DEPARTMENT OF HEALTH

Minnesota Crisis Standards of Care Framework

HEALTH CARE FACILITY SURGE OPERATIONS AND CRISIS CARE

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Minnesota Crisis Standards of Care Framework: Health Care Facility Surge Operations and Crisis Care

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DISCLAIMER

The information contained in this document does not constitute any official position of the Minnesota Department of Health (MDH). Health care facilities or systems implementing these strategies in crisis situations should assure communication and coordination with their Health Care Coalition (HCC) partners, MDH, and public safety partners to assure the invocation of appropriate legal and regulatory protections as appropriate in accord with state and federal laws. Recommendations within this document may be superseded by incident specific recommendations by MDH. Web links and resources listed are provided as examples, and may not be the best sources of information available. Their listing does not imply endorsement by MDH.

Introduction

This document—Health Care Facility Surge Operations and Crisis Care—is a framework designed to help health care facilities plan for shortfalls in the health care system during a pervasive or catastrophic public health event, which may cause overwhelming medical surge. This guidance assumes incident management and incident command practices are implemented and key personnel are familiar with the Minnesota Crisis Standards of Care Ethical Framework and processes that underlie scarce resource decision-making.

During a pervasive or catastrophic public health event that results in medical surge, each health care facility or health care system will determine the most appropriate steps and actions for their entity based on their environment, hazards, and resources. Since pre-planned actions are always preferred to impromptu decisions, pre-event familiarity with the contents of this document and development of facility-level crisis standards of care plans is recommended. This document addresses common categories of health care delivery, triage, staff and space that could be problematic in a Crisis Standards of Care situation. HCCs, hospitals and health care systems may determine additional issues and strategies in addition to those outlined in this document.

This document provides an overview of surge capacity and crisis care operational considerations for health care facilities with an emphasis on hospitals for the state of Minnesota. In addition to this framework, hospitals and health care systems are encouraged to review both the Minnesota Ethical and Minnesota Legal Frameworks. Federal guidance can be found on the National Academies of Science webpage.

This document is aimed at health care facility operations; it is the responsibility of the facility to apply this guidance with the help of their management team, and medical staff to ensure operational plans are in place. This document does not replace the judgment of the health care facilities' operational management, medical directors, their legal advisors or clinical staff and consideration of other relevant variables and options during an event.

Risk Assessment

Minnesota has over 130 hospitals ranging from critical access health care facilities with 25 beds, which may be the only health care resource for miles, to large academic medical centers with more than a thousand beds mere blocks away from another major medical center. As health care systems consolidate, services and available beds continue to shrink, thereby reducing capacity within the system to respond to medical surges.

Minnesota hospitals and other health care facilities are faced with a wide variety of potential large-scale incidents that could quickly tax or exhaust their resources. In some situations, the event may damage the health care facility itself, with major impact on the ability to maintain operations and serve the community. There is a significant risk for natural, man-made and terrorism-related disasters throughout the state. Minnesota borders Canada in some of the most rural portions of the state creating cross-border issues, in addition to multiple international ports of entry on Lake Superior that serve oceangoing vessels. Highways and railways crisscrossing the state present substantial risk of hazardous materials and other transportation-related incidents. Minnesota also has two nuclear power plants, both located outside of the Twin Cities Metropolitan Area, which could potentially affect health care systems in the event of a radiological release at one of these plants. Pandemics such as H1N1 flu virus can have an impact on health care services statewide. Unfortunately, the risk of terrorist attacks on targets small and large in Minnesota is substantial and must be planned for by all health care systems.

Care Continuum

Most health care facilities are familiar with the concepts of surge capacity, the ability to manage a sudden influx of patients[1] and surge capability, the ability to manage patients requiring very specialized medical care.[2] However, not all surge capacity strategies are created equal. Some can be accomplished with minimal risk—using post-anesthesia care beds for temporary inpatient care—and some carry significant risk—providing cot-based care. The goal during a medical surge event is to maximize surge capacity strategies that mitigate the crisis while minimizing the risks associated with deviations from conventional care. Choosing the strategies that are most appropriate to the situation and pose the least risk to the patient and provider first, and then proceeding to riskier strategies as demand increases and options decrease, is the preferred path.

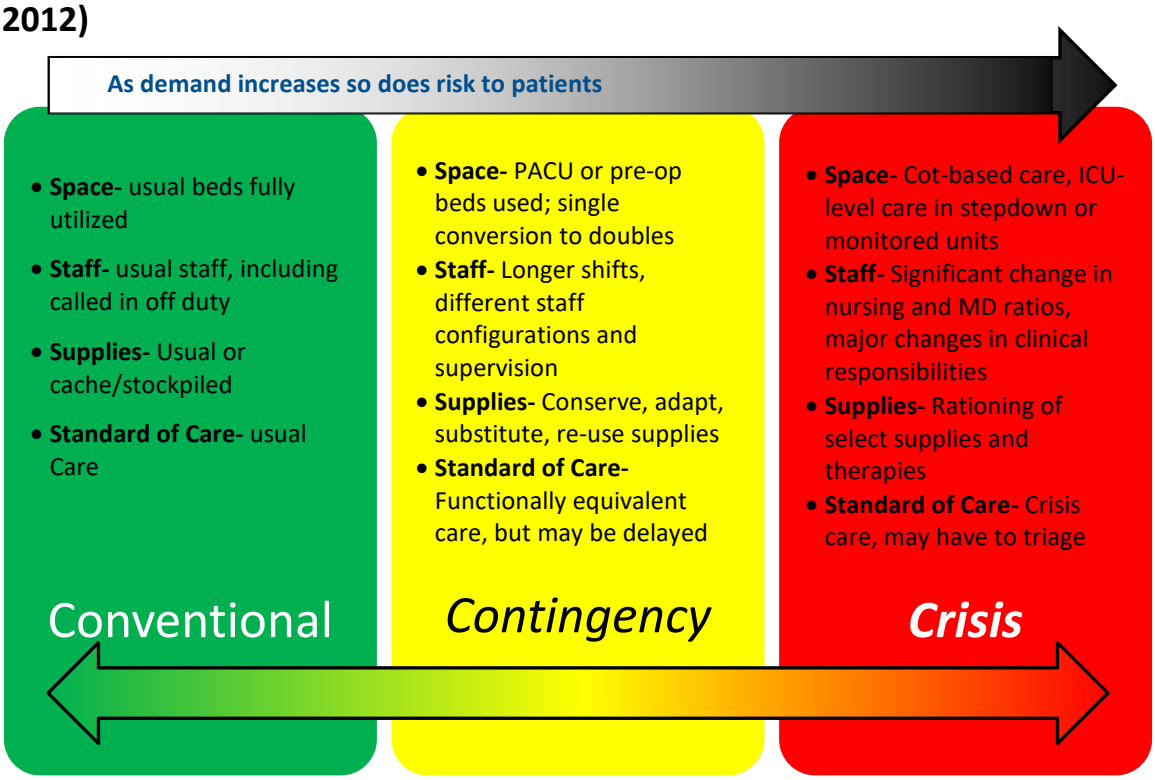
Surge capacity is described across a spectrum of three categories (Figure 1, below):

- **Conventional:** Usual resources and level of care provided.[3] For example, during a surge in patients, maximizing bed occupancy and calling in additional staff to assist.

[1] ASPR. *2017-2022 Health Care Preparedness and Response Capabilities.* pg. 44
[2] ASPR. *2017-2022 Health Care Preparedness and Response Capabilities.* pg. 44
[3] Hick, J. L. Hanfling, D. & Cantrill, S. V. (2012). Allocating Scarce Resources in Disasters: Emergency Department Principles. *Annals of Emergency Medicine, 59*(3), p 178.

- **Contingency:** Provision of functionally equivalent care that may incur a small risk to patients. Care provided is adapted from usual practices. For example, boarding critical care patients in post-anesthesia care areas using less traditional, but appropriate resources.[4]
- **Crisis:** Disaster strategies used when demand forces choices that pose a significant risk to patients but is the best that can be offered under the circumstances. For example, cot-based care, severe staffing restrictions, or restrictions on use of certain medications or other resources. [5]

Figure 1: Examples of Changes in Health Delivery (modified from IOM/NAM 2012)



Crisis Care versus Crisis Standards of Care

For purposes of this document, crisis care refers to the care and strategies at the facility level when demand acutely exceeds supply of resources and usual medical practices cannot be maintained. Crisis care situations can occur without warning when a no-notice event affects any health care facility, but usually can be addressed within hours by bringing in additional resources or transferring patients to other facilities.

Crisis Standards of Care refers to systematic support (including governmental) for non-traditional health care operations during a prolonged and widespread event that require declarations of disaster, legal and regulatory support, and issuance of clinical care guidelines

[4] Hick, J. L. Hanfling, D. & Cantrill, S. V. (2012). Allocating Scarce Resources in Disasters: Emergency Department Principles. *Annals of Emergency Medicine, 59*(3), p 178.
[5] Hick, J. L. Hanfling, D. & Cantrill, S. V. (2012). Allocating Scarce Resources in Disasters: Emergency Department Principles. *Annals of Emergency Medicine, 59*(3), p 178.

(potentially including triage criteria) by state agencies recognizing the need for consistent statewide implementation of patient care strategies. Crisis Standards of Care are only enacted in extraordinary circumstances, such as a pervasive or catastrophic public health event, such as a severe pandemic.

In order to achieve a successful response, health care facilities must utilize an incident management system and attempt to move as rapidly as possible from a reactive stance—relying on frontline personnel utilizing job aids and applying their training—to a proactive stance—managing the event by objectives using an incident action plan (IAP). The Hospital Incident Command System (HICS) must have the ability to integrate the appropriate medical and technical experts into the planning process and to inform the hospital Incident Commander (IC) about the specific needs of the event. For example, having critical care physicians or a Clinical Care Committee propose modifications to medical services provided and any necessary triage decision processes. The IC and administration should bear responsibility for assuring that they have obtained the appropriate expert advice (e.g. infectious disease input for Ebola protocols) and approve the policies and modifications to clinical practice whenever possible. They should not allow it to fall to the individual clinician to make such decisions.

Coordination with other health care facilities both internally and externally within the regional HCC is *critical* to assure that patients and resources are distributed to balance the demands of the event across as many facilities as possible and thereby diffuse the impact. Health care facilities should attempt to mitigate any crisis as soon as possible by transferring patients or bringing in resources. This should be done in coordination with HCC partners. Hospitals should be very familiar with the plans of their local coalition for response coordination and resource management.

Key Points about Crisis Care

- Crisis care is not a separate triage plan; these strategies are extensions of surge capacity plans.
- Crisis care may occur during long-term events such as pandemics when no reasonable help is expected, or during short-term, no-notice events where help will arrive, but too late to solve an acute resource shortfall.
- Health care facilities will not have an option to defer caring for patients in a crisis; demand will drive the choices that have to be made.
- If strategies are not planned for ahead of time, they might not be considered and/or will be difficult to implement.
- Strategies should be proportional to the resources available; as more resources arrive, you should move back toward lower risk strategies (and therefore, back toward contingency and eventually conventional status).

It is MDH's position that the principles of crisis care must be integrated into Emergency Operations Plans (EOPs) at all levels of health care.

Local and state government, including agencies such as MDH, support those responses through declarations and legal and regulatory mechanisms. These may include care guidelines or declarations of Crisis Standards of Care, as required.

Roles and Responsibilities

The primary focus of this guidance is on the operational strategies for health care facilities during crisis, health care facilities should be supported by regional HCCs and state and local government agencies. HCCs includes partnerships between local public health, EMS, health care facilities, and emergency management that provide planning and response coordination in each of eight public health regions of the State. A brief outline of key roles and responsibilities related to response is in the MDH Crisis Standards of Care Concept of Operations.

Planning and Implementation

Indicators and Triggers

An indicator is a "measurement or predictor of change in demand for health care services or availability of resources."[6] Examples of indicators include: a tornado warning or a report of several cases of unusual respiratory illness. A trigger is a "decision point about adaptations to health care service delivery" that requires specific action.[7] An indicator may identify the need to transition to contingency or crisis care (but requires analysis to determine appropriate actions), while a trigger event dictates action is needed to adapt health care delivery and resources. It is important for organizations to identify indicators and triggers prior to an event due to the "stress, complexity, and uncertainty inherent in a crisis situation."[8]

There are two types of triggers. Build scripted triggers into standard operating procedures, which are automatic 'if/then' decisions. Whenever possible, scripted triggers should be developed for frontline personnel (point of entry health care facility staff, reception, etc.) so they have actions they can take immediately to prevent delay. Non-scripted triggers require additional analysis involving supervisory staff. These are often part of an incident action planning cycle. The less specific the information available, the more difficult it is to apply a scripted trigger and the more likely an experienced supervisor or subject matter expert (SME) will be involved to process the information and decide on necessary actions. Frontline personnel should have a low threshold for passing indicator information along to supervisors for situational awareness and potential decision-making.

In addition to identifying response specific indicators and triggers, hospitals should determine the trigger or threshold to identify when they are in crisis care whenever possible. For example, if a hospital is providing cot-based care or any intensive care unit (ICU) care is provided outside

[6] 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, "Crisis Standards of Care: A Toolkit for Indicators and Triggers" (the National Academies Press, 2013) 2

[7] Ibid

[8] Ibid

usual intermediate and pre/post op areas, these are indicators that operations is now into crisis care and should trigger a response action. These triggers will vary by facility depending on size and resources. Detailed information on indicators and triggers (including templates for health care facilities) is available in the 2013 IOM/NAM Crisis Standards of Care: A Toolkit for Indicators and Triggers.

How to identify and incorporate Indicators and Triggers in your EOP

1. Do not focus on indicators and triggers in isolation.
2. Determine what response strategies or options you may use during a disaster.
3. Determine what indicators might be available during a disaster that would trigger hospital action.
    a. *Example 1:* The start of seasonal flu season might trigger a health care facility's supply or material management department to order more facemasks, N95 respirators, and other personal protective equipment (PPE) than they would outside of flu season.
        i. While an indicator, this alone, might not trigger *disaster* related actions at your health care facility.
    b. *Better Example:* A declared public health emergency due to an increase in flu cases and verified reports of PPE shortages should generate specific actions by health care facility staff to conserve PPE. Methods include, cohorting patients, safe re-use of masks, or setting up a screen process to manage worried well prior to the Emergency Department (ED).
    c. *Example 2:* Reports of an incident with multiple casualties or cases in combination with a health care facility census at 90% should generate specific actions by health care facility staff to discharge appropriate patients rapidly.
4. Identify trigger points for your health care facility including, but not limited to:
    a. Implementing triage,
    b. Temporarily closing your facility to new admissions or transfers,
    c. Canceling elective procedures,
    d. Stockpiling or ordering more supplies, and
    e. Implementing staffing changes.
5. Determine what staff actions should happen based on the indicator. These should be specific and tell staff exactly *when* they should take certain actions. This is critical to the success of the response.
    a. *Example:* There is a report of an incident (weather, car crash, etc.), hospital staff should activate the hospital disaster plan if the incident is likely to generate >10 casualties.
    b. Additional actions will be taken by hospital staff during the activation process of the EOP, for instance, moving patients away from windows, having the trauma team report to the ED etc.

Having specific actions staff should take at a clearly defined trigger is critical to the success of the response. Delays in decision-making occur in unfamiliar situations and with unclear authority.

Core Strategies

The MDH Patient Care Strategies for Scarce Resource Situations outline six core strategies employed in anticipation of a shortage of space, supplies, and/or staff. These strategies will assist your facility avoid a Crisis Standards of Care situation. When writing an EOP consider how your facility will utilize these strategies. They are:

- **Prepare:** pre-event actions taken to minimize resource scarcity (e.g. stockpiling of medications or supplies).
- **Substitute:** use an essentially equivalent device, drug, or personnel for one that would usually be available (e.g. exchanging morphine for fentanyl).
- **Adapt:** use a device, drug, or personnel that are not equivalent but that will provide sufficient care (e.g. anesthesia machine for mechanical ventilation; LPN with RN supervision instead of multiple RNs).
- **Conserve:** use less of a resource by lowering dosage or changing utilization practices (e.g. minimizing use of oxygen driven nebulizers to conserve oxygen).
- **Re-use:** re-use (after appropriate disinfection/sterilization) items that would normally be single-use items.
- **Re-allocate:** restrict or prioritize use of resources to those patients with a better prognosis or greater need.

Acute Care Hospitals

1. Review available resources and determine potential strategies to address Crisis Standards of Care across the surge capacity continuum from conventional to crisis care.
2. Review your hospital's capabilities in trauma care, critical care, hazardous materials (HAZMAT), infectious disease, burn, and pediatrics to meet their objectives.
    a. Involve in this review: nursing, administration, emergency management, emergency services, support services—lab, radiology, respiratory therapy, pharmacy, facilities etc.—and physician personnel.
    b. Include surgery and critical care if your institution provides those specialties.
3. Determine what number of general or specialty mass casualty patients will be planned for based on suspected hazards.
    a. Consider your role in the community and the presence or absence of other health care facilities in the area.
    b. For example, a critical access hospital might prepare for up to 10 total casualties with up to 3 being small children, whereas an urban Level 1 trauma center might prepare for up to 100 significantly injured patients, with up to 20 small children.
4. Incorporate now determined indicators and triggers (surge capacity information throughout the care continuum) into your EOP to give personnel clear expectations of what they will do and when they will do it.
    a. This should also include the notifications to supervisors and partner agencies that need to occur when these triggers are activated. Delegating authority to activate the disaster plan to ED staff or nursing supervisors/charge nurses should be done when possible to facilitate rapid action. The adoption of clear policies helps facilitate decisions as well as provides accountability.

5. Identify the role of regional partners within your HCC and the triggers to contact your HCC for assistance.
    a. Members of your HCC and regional EMS program should be involved to vet portions of your plan (their role within your plan) when possible, ideally when still in draft form.
6. Once a draft is completed, ensure it is ethically sound by using the Ethical Checklist provided on MDH's website.
7. Education and training of staff should be conducted to assure successful implementation of the plan.
    a. Keep in mind the training practice of educating to an awareness, knowledge, and proficiency level. Not all staff members need to be proficient in the plan, but those frontline decision-makers (charge nurses, unit supervisors etc.) should know how to incorporate surge capacity into their respective units prior to an incident. See below for more detail on Health Care Worker Engagement.
    b. Job aids—such as brief task cards or the MDH Patient Care Strategies for Scarce Resource Situations—should be widely used to help frontline personnel with initial decisions and actions.
8. During an event response, the facility should review and modify their procedures as needed as part of the incident action planning process. Plans should be adaptable and not "lock in" disaster response protocols for the duration of an incident but allow flexibility and transition toward conventional care as more resources arrive or demand falls, or both.
    a. Example: Do not keep triaging resources when you have enough available due to a supply delivery etc.
9. Exercising the plan is an important part of training and testing your plan. It is important when testing any EOP that you really push the exercise into the crisis care mode.
10. Review and updates to the plan should be conducted after every exercise or real world event.

Non-Acute Care Facilities and Services

The role of non-acute care facilities, such as ambulatory care centers, clinics, hospices, home care etc. is different than that of acute care hospitals during an incident that results in Crisis Standards of Care. These facilities can provide critical outpatient capacity and may be needed to broaden their scope of care during such incidents.

1. Examine your resources and determine potential contingencies such as:
    a. Extended hours,
    b. Conversion of space and staff from specialty care to primary care duties,
    c. Changes to charting and administration to enhance work flow (template charts and prescriptions for the event),
    d. Changes to scheduling (e.g. cancel or re-schedule elective procedures and appointments),
    e. Enhanced use of tele-medicine, telephone prescribing, and e-visits to manage workload,
    f. Adjust clinic flow to avoid exposing well persons to ill persons,
    g. Communicate and implement guidance on scarce resources (e.g. guidelines for prescribing anti-viral medications or administering vaccine),

   h. Increasing your normal acuity of patients to support acute care hospitals, and
   i. Consider the utilization of volunteers to provide check-in and other services.
2. The applicable activities to your agency or facility should be incorporated into your EOP.
3. Once a draft is completed, ensure it is ethically sound by using the Ethical Checklist provided on MDH's website.
4. Education and training of staff should be conducted to assure successful implementation of the plan. See below for more detail on Health Care Worker Engagement.
5. Exercising the plan is an important part of training and testing your plan. It is important when testing any EOP that you really push the exercise into the crisis care mode.
6. Coordination with the partners within your HCC to promote consistency and coordination of care is necessary.

Health Care Staff Engagement

Health care providers must clearly understand the rationale for crisis care planning, the ethical principles underlying triage decisions, and the specific plans of the institution. However, not all staff need to know every plan word for word. Staff should be divided into tiers for education—knowledge, competency, and proficiency.

- **Knowledge:** awareness of the plan; A floor nurse should understand how the surge plans affect their unit, including use of cots and changes in staffing, but does not need to know details of the plan (e.g. how to activate the plan).
- **Competency:** the ability to do something successfully or efficiently in relationship to the plan; A nursing supervisor should understand when to activate the plans, and who to notify. Physicians should know which criteria may be ethically considered when making triage decisions.
- **Proficiency:** a high degree of competence or expertise; Staff who are fulfilling incident command roles should understand the facility operations and how to interface with your HCC, where to get help or expertise, and be prepared to adopt proactive crisis care strategies with input from subject matter experts. In general, all health care facilities should have three-deep personnel for each HICS position.

Exercises

Health care facilities should elevate their exercises into a true crisis mode. Often, we are good at testing our plans at a contingency level, but have trouble testing them on a crisis level. At minimum, health care facilities should provide tabletop and other exercise opportunities—like workshops—to walk through the processes outlined in the EOP for crisis standards of care.

For example, having clinical staff walk through how they would increase their surge capacity in the ICU with space, staff, and supplies will allow them to become more comfortable with their roles and responsibilities relative to crisis care and will help drive modifications of existing plans. This will also help clinical staff and administrators recognize triggers and have them become second nature to them, thus preventing hesitation during a real event.

Exercises should also test how your team would interface with your HCC to emphasize that under no circumstances should a health care facility be providing crisis care in a silo without reaching out for assistance from partners.

Integration with Regional Health Care Coalitions

There are eight regional HCCs within Minnesota. For information on your HCC, reference the map and contact information online.

It is critical that health care facilities ***do not*** work on surge and crisis care plans in isolation, but in concert with their regional partners and with their parent health systems, as applicable. Consistency of plans and knowing what other health care facilities in the region are planning is critical to success. Surge strategies and standard procedures do not have to be identical, but if they are similar, it will help greatly in education, training, and mutual aid response. HCCs help coordinate not only planning, but also response activities among partner health care facilities, public health, EMS, and emergency management. During a response, the HCC provide situational awareness through information sharing, manage and coordinate resource requests, and facilitate or engage in response coordination role for the delivery of health care services. They may also convene workgroups during planning or a response to help develop regional tactics (e.g. to support alternate care sites or processes during a response or develop common policies such use and conservation of N95 masks). HCCs will also engage with neighboring HCCs and state agencies (MDH or EMS Regulatory Board) to coordinate information and strategies. This coordination assists in maintaining a common operating picture.

The key is to only implement crisis strategies when assistance from regional and state partners is inadequate (either too little or too late) and no "bridging" therapies or patient transfers can address the need.

Assuring regional coordination and leveraging available resources prevents inappropriate transition to crisis standards of care. Coordination with the regional partners *must* be achieved as soon as possible when a crisis develops so patient care can return to conventional operations as soon as possible. The sooner a crisis is recognized (indicators) and pre-planned resources and coordinating mechanisms are activated (triggers), the shorter the crisis period will be.

Having a good surge capacity plan contributes to the goal of emergency planning to *avoid* provision of Crisis Standards of Care.

Response

All emergencies are addressed at the local level. If the emergency exceeds capacity at the local level, response entities will go to the State and when State capacity and resources are reached the federal government will become involved. Federal resources and assistance will all be coordinated through the state. The only caveat to this is that Tribal Nations, as sovereign entities may request disaster assistance directly from the federal government.

Triage

Triage generally refers to prioritization for care or resources. There are three basic types of triage:[9]

- **Primary triage:** performed at first assessment and prior to any interventions (e.g. triage upon entry to the ED of by EMS at the scene);
- **Secondary triage:** performed after additional assessments and initial interventions (e.g. triage performed by surgery staff after an initial CT scan); and
- **Tertiary triage:** performed after or during the provision of definitive diagnostics and medical care (e.g. triage performed by critical care staff after intubation and mechanical ventilation with assessment of physiologic variables).

Primary, secondary and tertiary triage can be categorized as either **reactive triage** or **proactive triage**.

Reactive Triage

Reactive triage occurs in the early phases of the incident when the responders know less information regarding the incident. Physicians and nurses make triage decisions based on their best judgment. Generally, patients with altered mental status, signs of shock, penetrating torso injury, uncontrolled bleeding, and respiratory distress are highest priority. It is rare to have to categorize patients during this process as expectant and therefore to receive palliative care as their only intervention. *Primary and secondary triage are often reactive triage.*

Factors to consider:

- Time required to perform treatment,
- Clinical skill requirements (i.e. how much physician/nursing expertise is required),
- Treatment requirements (what are the resource requirements),
- Prognosis of the injury.

In general, the more victims there are, the more the triage process should prioritize the moderately injured that require interventions that will save their life and can be rapidly performed (e.g. chest tube, airway management, and tourniquet). Finally, if multiple patients present with identical prognosis to a hospital, that has minimal resources, a first-come, first-served or lottery strategy may have to be implemented.

It is critical to re-evaluate patients as more resources arrive.

Proactive Triage

Proactive triage may be required later in an incident that continues to overwhelm the health care system after initial stabilization and delivery of available resources. The situation and resources are now known. Decisions revolve around whether resources can continue to be expended given the patient prognosis and availability of resources. *Tertiary triage is a form of*

[9] Hick et al. 2011; IOM/NAM 2009

proactive triage. Proactive triage of resources should only occur when the following conditions are met and unless specified otherwise, the patient should continue to receive all other means of support. The patient should always have equitable access to medications to control pain and suffering to the degree possible given the circumstances:[10]

Proactive triage conditions to meet:

- Critically limited resource(s) and infrastructure are identified.
- Surge capacity is fully employed within health care facilities (and regionally) if capacity/space is the limited resource.
- Maximum efforts to conserve, substitute, adapt, and re-use are insufficient if supplies are the limited resource.
- Patient transfer or resource importation is not possible or will occur too late for bridging therapies (such as bag-valve ventilation or other temporizing measures) to be considered.
- Necessary resources have been requested from local and regional health officials (as applicable).
- A state of emergency has been declared, or other health powers (as applicable) have been activated.
- Regional, state, and federal resources are insufficient or cannot meet demand.

Before implementing proactive or tertiary triage, facilities must have firmly established triage processes and plans that take into consideration available evidence, resources, and has administrative backing of the facility.

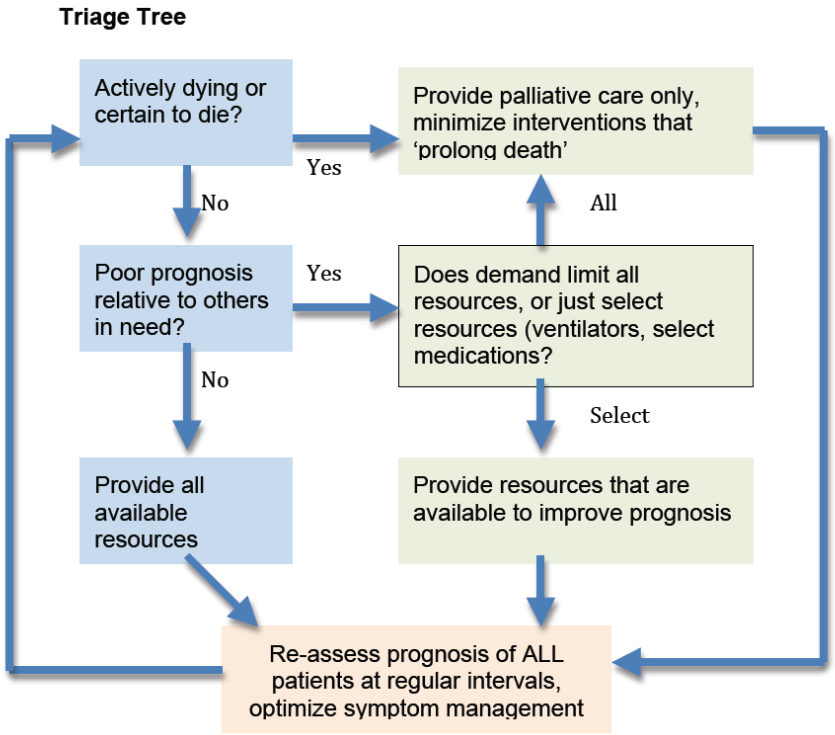
The MDH Patient Care Strategies for Scarce Resource Situations can assist facilities in decision-making; however, it is up to the facility to determine the process. In situations where this type of triage is required during a prolonged incident, MDH may convene the Science Advisory Team (SAT) to provide recommendations to the Commissioner of Health. In turn, the Commissioner of Health may provide additional recommendations—outside of the—MDH Patient Care Strategies for Scarce Resource Situations—to Minnesota's health care sector during an incident.

The triage *process* is far more important than the specific clinical decision tools, which may vary based on the event. It is recommended frontline clinicians caring for patients should not be directly involved in the triage process; rather, they should provide clinical knowledge to the decision-making body who will make determinations of care. Facilities should have a Clinical Care Committee and/or Triage Team available for consultation. This function may be provided regionally and remotely. For example, health systems may provide this function for all their health care facilities and the same team may provide assistance to outside health care facilities that wish to refer patients or do not have the resources to make triage decisions. The Clinical Care Committee/SMEs must provide a process and agree on indications for treatment (e.g. specific medications) or approve decision tools for triage of ICU and other resources. Figure 2

[10] IOM/NAM Crisis Standards of Care (2009) table 4-14.

depicts a basic triage tree. A more detailed Health Care Facility Scarce Resource Decision-Making Tree is located be found online.

Figure 2: Basic Triage Tree



If health care facilities follow pre-defined processes and plans—including vetted, unbiased triage decision-making tools, like the MDH Patient Care Strategies for Scarce Resources—during the triage process, there is a level of liability coverage for decisions made during response.

Ethical Considerations

A comprehensive overview of ethics during a Crisis Standards of Care event can be found on the Ethical Considerations website. Clinicians and health care administrators should be familiar with the ethics surround crisis standards of care and potential resulting conflicts and pitfalls that can be made. All plans should be checked against the provided Ethical Checklist before finalized.

In general, triage decisions must meet the five basic requirements outlined in the IOM/NAM 2012 publication:

1. **Fairness:** process recognized as fair, equitable, evidence based, and responsive to specific needs of individuals and the population focused on a duty of compassion and care, a duty to steward resources, and a goal of maintaining the trust of patients and the community.
2. **Transparency:** in design and decision-making.
3. **Consistency**: in application across populations and among individuals.

4. **Proportionality**: public and individual requirements must be commensurate with the scale of the emergency and degree of scarce resources (i.e. the restrictions on care should not be more restrictive than the situation requires – and this may require re-evaluation as more resources become available).
5. **Accountability**: of individuals making the decisions and of the facilities and governments to support the processes and the providers.

Surge Capacity

Surge capacity is a measureable representation of ability to manage a sudden influx of patients. It is dependent on a well-functioning HICS structure and the variables of space, supplies, staff and special considerations.[11] All health care facilities should have concrete plans on how they would expand their surge capacity and provide adequate training of health care personnel. Surge capacity is discussed in three categories: space, supplies, and staff with special considerations.

Space

Emergency Department

A location, staff, and basic supplies (ideally packed in bins, pre-event) for overflow care of people with minor wounds, as well as one for family reunification should be planned. Additionally, if there are clinics, supervised living facilities or nursing homes connected to or close to the health care facility, they should be part of the surge capacity plan. Upon activation of the EOP, the ED should be cleared to the degree possible by discharging, moving patients to inpatient beds, moving patients to observation areas, and moving stable patients back out to triage as rapidly as possible depending on available space. Inpatient units should be ready to accept patients to decompress the ED, bypassing usual processes. Transfer of patients to other hospitals can also assist with space creation. This may occur by ground or air and by many transportation options (ambulance, bus, private vehicle) as the situation warrants. Although the hospital likely has established referral patterns, other options should be examined in a crisis and it should be understood in a pervasive or catastrophic public health event, the ability to transfer patients could be limited.

Medical Surge Floor

Conventional beds should be filled and staffed to capacity. Health care facilities should identify which single rooms can accommodate an additional bed and keep adequate beds in supply to the degree possible to allow for double rooming. Adequate headers (oxygen, suction, electrical) and privacy curtains are important considerations when planning to double rooms. Additional observation beds, procedure areas, and flat spaces may be used. Health care facilities should maintain adequate cots (with egg-crate or other mattresses) to use in flat-space areas for crisis care (also helpful for staff during blizzards and other situations). Patients should be carefully

[11] American College of Emergency Physicians. *Health Care System Surge Capacity Recognition, Preparedness, and Response*. September 2018.

evaluated before being moved to these areas (normal mental status, low risk for pressure ulcers, not in isolation for infection control purposes etc.).

A rapid discharge process should occur as soon as the EOP is activated. Charge nurses should identify patients that are appropriate for early discharge and move them to a discharge holding area or the hallway/unit waiting area for physician review. This can open up rooms rapidly. If not appropriate for discharge, the patients moved may be appropriate for cot-based care.

When not needed for intensive care unit (ICU)-level care, pre and post-op areas may be used for floor care as well if available. If use of surge areas or cot-based care are anticipated beyond the first 24 hours for inpatient care, HCC partners should be engaged to assist with accepting transfers and other support. If other health care facilities are in the same situation, the request for a Centers for Medicare and Medicaid Services (CMS) 1135 waiver should be considered to allow billing for patient care in these areas. To learn more about CMS 1135 waivers, review the Minnesota CSC Framework: Legal Authority and Environment.

Intensive Care Unit

For planning purposes, ICU services should include the ability to provide cardiac monitoring, invasive monitoring, mechanical ventilation, and hemodynamic management. Many facilities do not provide these services, although at a minimum, they should be able to provide initial resuscitation and management awaiting transfer to another facility. In certain situations, a health care facility that normally refers critically ill patients may have to continue to provide care for hours to days longer than usual or may elect to provide ongoing critical care using transport ventilators and other resources. In these cases, critical care consultation should be obtained via phone or telemedicine to provide expert input on the care provided until transfer can be arranged or critical care is no longer required.

The American College of Chest Physicians has guidance documents on ICU surge published in 2014. The executive summary with all the suggestions can be found at Introduction and Executive Summary Care of the Critically Ill and Injured during Pandemics and Disasters: CHEST Consensus Statement. Each of the sections has a supporting article (e.g. surge capacity logistics) with further details.

According to the key recommendations made by the American College of Chest Physicians, hospitals that provide inpatient critical care should be able to:

- Surge 20% of usual ICU capacity within hours;
- Surge 100% of usual ICU capacity within 24 hours using facility or regional HCC assets; and
- Surge 200% of usual ICU capacity within days using regional HCC, state, or federal assets.

In order to accomplish this, health care facilities providing ICU services should determine the additional space they can use for ICU level care. In particular, procedural and surgical areas including pre and post-op care areas are likely targets as they may already have the monitoring equipment necessary for critical care. Health care facilities may wish to create a grid for ICU surge indicating the sequence/preference and numbers of beds (as well as additional supplies

needed for those areas) to be used. Additional information on planning for ICU surge has been published in CHEST including principles[12] and logistics.[13]

Though planning for a 200% surge is daunting, most facilities will find they have adequate space, and can document the specific additional logistical (staff and supply) needs that may be requested if required. This would primarily occur in a pandemic event, but potentially in other scenarios where the health care facility cannot off-load patients rapidly (e.g. large scale anthrax or botulism attack). Few hospitals will have the ventilator and cardiac monitor resources to achieve a 100-200% surge, but understanding the needs and planning for it is critical to being able to request the necessary assets in a timely manner from regional and Federal sources.

Inherent in the ICU surge plan is an understanding the overall acuity at your health care facility will increase markedly and lower acuity patients may need to be discharged to outpatient care referred to homecare, long-term care, or provided care at an alternate care site. This may necessitate changes in discharge protocols and health care facility policies about what patients will be cared for on what units.

Alternative Care Sites

Alternate Care Sites (ACS) can provide overflow hospital capacity during a pervasive or catastrophic public health event. By providing care to less complex inpatients, an ACS can increase a hospital's capacity to care for higher acuity patients. A hospital may open an on-site ACS or a community site in conjunction with the local health system (via multi-agency coordination) to staff and refer appropriate patients to the facility. Examples of some services available at an ACS include:

- Oxygen,
- Intravenous fluids,
- Medications, and
- Basic laboratory testing.

Emergency or critical care services are generally, not supported at an ACS. Health care services must also be available at community shelters including resources for those with chronic illness. An ACS should be implemented by HCC partners as part of a regional strategy to address incident demands and may include virtual as well as physical patient contact and interventions.

Staff

Availability of appropriately trained staff is a key limiting factor in disaster response. Health care facilities should have plans and mechanisms to notify and call back their staff, as required, during an incident. During a pervasive or catastrophic public health event, staff will be taxed for long periods and absenteeism may be high due to personal or family illness. The Incident Commander should direct the HICS Planning Section to engage appropriate experts to

[12] John L. Hick, Sharon Einav, MD, Dan Hanfling, MD, Niranjan Kissoon, MBBS, FRCPC, Jeffrey R. Dichter, MD, Asha V. Devereaux, MD, MPH, FCCP, Michael D. Christian, MD, FRCPC, FCCP on behalf of the Task Force for Mass Critical Care (2014, October) Surge Capabilities Principles, Volume 146 (Issue 4), Supplement, Pages e1S-e16S.

[13] Sharon Einav, John L. Hick, Dan Hanfling, Brian L. Erstad, Eric S. Toner, Richard D. Branson, Robert K. Kanter, Niranjan Kissoon, Jeffrey R. Dichter, Asha V. Devereaux, Michael D. Christian on behalf of the Task Force for Mass Critical Care (October 2014) Surge Capacity Logistics. CHEST Journal, Volume 146 (Issue 4) Pages e17S-e43s.

determine what services will be prioritized and direct appropriate staff to provide those services. This could include the use of a multi-disciplinary Clinical Care Committee if resources allow; see IOM/NAM report 2012 section 4-5. For example, outpatient surgery centers may cancel elective procedures to allow staff to participate in inpatient care and staffing configurations could be altered (e.g. utilizing LPNs with RN supervision instead of all RNs).

Such decisions require careful balancing of the usual medical needs of the community and the demands of the incident, so that patients with acute conditions unrelated to the incident can still be seen and evaluated and issues that do not absolutely require a patient visit (e.g. medication refills) can be addressed using alternative means. Additionally, staff and others may be asked to contribute to patient care in novel ways (e.g. office staff or family members may provide non-medical care and feeding to the patient, allowing nurses to focus their expertise on medication administration and other patient management, clinic hours may be extended, and electronic visits may substitute for in-person visits).

In some cases, just-in-time training may be used to broaden staff skills, but tasks still need to be delegated appropriately and within scope of practice.

For example, staff most able to manage ventilators are registered respiratory therapists. In order to alleviate respiratory therapist workload and allow them to focus on ventilator management, nurses can administer nebulized medications and perform other respiratory care duties within their scope of usual practice. Additional guidance on staff shortages is in the MDH Patient Care Strategies for Scarce Resources Situations.

Supplies

The current U.S. supply chain provides sufficient product to meet anticipated normal market details, but has minimal ability to rapidly surge production, resulting in challenges to meeting large or unexpected increases in demand that might occur during public health events. Therefore, without proper planning shortages of supplies are likely. When supplies are inadequate, the six core strategies discussed above (pages 9-10) and located in the MDH Patient Care Strategies for Scarce Resources Situations should be employed and health care facilities should work with their regional HCCs to share supplies if possible.

Health care facilities should not operate in a silo and implement extreme (e.g. re-use, re-allocation) strategies without consulting external partners (e.g. health system, HCC, state).

For most hospitals, concentrating on inexpensive but commonly needed supplies such as intravenous fluids, airway supplies, wound care supplies, and medications for analgesia and sedation will provide the highest return on investment when planning for disasters. Increasing par levels of selected medications and supplies can be critical to accommodate a surge in demand. Consideration should be given to placing beds, monitors, and ventilators that are going out of service into storage rather than selling them whenever possible, as these high-cost items are not likely to be available from vendors during an emergency or disaster. Depending on the institution, purchase of some of these items may be possible.

Medication shortages are common occurrences and allow health care facilities to practice crisis care strategies by using incident management frameworks and engaging SMEs (physicians in the specialty area, pharmacy staff, administration, nursing) in the decision-making process as they cope with dynamic and multiple medication shortages. MDH maintains a Pharmaceutical Shortages for Minnesota Hospitals Frequently Asked Questions document for reference.

When levels of supplies are inadequate, the supply chain and HCC partners cannot provide relief, the health care facility's ICS Planning Section should convene appropriate SMEs to look at existing guidance and develop facility recommendations (note that this can also be done at the health system and regional level as needed). If broader resource challenges are present, the Planning Section or hospital Incident Commander, may ask a Clinical Care Committee to convene in order to assist with addressing service, supply, and staff practices. They can help to focus the facility resources on patient care and make recommendations for any necessary triage of services. For example, discontinuing provision of high-intensity services such as extra-corporeal membrane oxygenation (ECMO) when the resource commitment is unsustainable. Detailed information about the membership and function of the Clinical Care Committee is available in the IOM/NAM 2012 document referenced above and in the template Crisis Care Facility Plan in Appendix 4.1.

In an extreme situation, re-allocation of resources may be necessary (i.e. taking a resource from one patient to give to another). In this case, the gravity and complexity of the situation is markedly increased and the health care facility should have a formal Triage Plan as discussed above (pages 13-16) to reference.

Special Considerations/Capabilities

Certain populations or categories of illness and injury require specialized responses. Health care facilities should have appropriate equipment to initially assess and manage emergent needs while awaiting transfer or admission during a surge incident. Regional planning, training, and exercising for these specialty situations is strongly encouraged. During an event, HCC support for affected facilities can be critical to avoiding or reducing crisis care situations.

Hazardous Materials and Decontamination

Health care facilities should be prepared to provide decontamination services to arriving patients including wet and dry decontamination (dry decontamination = disrobing with redress kits). Dry decontamination may be supplemented by skin wiping (see PRISM guidance: Decontamination Guidance for Chemical Incidents). Provider PPE and training should conform to OSHA Best Practices for Hospital Based First Receivers of Victims from Mass Casualty Incidents Involving the Release of Hazardous Substances. Health care facilities should be prepared for large numbers of patients with inhalational exposures following transportation and fixed-facility incidents that may, at minimum, require dry decontamination.

Pediatrics

Within Minnesota, all hospitals must maintain supplies according to their national or state recognized trauma level[14] and have trained personnel and equipment available to stabilize

[14] Trauma level I and II pediatric trauma hospitals are required to maintain the American College of Surgeons' (ACS) presence of resources and equipment listed in the *Resources for Optimal Care of the Injured Patient.* MDH requires trauma level III and IV

pediatric patients. Additionally, HCCs have pediatric surge annexes to their HCC Response Plans. Plans for a pediatric safe area, patient tracking, and on-site surge or transportation plans should be in place. For more information on pediatric surge planning, including template plans, template exercises, and educational videos, reference the MDH Pediatric Surge Toolkit.

Burns

Per the Minnesota Burn Surge Plan, all acute care hospitals are capable of providing initial triage and resuscitation for burn victims. Minnesota has two American Burn Association (ABA) verified Burn Centers (Hennepin County Medical Center and Regions Hospital) and thirteen Burn Surge Facilities located across the state and North Dakota. Additionally, HCCs have burn surge annexes to their HCC Response Plans. Additional burn education and planning materials are available on the MDH Minnesota Burn Surge website.

High Consequence Infectious Diseases

Health care facilities should have a screening process for fever and international travel that can be updated for domestic exposures and specific countries as required by current outbreaks. Health care facilities should be able to provide airborne isolation for suspect or confirmed cases when applicable. If your facility does not have a negative pressure room, reference the MDH Airborne Infectious Disease Management: Methods for Temporary Negative Pressure Isolation document. For more information on high consequence infectious disease (HCID) planning, PPE, and education videos reference the MDH HCID Toolbox for Frontline Health Care Facilities.

Psychiatric/Behavioral Health Patients

If acute-care hospitals have a locked psychiatric unit, MDH recommends careful consideration prior to rapid discharge of this patient population. Planning should include conversations about how both psychiatric unit and ED staff will handle a potential surge of this patient population and how to keep staff safe from potentially violent psychiatric patients. Clinics and other non-acute-care health care facilities should have conversations if they can provide certain care (e.g. medication refills, therapy sessions etc.) through tele-medicine or alternative means.

Legal and Regulatory Considerations

Local, state, and federal agencies can provide support for crisis operations through a variety of mechanisms including—obtaining resources, providing guidance, and providing policy directives for responders. For a complete overview of the Legal Authority and Environment for Crisis Standards of Care in Minnesota, please review the Legal Considerations of the Minnesota Crisis Standards of Care website. The Minnesota Crisis Standards of Care Framework Legal Authority and Environment reviews the following legal topics:

- Minnesota Law, including, the Minnesota Emergency Management Act (MEMA), Emergency Management Assistance Compact (EMAC), and laws surrounding staff augmentation during a disaster;
- Liability and Other Protections in Emergencies and Disasters;

pediatric trauma hospitals maintain certain equipment capabilities for all ages. See MDH Statewide Trauma System Hospital Resources for more detail.

- Legal Authorities of the Minnesota Department of Health; and
- Federal Law, including, the Stafford Act, Public Health Services Act (PHSA), and 1135 Waivers.

At minimum, to prepare for a pervasive or catastrophic event with public health ramifications that may result in Crisis Standards of Care, MDH recommends:

1. Emergency managers review emergency and response plans and give thought to how responders will receive qualified legal advice to address the important yet unanticipated legal issues that will inevitably arise during a medical surge incident.
2. Emergency managers should work with their attorneys to identify and discuss potential legal issues and legal authorities before disaster strikes.
3. Emergency managers should incorporate Crisis Standards of Care strategies into practice as extensions of current emergency operations or medical surge plans to protect their employees.

Conclusion

Effective crisis care planning for health care facilities depends on multiple factors including the following:

- Crisis conditions may be caused by severe increases in demand and/or facility damage and require immediate facility and regional response, with State actions (including declarations and legal and regulatory action) following and supporting the response strategies.
- Most crisis care situations can be resolved within or between coalitions by diffusing initial impact from one facility to multiple facilities and thus broaden the supply of resources to meet the demand.
- Crisis of care plans should be an extension of hospital surge capacity plans. Integration into the facility all-hazards Emergency Operations Plan is important for seamless response. Formal resource allocation and triage processes may be written into a separate appendix or Attachment.
- Crisis conditions should prompt coalition and, when necessary, prompt State actions to assure that resources are obtained to move care back to contingency and then conventional status as soon as possible.
- Having a process to involve SMEs at the facility in the Incident Command process (including creation of a Clinical Care Committee when feasible based on facility/health system size) is critical to assure fairness and best clinical practices given the limitations of the situation.
- Having a triage process in place is much more important than specific triage decision support tools – incident specific guidance if required will be made available by the MDH, specialty societies, the CDC or HHS/ASPR. General guidance is available on the scarce resource card set from the MDH Science Advisory Team.