete. The scenarios, questions, and example chart are intended to provoke discussion that will help participants fill in the blank chart for their own agency.[1] Participants may choose to complete a single, general blank chart, or one each for various scenarios from their Hazard Vulnerability Analysis.

Discussion Participants

Suggested participants for a discussion focused on EMS are listed below.

- EMS agencies;
- EMS medical directors;
- Emergency medical dispatch centers;
- Call centers and medical resource control centers;
- Public and private prehospital transport agencies (including first response agencies);
- Local hospitals and long-term care facilities;
- Local public health agencies;[2]
- Local emergency management agencies;
- Mutual aid network participants;
- Local emergency planning committees;
- Public and private evacuation transportation partners;
- Local and regional medical supply agencies;
- Law enforcement agencies;
- Local or regional legal representative; and
- State EMS office liaison.

[1] The blank table for participants to complete can be downloaded from the project's website: www.iom.edu/crisisstandards.

[2] EMS frequently works with people with serious and persistent mental illness and substance abuse, even outside of disaster situations. Depending on local and state structures, behavioral health officials may be located in different agencies: for example, public health or health and human services. It will be important to engage them in the deliberative process, and to include consideration of behavioral health issues (see Chapter 6 for more details).

Key Emergency Response System Stakeholders

Suggested stakeholders for the EMS-focused discussion are listed below. These entities should be involved at some point in the deliberation process, although they may not participate in initial discussions because of the need to keep the group at a manageable size.

- State EMS offices;
- State emergency management agencies;
- State medical disaster committee;
- State EMS/trauma committees;
- State public health agencies;
- State hospital and long-term care associations;
- State trauma offices;
- State health and human services agencies;
- State law enforcement agencies;
- Regional and local EMS advisory councils;
- Regional and local health care coalitions;
- Regional and local trauma advisory councils;
- State and local disaster response network members; and
- Regional and local law enforcement agencies.

Key Questions: Slow-Onset Scenario

The questions below are focused on the slow-onset influenza pandemic scenario presented in Chapter 3:[3]

1. What information from dispatch centers would drive actions on this event? How is that information shared?
2. What information/trigger would alert EMS to take specific actions such as donning a higher level of personal protective equipment (PPE)?
3. What information from EMS agencies would be shared with local public health and when? How is that information conveyed?
4. What information from the hospitals or skilled nursing facilities regarding this type of event would determine the EMS system's actions? How is that information communicated to EMS?
5. What information is needed from public health regarding this type of event? How is that information obtained?
6. What guidelines and measures are in place to protect EMS personnel from becoming ill?
7. What actions can be taken if EMS agencies are unable to staff ambulances appropriately according to their usual model?

[3] These questions are provided to help start discussion; additional important questions may arise during the course of discussion. The questions are aimed at raising issues related to indicators and triggers, and are not comprehensive of all important questions related to disaster preparedness and response.

8. What precautions would be initiated to provide protection (physical [including PPE], mental, behavioral, etc.) to EMS personnel during this event?
9. What just-in-time training could be implemented when medications or equipment become scarce? How will these programs, along with the associated protocols, be disseminated and implemented?
10. What criteria would be used in the treatment of patients in this type of event?
11. What process should be implemented to change response and transport protocols within the organization and with state licensing agencies? What measures can be implemented if EMS agencies cannot transport patients to a health care organization?
12. How will EMS agencies respond to or triage calls if they have limited or no ambulances to transport patients?
13. What information needs to be known in order to return to contingency or conventional care?
14. What expanded role can EMS personnel provide in this type of event (EMS role at alternate care sites, vaccination sites, etc.)? Are protections in place for this expanded role? Are providers prepared to take on these responsibilities?
15. What should an EMS agency do if they have more patients to treat than they can manage?
16. At what point should an EMS agency go back to medical direction for additional medical oversight or changes to standard operating procedures (SOPs)? For example, at what point should ambulance staffing patterns be altered and normal scopes of practice expanded?

Key Questions: No-Notice Scenario

The questions below are focused on the no-notice earthquake scenario presented in Chapter 3:

1. What information does dispatch need to know to request mutual aid?
2. What information does EMS need to know from hospitals or other health care organizations? How will this information be communicated to EMS?
3. What information is needed from public health or emergency management that would drive actions on this event?
4. What information is needed to activate the EMS agency's mass casualty plan and request additional medical resources?
5. What information is needed and how does EMS incident command identify a potential need for a declaration of emergency for a mass casualty incident?
6. What should the EMS agency do if they have more patients than they can transport?
7. What should the EMS agency do if they have no more personnel to assist with triage and treatment?
8. When/how will existing trauma field triage criteria and associated destination protocols be modified or abandoned?
9. What just-in-time training could be implemented when medications or equipment become scarce? How will these programs, along with the associated protocols, be disseminated and implemented?
10. How will the EMS agency manage specialty care patients (e.g., burn, contaminated, pediatrics), particularly when usual referral centers are unavailable or unreachable?

11. What information (or permission) is needed to activate CSC plans?
12. How are incoming staff, equipment, and patient transport resources coordinated between jurisdictions?
13. What system status management information is available to determine indicators and triggers and how are they communicated to leadership and other emergency response systems organizations?
14. What triggers at the state level exist to provide regulatory and liability protection as well as additional resources? How does the EMS agency communicate needs and request these resources?

Decision-Support Tool: Example Table

The indicators, triggers, and tactics shown in Table 7-1 are examples to help promote discussion and provide a sense of the level of detail and concreteness that is needed to develop useful indicators and triggers for a specific organization/agency/jurisdiction; they are not intended to be exhaustive or universally applicable. Prompted by discussion of the key questions above, discussion participants should fill out a blank table, focusing on key system indicators and triggers that will drive actions in their own organizations, agencies, and jurisdictions. As a reminder: *indicators* are measures or predictors of changes in demand and/or resource availability; *triggers* are decision points (refer back to the toolkit introduction [Chapter 3] for key definitions and concepts).

The example triggers shown in Table 7-1 below mainly are ones in which a "bright line" distinguishes functionally different levels of care (conventional, contingency, crisis). Because of the nature of this type of trigger, they can be described more concretely and can be included in a bulleted list. It is important to recognize, however, that expert analysis of one or more indicators may also trigger implementation of key response plans, actions, and tactics. This may be particularly true in a slow-onset scenario. In all cases, but particularly in the absence of "bright lines," decisions may need to be made to *anticipate* upcoming problems and the implementation of tactics and to *lean forward* by implementing certain tactics before reaching the bright line or when no such line exists. These decision points vary according to the situation and are based on analysis of multiple inputs, recommendations, and, in certain circumstances, previous experience. Discussions about these tables should cover *how* such decisions would be made, even if the specifics cannot be included in a bulleted list in advance.

TABLE 7-1
Example Emergency Medical Services (EMS) Indicators, Triggers, and Tactics for Transitions Along the Continuum of Care

Indicator Category	Contingency	Crisis	Return Toward Conventional
Scope of the event	Minor or major disaster	Catastrophic	Approaching resolution
Surveillance data	**Indicators:** • Increased patient encounters by EMS • Increased emergency department and/or hospital census • Reports of increased cases of influenza • Reports of an earthquake with potential of additional aftershocks **Triggers:** • Significantly elevated number of dispatch requests • Significantly increased patient care encounters with similar signs and symptoms or high patient acuity • Significantly increased data registry entries from state or regional electronic prehospital patient care record systems **Tactics:** • Advise local health officials (or, as applicable, base station or online medical direction) of the observed increase in activity or increased incidence of patients with similar signs and symptoms • Establish incident command for EMS and advise the emergency care system stakeholders of this action command • Provide incident command with frequent reports and ongoing trends using surveillance data • Engage regional and state surveillance systems to follow trends and expanse of the mass casualty incident or pandemic • Engage mutual aid partners as required	**Indicators:** • Patient care demands exceed the available EMS resources, including mutual aid • Patient care demands exceed the available hospital resources • Confirmation of increased virulence of the strain of influenza • Surveillance data are impacted due to overwhelmed health care providers, public health, or collapse of data entry systems • The incidence of illness and injury continues to escalate despite mitigation measures **Crisis Triggers:** • Multiple hospitals closed to EMS • Mutual aid partners not able to answer calls involving potential life threats **Tactics:** • Maximize alternative avenues of data collection and submission (verbal, paper, or estimated reports) • Continue to advise local health officials (or, as applicable, base station or online medical direction) of the observed increase in activity or increased incidence of patients with similar signs and symptoms • Work with mutual aid agencies to revise and/or implement call triage	**Indicators:** • Stabilization or decrease in patient encounters by EMS • Stabilization or decrease in emergency department and/or hospital census • Stabilization or decrease in the reports of cases of influenza • Decreasing frequency of earthquake aftershocks **Triggers:** • Stabilization or decrease in the number of dispatch requests • Stabilization or decrease in calls with similar signs and symptoms or high patient acuity calls **Tactics:** • Monitor the surveillance data for resurgence or continued mitigation • Continue to advise local health officials (or, as applicable, base station or online medical direction) of the observed increase in activity or increased incidence of patients with similar signs and symptoms

continued

TABLE 7-1
Continued

Indicator Category	Contingency	Crisis	Return Toward Conventional
Community and communications infrastructure	**Indicators:** • Compromised communications (911, public safety) systems • Reports of widespread road or structural damage • Increased calls or ambulatory presentation of patients to EMS agencies seeking medical advice or treatment • Inaccurate information from unreliable sources circulating within the community **Triggers:** • >20% increase in emergency medical dispatch or medical advice hotlines • An increase in rumors and inaccurate information within the lay population, media, and social networking sites **Tactics:** • Initiate community education regarding selective emergency medical dispatch (EMD) and EMS triage and transport measures • Engage with media outlets to disseminate information on mitigation measures • Work with emergency management and crews in the field to obtain situational awareness regarding access and damage reports • Consider partnering to establish nurse call triage lines to mitigate requests for EMS transport	**Indicators:** • Emergency medical dispatch overwhelmed by call volumes and unable to answer all calls • 911 system compromised • Media reports that incite increased anxiety • Operational or structural collapse of the communication centers • Inaccurate information is in the forefront **Crisis Triggers:** • Inability of high-acuity patients to access the emergency response system • Patient tracking mechanisms and systems are overwhelmed **Tactics:** • Use prerecorded messaging to filter calls that require direct emergency medical dispatch staff contact • Maximize frequent use of emergency broadcast system and media outlets • Implement call triage models to target highest priority calls for response	**Indicators:** • Stabilization or decrease in calls to emergency medical dispatch • Stabilization or decrease in calls to medical advice hotlines • Communication systems, networks, and physical infrastructure returning to baseline functional state **Triggers:** • The number of requests to emergency medical dispatch and for EMS are returning to baseline levels **Tactics:** • Continue to provide the community with information regarding the status of the event • Continue to educate and encourage the community to engage in mitigation measures • Revise dispatch and transport protocols to normalize operations
Staff ***(Refer also to the worker functional capacity table in Toolkit Part 1 [Table 3-1])***	**Indicators:** • Members of the EMD and EMS workforce unable to report for duty due to impassable roads, incapacitated personal vehicles, or other direct effects • Members of the EMD and EMS workforce within the at-risk population for influenza • Members of the EMD and EMS workforce unable to report for duty due to illness, injury, or physical entrapment in residences	**Indicators:** • Overwhelming number of patient with insufficient staff to meet the demand for triage, treatment, and transport • Significant portion of the emergency medical dispatch and EMS workforce is sustaining physical fatigue due to extended work shifts and incident stress • Significant number of the EMD and EMS workforce are affected as disaster victims or incapacitated by the disaster and are unavailable to respond	**Indicators:** • Approaching normal baseline levels of staffing. • Return to normal shift level and staffing • Some emergency medical dispatch and EMS personnel may elect to remain off duty due to family obligations **Triggers:** • The number of emergency medical dispatch and EMS personnel reporting for duty is starting to stabilize • Recovery of EMS personnel from illness and/or injury

Triggers:
- EMS crews are at or approaching minimal staffing
- Loss of 10% or more of the workforce

Tactics:
- Use mutual aid staffing resources
- Prioritize dispatch calls according to potential threat to life, placing non–life threatening calls on a pending status (requires medically trained emergency medical dispatch)
- Reduce staffing requirement from two advanced life support (ALS) providers to one ALS and one basic life support (BLS) provider
- Change ambulance assignments according to closest available units instead of BLS/ALS capability
- Activate non-EMS dispatch protocols in emergency medical dispatch centers and advise patients with minor injuries or illnesses to use their own transportation
- Activate non-transport protocols and disaster triage guidelines for EMS agencies
- Use 211 nurse call centers for triage
- Respond to critical or urgent calls followed by batched transport of stable patients to health care facilities
- Encourage mitigation measures, e.g., mass vaccination, within EMD and EMS workforce
- Transport essential EMS and emergency medical dispatch workers to the workplace via National Guard or other agency
- Provide support to families of EMS and emergency medical dispatch personnel to facilitate the maintenance of the workforce
- Change shift length
- EMS and medical personnel are becoming victims of criminal activity by individuals seeking medications, medical supplies, vaccinations, and expedited treatment or transport

Crisis Triggers:
- Unable to maintain staffing for EMS units
- Staff overwhelmed by number of patients who need care
- Mutual aid staffing resources have been exhausted

Tactics:
- Direct emergency medical dispatch to decline response to calls without evidence of threat to life (requires medically trained EMD)
- Mandatory use of disaster triage guidelines
- Direct EMS to decline transport of assessed patients without significant injury or illness (upon guidance from EMS medical direction)
- Limit resuscitation attempts to witnessed cardiac arrests
- Reduce staffing for ambulances to one EMS provider (upon guidance from EMS medical direction)
- Request additional EMS units through the local emergency operations center (EOC)
- Use public and private mass transportation resources for patients with minor injuries or illnesses
- Integrate transportation resources from out of state and through the Emergency Management Assistance Compact or National Disaster Medical System
- Secure federal, state, regional, and local EMS staffing resources and non-EMS staffing resources (e.g., National Guard)
- Provide appropriate security for EMS crews

Tactics:
- Direct emergency medical dispatch to use initial automated answering systems during spikes of high call volume for medical emergencies, but revert to answering all calls when able
- Initiate a gradual return to normal triage, patient treatment, and transport guidelines
- Initiate a gradual transition to normal staffing levels, work shifts, and sleep cycles
- Initiate plan for reduction and relief of mutual aid resources
- Continue to encourage or require mitigation measures (personal protective equipment [PPE], hand washing, vaccination, etc.)
- Encourage timely engagement in stress management and personal resilience resources

continued

TABLE 7-1
Continued

Indicator Category	Contingency	Crisis	Return Toward Conventional
Space/infrastructure	**Indicators:** • Evacuation routes are becoming crowded • The general public is unable to access timely care in clinics or emergency department • Multiple emergency department and emergency care centers are going on diversion due to overwhelmed capacity • Roads and bridges have collapsed or become structurally unstable **Triggers:** • More than 20-30% of the emergency departments, emergency care centers, and public health clinics have requested additional medical staff or are on diversion • There is a trend within the general public electing not to comply with emergency declaration mitigation directives (e.g., shelter in place, evacuation, driving restrictions) **Tactics:** • Activate and open all alternative care sites, and support these with EMS resources as possible • Activate alternate transport destination and non-transport protocols for emergency medical dispatch and EMS personnel • Encourage the general public to comply with emergency declaration directives, engaging law enforcement assistance if necessary	**Indicators:** • Overwhelming number of patients exceeds the ambulances available • Transport destinations are overwhelmed and do not have the capacity to accept additional patients • Law enforcement resources are overwhelmed or limited • Evacuation routes are no longer passable • The virulence of a biologic agent has increased compared to prior projections • Structural damage to the physical plant of emergency medical dispatch, EMS, or EOC that hampers or incapacitates their operational status • Structural damage to the physical plant of health care facilities that hampers or incapacitates their operational status • Air ambulances are grounded due to weather **Crisis Triggers:** • No available ground ambulances for transport • Mutual aid for additional vehicles is exhausted **Tactics:** • Establish casualty collection points • Use treat and release protocols • Universal use of non-EMS dispatch and non-transport protocols • Use mass transport vehicles (e.g., buses) to transport patients with minor injuries • Use disaster triage guidelines • Designate ambulance transport solely for moderately/seriously ill or injured patients • Use alternative vehicles (e.g., aircraft if weather conditions permit, all terrain vehicles, motorcycles, bicycles, watercraft) to access moderately or severely ill or injured patients when routes of travel that are conducive to ambulances are no longer passable	**Indicators:** • The demand for available ambulances with patient need is better aligned • Roadways are beginning to have reduced volume • Emergency departments and emergency care centers are beginning to accept patients • Structural damage to transport destinations is no longer affecting operational status **Triggers:** • A reduction in health care facilities that are on diversion • Reliable routes of transport have been established for emergency and public safety vehicles **Tactics:** • Continue operational support of alternate transport sites until emergency department and emergency care center report improved flow of inpatients and outpatients • Initiate a gradual transition to conventional transport destinations

Supplies	**Indicators:** • EMS agencies report increased use of PPE, medical supplies, medications, or airway management equipment • Manufacturers of PPE, medical supplies, vaccines, medications, or ventilators report decreased stock available • Fuel shortages reported **Triggers:** • The available PPE is less than what is needed for the EMS workforce • The use of medical supplies, medications, vaccines, and antidotes begins to exceed their replacement **Tactics:** • Conservation of PPE • Conservation of supplies • Provide medications and vaccinations to designated at-risk populations • Determine alternate vendors and sources of supplies	**Indicators:** • EMS reports inadequate or depleted supply of PPE, medical supplies, medications, or airway management equipment • Manufacturers of PPE, medical supplies, vaccines, medications, or ventilators report insufficient or depleted stock • Manufacturers of disaster supplies and recovery equipment report factory closures and/or halted production due to loss of workforce **Crisis Triggers:** • PPE is no longer available • Vaccinations, medications, or antidotes are depleted to the point that equivalent treatment cannot be provided • Hospitals can no longer provide supplies or medications to restock ambulances **Tactics:** • Activate crisis standards of care prehospital patient care protocols • Secure federal, state, regional, and local emergency response assets	**Indicators:** • Demand for PPE for EMS personnel is subsiding • Demand for medical supplies or airway management equipment is reduced • Manufacturers of PPE, medical supplies, medications, or airway management equipment report improving product availability **Triggers:** • Incident command is receiving reduced requests for additional PPE and medical supplies from EMS personnel • Emergency departments, emergency care facilities, and hospitals have reduced requests for medications, antidotes, vaccinations, and ventilators • Manufacturers of disaster supplies and recovery equipment report a return to production **Tactics:** • Assess the current status of the supplies of medications, medical equipment, and PPE • Request a limited volume of PPE and supplies to prepare for a potential resurgence and to begin replenishing the normal stock of supplies • Adjust supply allocation guidance toward normal

Decision-Support Tool: Blank Table to Be Completed

Prompted by discussion of the key questions above, participants should fill out this blank table (or multiple tables for different scenarios) with key system indicators and triggers that will drive actions in their own organizations, agencies, and jurisdictions.[4]

Reminders:

- *Indicators* are measures or predictors of changes in demand and/or resource availability; *triggers* are decision points.
- The key questions were designed to facilitate discussion—customized for EMS—about the following four steps to consider when developing indicators and triggers for a specific organization/agency/jurisdiction: (1) identify key response strategies and actions, (2) identify and examine potential indicators, (3) determine trigger points, and (4) determine tactics.
- Discussions about triggers should include (a) triggers for which a "bright line" can be described, and (b) *how* expert decisions to implement tactics would be made using one or more indicators for which no bright line exists. Discussions should consider the benefits of *anticipating* the implementation of tactics, and of *leaning forward* to implement certain tactics in advance of a bright line or when no such line exists.
- The example table may be consulted to promote discussion and to provide a sense of the level of detail and concreteness that is needed to develop useful indicators and triggers for a specific organization/agency/jurisdiction.
- This table is intended to frame discussions and create awareness of information, policy sources, and issues at the agency level to share with other stakeholders. Areas of uncertainty should be noted and clarified with partners.
- Refer back to the toolkit introduction (Chapter 3) for key definitions and concepts.

[4] The blank table for participants to complete can be downloaded from the project's website: www.iom.edu/crisisstandards.

Scope and Event Type: _____

Indicator Category	Contingency	Crisis	Return Toward Conventional
Surveillance data	Indicators: Triggers: Tactics:	Indicators: Crisis triggers: Tactics:	Indicators: Triggers: Tactics:
Communications and community infrastructure	Indicators: Triggers: Tactics:	Indicators: Crisis triggers: Tactics:	Indicators: Triggers: Tactics:
Staff	Indicators: Triggers: Tactics:	Indicators: Crisis triggers: Tactics:	Indicators: Triggers: Tactics:
Space/infrastructure	Indicators: Triggers: Tactics:	Indicators: Crisis triggers: Tactics:	Indicators: Triggers: Tactics:
Supplies	Indicators: Triggers: Tactics:	Indicators: Crisis triggers: Tactics:	Indicators: Triggers: Tactics:
Other categories	Indicators: Triggers: Tactics:	Indicators: Crisis triggers: Tactics:	Indicators: Triggers: Tactics:

REFERENCE

IOM (Institute of Medicine). 2012. *Crisis standards of care: A systems framework for catastrophic disaster response.* Washington, DC: The National Academies Press. http://www.nap.edu/openbook.php?record_id=13351 (accessed April 3, 2013).