Crisis Standards of Care – Emergency Medical Services  
A Guidance Document for the State of Nebraska

This guidance is adapted from the Colorado Department of Public Health & Environment Crisis Standards of Care Emergency Medical Services

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Introduction

Emergency Medical Services (EMS) are an essential part of the continuum of health care that is often initiated by a call to a public safety answering point or dispatch center. The need for emergency medical care is determined by trained personnel who receive such a call and dispatch appropriate EMS responders to triage, treat, and transport the patient(s) to an appropriate health care facility, where definitive care is provided. This continuum of care is provided through a coordinated and integrated emergency health care system with trained and equipped personnel at dispatch centers, ambulance agencies, hospitals, and specialty care centers (trauma, burn, pediatrics).

This emergency health care system will be stressed to its limits during a mass casualty incident, pandemic or other multiple patient incident, requiring all components of the system to implement contingency measures to manage the surge in medical demand. CSC will, on necessity, involve the EMS system and require modifications to the usual procedures and protocol utilized.

Ethical Considerations

Standards of care should adhere to core ethical principles, including fairness, duty to care, duty to steward resources, transparency in decision-making, consistency, proportionality, and accountability.

When resource scarcity reaches crisis levels, providers are ethically justified to use available resources to sustain life and well-being to the greatest extent possible for the greatest number possible.

EMS medical directors should synthesize relevant ethical considerations into clear guidance for EMS agencies and clinicians on resource allocation and clinical decision-making in the context of crisis standards of care.

1 Modified from: National Academy of Sciences, Crisis Standards of Care: A Systems Framework for Catastrophic Disaster Response

Publication date: 1/5/2021
DEPENDING UPON THE RESOURCES AVAILABLE IN A GIVEN COMMUNITY AND EMS RESPONSE SYSTEM, SOME OR ALL OF THE FOLLOWING MEASURES MAY BE IMPLEMENTED:

Public Safety Answering Points (PSAP) and Call Centers (performing emergency medical dispatch (EMD))

- During a pandemic, perform caller inquiries/focused screening on callers for symptoms related to the infecting agent, as approved by the system medical director
  - The query process should never supersede the provision of pre-arrival instructions to the caller when immediate lifesaving interventions (e.g., CPR) are indicated.
  - COVID-19:
    - Identify symptoms of fever with cough, sore throat, shortness of breath, diarrhea or loss of taste and/or smell.
    - Ask patient if they are under investigation or have tested positive for COVID-19.
- Screening for suspected highly infectious pathogens varies significantly depending upon the high-risk agent involved and often involves questioning patients about recent travel to endemic areas and presenting signs and symptoms.
  - If there is widespread community transmission of disease in the area served by the PSAP, travel questioning may be deferred.
  - The incubation timeframe for these conditions varies:
    - 14 days for Middle East Respiratory Syndrome (MERS),
    - 21 days for Ebola Virus Disease (EVD)
    - 14-21 days for COVID-19
- Utilize a triage screening algorithm to ensure that response capability is preserved for severely ill or injured patients and protocols developed to identify patients for delayed, alternate or non-response, including but not limited to nurse advice lines, telehealth, or mobile integrated health services.
  - This is a local decision dependent on the systems and policies in the community and the note should be removed once the infectious period has passed.
- Information obtained suggesting an infectious disease process should be given to dispatchers to relay to responding agencies.

Non-EMD PSAPs:

- When information is volunteered by the caller indicating the patient may have a fever, cough, sore throat, shortness of breath, diarrhea, or loss of taste and/or smell advise responders to don PPE. Please refer to appendix A.
  - This should be done in accordance with local PSAP policies and should not delay EMS dispatch.

Dispatch Centers:

- Send only essential resources to calls for assistance or consider staging additional resources near-by but away from the scene.
• Consider restricting assignment to ambulance only if no life-threatening symptoms (e.g. chest pain, difficulty breathing, altered mental status) present in order to decrease first responder exposure.

• Adjust resource assignments in consultation with the medical director.

• Auto-answer and caller deferral to information/prescribing/nurse advice lines for nonemergency situations

• Recommend private transport when appropriate with consideration for transport to nontraditional or non-emergency receiving facilities during surge times.

• Deferral of selected 911 requests for service as approved by the system medical director

• If, during the EMD caller interrogation process, it appears that the patient may have symptoms of a suspected infectious agent, provide scripted alerts to all responding EMS units.

• Consider having ambulatory patients meet the responding EMS service outside of their residence if their condition and the environment/weather allows.

• Consider implementation of a telehealth process to allow for direct EMS communication with the patient.

EMS Agencies:
• Change in staffing/crew configuration (i.e. one EMS licensed provider and one non-medical driver)

• Expand “left at scene” discretion/guidelines as approved by the system medical director

• Consider establishing a process for patient follow-up, and if indicated, instructions for self-care at home.

• Non-hospital destinations for appropriate patients with approval of local EMS medical director in collaboration with those facilities.

• Alternate response strategies
  o “Jump car” to assess patient and need for ambulance transport
  o Community Paramedic/Mobile Integrated Health

EMS Responders:
• First responders recognizing a potentially infectious patient should notify dispatch/communications center to assure that responding EMS personnel are prepared to implement appropriate infection prevention and control measures.

• Regardless of dispatch information, EMS personnel should be vigilant for travel history and signs and symptoms of communicable disease (e.g., fever, cough, gastrointestinal complaints) and use standard precautions and add appropriate transmission-based infection control precautions whenever history or exam findings warrant.

• Implement strict standard and transmission-based precautions based on the current known high-risk infection threat and the patient’s clinical information to avoid exposure to potentially infectious bodily fluids, droplets, and particles.

• Avoid direct contact with a patient who may have a serious communicable disease until appropriate PPE is donned (see PPE Section below).
  o Similar precautions should be maintained around close contacts or household members of the patient.
• When not performing direct patient physical assessment, maintain a distance of at least six feet to provide protection from transmission of many diseases.
• Attempt to limit close contact with patient to as short a time as possible when performing the patient assessment and examination.
• Patients or their caregivers may find responders wearing high levels of PPE such as hood, suits, and respirators alarming. Communicating with and calming anxious patients may be more challenging due to PPE as well. Responders should be mindful of this and be prepared to reassure patients and to address their distress and fear.
• Limit the number of EMS providers making contact with a potentially infectious patient to the minimum required to perform tasks safely.
  o Non-essential providers on scene should wait outside of the patient treatment area or outside of the residence or building.
• Conduct initial assessment and interview at least 6 feet away.
  o Maintain this similar distance from the patient’s close contacts, household members, and bystanders.
• Confirm patient’s existing NETO or POLST form, DNR/DNI wishes, or advance directives as well as consideration of termination of resuscitation (TOR) criteria as defined by the medical director.

**Recommended Personal Protective Equipment (PPE) for COVID-19:**
EMS clinicians who will directly care for a patient with possible or known COVID-19 infection or who will be in the patient care compartment with the patient should follow appropriate transmission precautions and use PPE below:

- **Respiratory protection:**
  - Seal-checked N-95 or Powered Air Purifying Respirator (PAPR)
  - Surgical Facemask (if a respirator is not available)
- **Eye protection** (i.e., goggles or disposable face shield that fully covers the front and sides of the face).
- **Personal eyeglasses and contact lenses** are NOT considered adequate eye protection.
- **Gloves**
- **Gown** (if shortage, prioritize use for aerosol-generating procedures, or high-contact patient care)

**Drivers:**
- If providing direct patient care (e.g., moving patients onto stretchers), they should wear all recommended PPE
  - After completing patient care and before entering the driver’s compartment, the driver should remove and dispose of PPE and perform hand hygiene to avoid soiling the compartment.
- The vehicle operator should wear a NIOSH-approved, seal-checked N95 respirator if the patient compartment and cab cannot be isolated.

For EMS clinicians present for or performing the following aerosol-generating procedures, a seal-checked N95 or higher-level respirator, instead of a facemask, should be worn in addition to the other PPE described above:

• Bag valve mask (BVM) ventilation,
• Oropharyngeal suctioning,
• Airway management - if active management is required, airway interventions should be limited to procedures such as supraglottic airway, video laryngoscopy, or RSI.
  o For COVID-19
    + Avoid multiple endotracheal intubation attempts and nasotracheal intubation
    + Consider a supraglottic airway (SGA) device for short transport situations.
    + Endotracheal intubation, if needed, should be accomplished using RSI and is preferred for long transport or air-medical transport.
    + Non-pharmacologically assisted endotracheal intubation should be avoided with COVID-19
• Nebulizer treatment (avoid with COVID-19 – consider metered dose inhaler with spacer or intramuscular epinephrine for severe wheezing),
• High-flow nasal cannula
• CPAP or BiPAP with viral filter as available or
• Resuscitation involving emergency intubation or CPR.

Transport Destination:
• Transport destinations may be adjusted to allow transport to clinics, surgery centers, urgent care centers, or other alternate sites of care in addition to hospitals.
• Sample criteria for consideration for no-transport
  o History of viral syndrome (e.g. fever, cough, nasal/chest congestion, sore throat, body aches)
  o Vital Signs
    + Respiratory Rate between 8 and 20 bpm or upper limit of age based normal
    + Pulse oximetry >94%
    + Heart rate <100 or upper limit of age based normal
    + Systolic Blood Pressure >100 or age based lower limit of normal
  o Absence of high-risk medical history including: respiratory disease (asthma, COPD), active cancer, diabetes, morbid obesity, heart disease (CAD, CHF), neuromuscular disorders, immunocompromised
  o Patient (or guardian) demonstrates medical decision-making capacity, ability to communicate understanding of risks and benefits or no transport, and agrees with no-transport recommendation
  o Absence of shortness of breath, respiratory distress, syncope, cyanosis, diaphoresis, chest pain (other than mild with coughing), or otherwise concerning finding on assessment
• If ALL above criteria are met, consideration for recommending NOT to transport the patient to the emergency department.
• Discuss non-transport and recommended self-quarantine with script: “Based on your age, medical history, and our assessment, a COVID-19 test may be appropriate, but the risks from emergent transport by ambulance to the emergency department likely outweigh the
benefits. In order to limit exposures, would you be comfortable with us providing you alternative information regarding home care and recommendations?"

- Ensure proper support system in place to allow for calling of 911 if condition changes
- Suitability Assessment for home care:
  - Appropriate caregivers are available, if needed
  - The patient is competent and consents to non-transport
  - There is a separate bedroom where the patient can recover without sharing immediate space with others
  - Access to food, water, and other necessities
  - There are no household members at high risk of complications
- Transport if patient does not meet criteria or requests transport

Medical Care On-Scene and During Transport

- Limit the number of EMS providers making patient contact to the minimum required to perform tasks safely.
  - Hold additional resources in staging area, outside the building or residence, or outside of the primary assessment and treatment area.
- If patient is conscious and able to follow instructions, interview the patient for the nature of the call to 9-1-1. If the call nature is suspicious for any infectious illness, toss a surgical mask to them from 6 or more feet away and instruct patient to apply.
  - If patient is unable to follow instructions for whatever reason, place a surgical mask on a patient with likely infectious cough to limit droplet generation or any patient where there is known community spread.
- Advise patients to cover their nose and mouth when coughing or sneezing
  - Use tissues to contain respiratory secretions and, after use, dispose them in the nearest waste receptacle;
  - Perform hand hygiene after having contact with respiratory secretions and contaminated objects or materials.
- Apply strict criteria for the use of scarce equipment.
  - Keep nonessential equipment away from the patient, to minimize contamination on the scene and in the ambulance.
- Only perform potentially aerosol-producing procedures as described above if necessary and cannot be postponed until hospital arrival.
  - Discontinue these procedures before entering receiving facility or confirm with receiving facility if facility entry will be allowed with on-going procedure.
- If active management is required, airway interventions should be limited, as much as possible, to procedures such as supraglottic airway, video laryngoscopy, or rapid sequence intubation (RSI).
  - For COVID-19:
    - If clinically indicated and available, rapid sequence intubation (RSI) should be considered for patients requiring definitive airway management to avoid aerosol production from coughing and is preferred for long transport or air-medical transport.
    - Consider a supraglottic airway (SGA) device for short transport situations.
    - Naso-tracheal tube placement should be avoided.
    - Avoid multiple endotracheal intubation attempts
- Anticipate rapid oxygen desaturation
- Intubated patients should be ventilated with a bag-valve device or ventilator with a HEPA/viral filter on the exhalation port.
- Notify the receiving hospital of the impending arrival of the patient to allow time for preparation to receive.
- Family members and other contacts of patients, other than parents of minors, with possible COVID-19 should not ride in the transport vehicle to reduce the risk of transmission, absent extreme circumstances.
- During transport:
  - The patient compartment exhaust vent should be on high and the driver compartment should be isolated from the patient compartment if possible.
  - The driver compartment ventilation fan should be set to high without recirculation.
  - If a vehicle without an isolated driver compartment and ventilation must be used, open the outside air vents in the driver area and turn on the rear exhaust ventilation fans to the highest setting. This will create a negative pressure gradient in the patient area.
- Consider protocol changes as follows (as approved by EMS Medical Director):
  - Implement treat on-scene and release as appropriate
    - Expanded no transport of patients without serious illness or injury
      - Refer to appropriate follow-up care where available. (ex. Community paramedics, private home health service.)
  - Discontinue certain life-saving treatment efforts
    - Patients that meet criteria for ceasing resuscitation should be pronounced in the field rather than have efforts at resuscitation that would place providers in danger.
    - Patients in cardiac arrest with a non-shockable rhythm (e.g. asystole/PEA or “no shock advised” by AED).
    - Patients in cardiac arrest with a shockable rhythm should have resuscitation including CPR, electrical defibrillation and ACLS drugs. If no ROSC, contact medical control for possible termination order.

### Cardiac Arrest in a Patient with Suspected or Known COVID-19 Crisis Standards of Care

- Applies to patients in cardiac arrest with known previous symptoms of respiratory illness and fever or known COVID-19.
- Personal Protective Equipment
  - Standard, contact, and droplet precautions
  - CPR and assisting ventilations are aerosolizing procedures. N95 masks or equivalent are required.
  - **Do not perform CPR without the appropriate PPE and respiratory precautions in place.**
- Treatment

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2 Adapted from Michigan EMERGENCY SPECIAL OPERATIONS
CARDIAC ARREST IN A PATIENT WITH SUSPECTED COVID-19 CRISIS STANDARDS OF CARE
Airway interventions should be limited to procedures such as supraglottic airway, video laryngoscopy, or RSI.

When CPR is being performed, only necessary personnel should be next to the patient.
- Other personnel should distance themselves from the patient when not performing interventions.

Consider field pronouncement for:
- BLS Agencies
  - Unwitnessed cardiac arrest and/or no shockable rhythm advised by AED
- ALS Agencies
  - Patients in cardiac arrest with an initial rhythm of asystole
  - Patients in non-traumatic cardiac arrest with an initial rhythm of PEA
  - Patients in cardiac arrest with an initial rhythm of ventricular fibrillation should have limited efforts at resuscitation including CPR, electrical defibrillation and ACLS drugs.

- If no return of spontaneous circulation (ROSC), contact medical control for possible termination orders.

For witnessed arrest inside the patient care compartment:
- If single provider is with patient in patient compartment:
  - Pull vehicle to the side of the road in a discrete location and perform resuscitation using full PPE, with doors OPEN to maximize compartment ventilation.
  - Call for additional resources to assist as needed.
- If (or once) adequate personnel and resources are available, may proceed to nearest hospital.
  - Provide verbal presentation to ED staff prior to entering the facility to obtain field pronouncement, thus saving PPE and staff resources for a nonviable patient.

- If patient has mechanical CPR device in place and has lost ROSC, the device may be resumed with continued transport to the hospital, as long as all personnel in the patient compartment have sufficient respiratory PPE in place.

For cardiac arrest during inter-facility transfer where patient demise was expected:
- Consider ceasing any interventions and divert to nearby facility
- Provide verbal presentation to ED staff prior to entering the facility to obtain field pronouncement, thus saving PPE and staff resources for a non-viable patient.

CSC Triggers and Actions:

EMS agencies ideally should consider developing a matrix such as that shown below describing triggers and actions to be taken during Conventional, Contingency, and Crisis Conditions. See IOM example in Appendix C.
<table>
<thead>
<tr>
<th></th>
<th>Conventional</th>
<th>Contingency</th>
<th>Crisis</th>
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<tbody>
<tr>
<td>Dispatch</td>
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<tr>
<td>Response</td>
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<tr>
<td>Patient Assessment</td>
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<tr>
<td>Transportation</td>
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</table>

**Appendix A**

Publication date: 1/5/2021
COVID-19 Guideline

Maintain Records
- Of all prehospital providers who were in the room with the patient at the scene and who were in ambulance during transport (self-monitoring for symptoms for 14 days is recommended, even if wearing appropriate PPE).
- This does not mean the providers can no longer work.
- If all prehospital provider names (students, observers, supervisors, first responders, etc.) are listed in the Patient Care Report then this is a sufficient record.

Wash Hands:
Thoroughly after transferring patient care and/or cleaning ambulance

Safety clean vehicles used for transport:
- Follow standard operating procedures for the containment and disposal of regulated medical waste.
- Follow standard operating procedures for containing and reprocessing used linen.

Wear appropriate PPE when:
- Removing soiled linen from the vehicle. Avoid shaking the linen.
- Clean and disinfect the vehicle in accordance with agency standard operating procedures.
- Personnel performing the cleaning should wear a disposable gown and gloves (a respirator should not be needed) during the clean-up process; the PPE should be discarded after use.
- All surfaces that may have come in contact with the patient or materials contaminated during patient care (e.g. stretcher, rails, control panels, floors, walls, work surfaces) should be thoroughly cleaned and disinfected using an EPA-registered disinfectant appropriate for SARS, MERS-CoV, or coronavirus in healthcare settings in accordance with manufacturer's recommendations.

Pears
- Transport
  Limit transport of the patient only (no family or others unless absolutely necessary, have family ride in cab and apply PPE)
  Occupants in cab of vehicle shall wear N95 Mask (or higher) or PAPR
  Limit number of providers in vehicle required to provide patient care in order to limit exposures
  Ensure use of all PPE for crew and passengers when aerosol generating procedures utilized
- Negative pressure in care compartment
  Door or window available to separate driver and care compartment space:
  Close door/window between driver and care compartment: and operate rear exhaust fan on full/high.
  No door or window available to separate driver and care compartment space:
  Open outside air vent in driver’s compartment and set rear exhaust fan to full/high.
  Set vehicle ventilation system to non-recirculating to bring in maximum outside air.
  Use recirculating HEPA ventilation system if equipped.
- Airborne precautions:
  Standard PPE with seal-checked N95 mask (or PAPR respirator) and utilization of a disposable gown, single pair of gloves, and face shield/goggles.
  Level appropriate for COVID-19, Aspergilus, Tuberculosis, Measles (tuboula), Chickenpox (varicella-zoster), smallpox, influenza, Rhinovirus, Norovirus, and Rotavirus.
- Contact precautions:
  Standard PPE with utilization of a gown, change of gloves after every patient contact, and strict hand washing precautions.
  This level is utilized with GI complaints, blood or body fluids, C-diff, scabies, wound and skin infections, MRSA, Clostridium difficile is not inactivated by alcohol-based cleaners. Washing with soap and water is indicated
- Droplet precautions:
  Standard PPE plus a standard surgical mask for providers who accompany patients in the treatment compartment and a surgical mask for the patient.
  This level is utilized when influenza, Meningitis, Mumps, Streptococcal pharyngitis, Pertussis, Adenovirus, Rhinovirus, SARS, and undiagnosed rashes.
- All-hazard precautions:
  Standard PPE plus airborne precautions plus contact precautions.
  This level is utilized during the initial phases of an outbreak when the etiology of the infection is unknown or when the causative agent is found to be highly contagious (e.g. SARS, MERS-CoV, COVID-19).
- COVID-19 (Novel Coronavirus):
  For most current criteria to guide evaluations of patients under investigation:

Publication date: 1/5/2021
Appendix B

Emerging Infectious Disease (suspected COVID-19)

Non-transport Guidance to Reduce Exposure and Spread

EMS Checklist: Safe to leave at home?

- The patient is stable enough to receive care at home.
- The patient meets all inclusion criteria in the protocol.
- Appropriate caregivers are available at home.
- Recommended: There is a separate bedroom where the patient can recover without sharing immediate space with others.
- Resources for access to food, phone, and other necessities are available.
- The patient and other household members have access to appropriate, recommended personal protective equipment (at a minimum, gloves and facemask) and are capable of adhering to precautions recommended as part of home care or isolation (e.g., respiratory hygiene and cough etiquette, hand hygiene).


PEARLS:
- Recommended Exam: Mental status, skin, HEENT, heart, lungs, and neurological.
- Extremes of age are more prone to heat emergencies (the very young or elderly).
- Common signs and symptoms of COVID-19: Fever; cough, sore throat/body aches, fatigue, shortness of breath/difficulty in "catching my breath". Rhinorrhea (runny/stuffy nose) is uncommon for COVID-19, but may be present or usually found with other viral or bacterial upper respiratory infections.
- Non-transport requirement. The patient is fully alert and oriented to his or her normal baseline and not intoxicated, to your knowledge.
- There are no obvious indications that this patient is experiencing an exacerbation of a chronic illness, such as COPD, CHF, asthma, etc.
- If the patient’s temperature remains greater than 100.4°F and NSDAIDs or acetaminophen have been used within the last 6 hours, transport should be highly encouraged.
- The patient must be able to contact 911 if needed again: functional phone, an adult who will be with the patient for most of the time, a LifeAlert type system, or other appropriate means of communication.
- COVID-19 is considered as a droplet-precaution viral disease. However, droplets may be aerosolized by coughing, sneezing, or nebulized medication use (home nebulizer) and remain in the air for several hours. Use an N95 mask on yourself when making patient contact. If the patient is transported, apply a surgical mask to the patient to protect others. Do NOT use an N95 mask on these patients.
Appendix C

The example below is taken from the EMS Volume of the “Crisis Standards of Care: A Systems Framework for Catastrophic Disaster Response,” Institute of Medicine of the National Academies, 2012.

### TABLE 5-1
Potential EMS Response Adaptations Under Conventional, Contingency, and Crisis Conditions

<table>
<thead>
<tr>
<th></th>
<th>Conventional</th>
<th>Contingency</th>
<th>Crisis&lt;sup&gt;a&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dispatch</td>
<td>Consider initial auto-answer during times of high call volume for medical emergencies</td>
<td>Prioritize calls according to potential threat to life; “peel” apparently non-life-threatening calls (note this requires a medically trained dispatcher, not available at many public safety answering points (PSAPs))</td>
<td>Decline response to calls without evident potential threat to life (also requires a medically trained dispatcher)</td>
</tr>
<tr>
<td>Response</td>
<td>Modify resource assignments (e.g., only fire/rescue dispatched to motor vehicle crashes unless EMS are clearly required, single-agency EMS responses if fire agencies are overtaxed)</td>
<td>Modify resource assignments to a greater extent</td>
<td>Request EMS units from emergency management (if possible)</td>
</tr>
<tr>
<td></td>
<td>Seek mutual-aid assistance from surrounding areas</td>
<td>Change EMS assignments to closest available unit rather than advanced life support (ALS)/basic life support (BLS)</td>
<td>Consider use of National Guard ambulances or other assets</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Consider staffing configuration changes (e.g., from two paramedics to one paramedic plus one emergency medical technician (EMT)-B)</td>
<td>Utilize scheduled BLS providers to answer emergency calls</td>
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<tr>
<td></td>
<td></td>
<td>Consider requests for disaster assistance</td>
<td>Change staffing to one medical provider, one driver</td>
</tr>
<tr>
<td>Patient assessment</td>
<td>Allow patients with very minor injuries to use their own transportation</td>
<td>Encourage patients with minor injury/illness to use their own transportation</td>
<td>Further modify resource assignments as possible</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Assess patients and decline to transport those without significant injury/illness (according to guidance from EMS medical director)</td>
<td>Attempt no resuscitation of cardiac arrests (except ventricular fibrillation [VF] witnessed by EMS)</td>
</tr>
<tr>
<td>Transportation</td>
<td>Transport patients to the closest appropriate facility (rather than the facility of the patient’s choice)</td>
<td>Consider batched transports—answer subsequent call(s) before transporting stable patients to the hospital</td>
<td>Decline transports as above; employ batch transports as needed</td>
</tr>
</tbody>
</table>

<sup>a</sup> EMS volumes will fluctuate significantly over time; thus, conventional, contingency, and crisis conditions may all occur in a single operational period. Dispatchers must therefore have excellent situational awareness of resources and deployment of personnel to provide the best service possible at a given time and have practice in managing these scenarios.

<sup>b</sup> Crisis adaptations often require state or at least city declarations of emergency, as well as relief from usual staffing and response requirements of the state (often through a governor’s emergency order).
On the next several pages, The Institute of Medicine in its’ publication titled “Crisis Standards of Care: A Toolkit for Indicators and Triggers” published the following tables as an examples of potential indicators that would trigger changes in EMS delivery.

<table>
<thead>
<tr>
<th>Indicator Category</th>
<th>Contingency</th>
<th>Crisis</th>
<th>Transition to Conventional</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Surveillance Data</strong></td>
<td>Minor or major disaster</td>
<td>Catastrophic</td>
<td>Approaching resolution</td>
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<tr>
<td>Indicators:</td>
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<td></td>
<td>Increased patient encounters by EMS</td>
<td>Patient care demands exceed the available EMS resources, including mutual aid</td>
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<td></td>
<td>Increased emergency department and/or hospital census</td>
<td>Patient care demands exceed the available hospital resources</td>
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<td></td>
<td>Reports of increased cases of influenza</td>
<td>Confirmation of increased incidence of the strain of influenza</td>
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<td></td>
<td>Reports of an earthquake with potential of additional aftershocks</td>
<td>Surveillance data are impacted due to overwhelmed health care providers, public health, or collapse of data entry systems</td>
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<tr>
<td></td>
<td>Significantly elevated number of dispatch requests</td>
<td>The incidence of illness and injury continues to escalate despite mitigation measures</td>
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<td>Trigger:</td>
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<td></td>
<td>Significantly increased patient care encounters with similar signs and symptoms or high patient acuity</td>
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<td></td>
<td>Significantly increased data registry entries from state or regional electronic prehospital patient care record systems</td>
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<tr>
<td><strong>Tactics:</strong></td>
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<td></td>
<td>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</td>
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<td>Establish incident command for EMS and advise the emergency care system stakeholders of this action command</td>
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<td></td>
<td>Provide incident command with frequent reports and ongoing trends using surveillance data</td>
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<tr>
<td></td>
<td>Engage regional and state surveillance systems to follow trends and incidence of the mass casualty incident or pandemic</td>
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<td>Engage mutual aid partners as required</td>
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<table>
<thead>
<tr>
<th>Indicators:</th>
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<tbody>
<tr>
<td></td>
<td>Stabilization or decrease in patient encounters by EMS</td>
</tr>
<tr>
<td></td>
<td>Stabilization or decrease in emergency department and/or hospital census</td>
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<tr>
<td></td>
<td>Stabilization or decrease in the reports of cases of influenza</td>
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<tr>
<td></td>
<td>Decreasing frequency of earthquake aftershocks</td>
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<table>
<thead>
<tr>
<th>Trigger:</th>
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<tbody>
<tr>
<td></td>
<td>Stabilization or decrease in the number of dispatch requests</td>
</tr>
<tr>
<td></td>
<td>Stabilization or decrease in calls with similar signs and symptoms or high patient acuity calls</td>
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<table>
<thead>
<tr>
<th>Tactic:</th>
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<tbody>
<tr>
<td></td>
<td>Monitor the surveillance data for resurgence or continued mitigation</td>
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<tr>
<td></td>
<td>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</td>
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<tr>
<td></td>
<td>Work with mutual aid agencies to revise and/or implement call timeframe</td>
</tr>
<tr>
<td>Community and communications infrastructure</td>
<td>Indicators:</td>
</tr>
<tr>
<td>--------------------------------------------</td>
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</tr>
<tr>
<td>Indicators: Compressed communications (911, public safety) systems</td>
<td>- Increased calls or abbreviated presentation of patients to EMS agencies seeking medical advice or treatment</td>
</tr>
<tr>
<td>Indicators: Reports of witnessed road or structural damage</td>
<td>- Shifts in medical dispatch over load and unable to answer all calls</td>
</tr>
<tr>
<td>Indicators: Increased calls or abbreviated presentation of patients to EMS agencies seeking medical advice or treatment</td>
<td>- Incorrect information on unstable resources containing within the community</td>
</tr>
<tr>
<td>Tacts:</td>
<td>- Provide community education regarding structural damage and the possible risks</td>
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<tr>
<td>Indicators:</td>
<td>- An increase in reported and information within the lay population, media, and social networking sites</td>
</tr>
<tr>
<td>Staff</td>
<td>Indicators:</td>
</tr>
<tr>
<td>(Refer also to the worker functional capacity table in Toolkit Part 1 (Table 4-1))</td>
<td>- Members of the EMS and EMS workforce unable to report for duty due to impossible conditions, incapacitated personnel, or other direct effects.</td>
</tr>
<tr>
<td>Indicators:</td>
<td>- Members of the EMS and EMS workforce unable to report for duty due to illness, injury, or physical impairment in facilities</td>
</tr>
<tr>
<td>Tacts:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Indicators:</td>
</tr>
<tr>
<td>Indicators:</td>
<td>- EMS crew are at or approaching minimal staffing</td>
</tr>
<tr>
<td>Tacts:</td>
<td>- Loss of 10% or more of the workforce</td>
</tr>
<tr>
<td>- Use mutual aid staffing resources</td>
<td>- Reduce staffing requirement from two advanced life support (ALS) providers to one ALS and one basic life support (BLS) provider</td>
</tr>
<tr>
<td>- Prioritize dispatch calls according to potential threat to life, placing non-life threatening calls on pending status (requires medically trained emergency medical dispatch)</td>
<td>- Change ambulance assignments according to closest available unit instead of BLS/ALS capabilities</td>
</tr>
<tr>
<td>- Reduce staffing requirement from two advanced life support (ALS) providers to one ALS and one basic life support (BLS) provider</td>
<td>- Increase mitigation measures, e.g., mass vaccination, within EMS and EMS workforce</td>
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<table>
<thead>
<tr>
<th>Category</th>
<th>Contingency</th>
<th>Crisis</th>
<th>Return Toward Conventional</th>
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<tbody>
<tr>
<td><strong>Space/Infrastructure</strong></td>
<td><strong>Indicators:</strong>&lt;br&gt;- Evacuation routes are becoming crowded&lt;br&gt;- The general public is unable to access timely care in clinics or emergency department&lt;br&gt;- Multiple emergency department and emergency care centers are going on diversion due to overwhelmed capacity&lt;br&gt;- Roads and bridges have collapsed or become structurally unstable</td>
<td><strong>Indicators:</strong>&lt;br&gt;- Overwhelming number of patients exceeds the amount of available space&lt;br&gt;- Transport destinations are overwhelmed and do not have the capacity to accept additional patients&lt;br&gt;- Law enforcement resources are overwhelmed or limited&lt;br&gt;- Evacuation routes are no longer passable&lt;br&gt;- The failure of a biologic agent has increased compared to prior projections&lt;br&gt;- Structural damage to the physical plant of emergency medical dispatch, EMT, or ED that hampers or incapacitates their operational status&lt;br&gt;- Air ambulances are grounded due to weather</td>
<td><strong>Indicators:</strong>&lt;br&gt;- The demand for available ambulances with patient need is better aligned&lt;br&gt;- Roadways are beginning to have reduced volume&lt;br&gt;- Additional departments and emergency care centers are beginning to accept patients&lt;br&gt;- Structural damage to transport destinations is no longer affecting operational status&lt;br&gt;- A reduction in health care facilities that are or divert&lt;br&gt;- Reliable routes of transport have been established for emergency and public safety vehicles</td>
</tr>
<tr>
<td><strong>Supplies</strong></td>
<td><strong>Indicators:</strong>&lt;br&gt;- EMS agencies report increased use of PPE, medical supplies, medications, or airway management equipment&lt;br&gt;- Manufacturers of PPE, medical supplies, vaccines, medications, or ventilators report decreased stock available&lt;br&gt;- Fuel shortages reported&lt;br&gt;- <strong>Triggers:</strong>&lt;br&gt;- The available PPE is less than what is needed for the EMS workforce&lt;br&gt;- The use of medical supplies, medications, vaccines, and antivirals begins to exceed their replacement</td>
<td><strong>Indicators:</strong>&lt;br&gt;- EMS reports inadequate or depleted supply of PPE, medical supplies, medications, or airway management equipment&lt;br&gt;- Manufacturers of PPE, medical supplies, vaccines, medications, or ventilators report insufficient or depleted stock&lt;br&gt;- Manufacturers of disaster supplies and equipment report factory closed and/or halted production due to loss of workforce</td>
<td><strong>Indicators:</strong>&lt;br&gt;- Demand for PPE for EMS personnel is stabilizing&lt;br&gt;- Demand for medical supplies or equipment is reduced&lt;br&gt;- Manufacturers of PPE, medical supplies, medications, or airway management equipment report improved product availability</td>
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