Utah Crisis Triage Officer Program Guidebook *(Draft)*

December 2023

Produced in cooperation with

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About the Toolkit

This toolkit was developed to assist healthcare systems and hospitals with the development of the Crisis Triage Officer (CTO) role. This toolkit describes the concepts of Crisis Standards of Care and the Crisis Triage Officer, provides explicit guidance on roles and responsibilities and concepts of operation, and provides additional tools for developing a Crisis Triage Officer program. It is intended to be paired with Utah Crisis Standards of Care guidance but does include enough CSC background to allow for its standalone use for the development of a CTO program.

The UDHHS and UHA convened a committee in 2012 composed of clinicians, emergency managers, legal consultants, and ethicists from around the state to develop the Crisis Standards of Care (CSC) guidance for providing mass casualty care when demand for healthcare services sharply rises and places overwhelming demand on resources and medical staff. This guidance is based on the Institute of Medicine's recommendation. Crisis Standards of Care, consistent with the principles of all-hazard preparedness, are applicable to any catastrophe in which the demand for patient care outweighs the supply of the resources needed. CSC is intended to guide the rational allocation of scarce resources after other measures, such as resource sparing and sharing strategies, have been exhausted.

The purpose of CSC is two-fold. First, we outline a set of changes from everyday patient care staffing, medical equipment, and treatment decisions that are intended to maximize survival for the overall patient population and, at the same time, to minimize the adverse outcomes that might occur because of changes in usual practice. These guidelines are to be implemented only for disasters or pandemics when numbers of seriously ill patients surpass the capability of available care capacity, and normal standards of care can no longer be maintained. Second, by acknowledging the grim reality that patient care during catastrophe will be extremely limited, we hope to foster additional initiatives in planning, education, and practice by which we can do better in our roles as health care providers-even in the face of such adversity.

Application of any CSC guidelines will require and depend upon physician judgment at the point of patient care. Throughout all of Utah's CSC planning work, we have recommended Crisis Triage Officers (CTOs), or CTO Teams be used during contingency and crisis care. Utah's CSC guideline went through many iterations throughout the COVID pandemic. It has been difficult to provide categorical scarce resource allocation decision making guidelines. As a result, current guidance does not include clearcut triage or resource use decision trees. This omission increases the need for this effort to expand and build up the Crisis Triage Officer role.

We passionately believe that the greatest value of Crisis Standards of Care is its ability to help us see that true crisis care is something worth avoiding and that we should focus our best efforts on contingency care, so we can deliver as close to normal care as possible in a resource constrained environment. Similarly, we believe that CTOs have a vital role to play during contingency care to help optimize our contingency strategies.

The bottom line is a fantastic opportunity to enhance our hospitals' readiness through increased clinician engagement in emergency management. This will allow hospitals to help their communities when they are needed most. We think the CTO model is the best mechanism to accomplish this.

Acknowledgments/ Contributors

This toolkit is based on lessons learned implementing a Crisis Triage Officer program at Intermountain Health during the COVID-19 pandemic. The CTO program was based on Utah's Crisis Standards of Care Guideline developed by the Utah Hospital Association Crisis Standards of Care Workgroup, under a contract with the Utah Department of Health and Human Services and the Hospital Preparedness Program Grant (CFDA #93.889), and the U.S. Department of Health and Human Services, Office of the Assistant Secretary for Preparedness and Response. Starting in July 2020, we worked in consultation with the Office for Civil Rights at the U.S Department of Health and Human Services. The views expressed in the publication do not necessarily reflect the official policies of the U.S. Department of Health and Human Services or the Utah Department of Health and Human Services.

Statement on Application of Civil Rights Laws during an Emergency

The foundation of our approach to Crisis Standards of Care is that such tragically complex decisions must be based on criteria that ensure that every patient has equitable access to any care from which they might benefit. This document follows the same list of protected classes as provided in Utah Code 34A–5–107 subparagraph 15 of the Utah Antidiscrimination Act. It meets the CSC ethical goals of fairness, duty to care, transparency, consistency, proportionality, and accountability.

The Americans with Disabilities Act, Section 504 of the Rehabilitation Act, the Age Discrimination Act, and Section 1557 of the Affordable Care Act prohibit discrimination in HHS funded health programs or activities. These laws, like other civil rights statutes, remain in effect during an emergency. As such, persons with disabilities should not be denied medical care based on stereotypes, assessments of quality of life, or judgments about a person's relative "worth" based on the presence or absence of disabilities or age. Decisions by covered entities concerning whether an individual is a candidate for treatment should be based on an individualized assessment of the patient based on the best available objective medical evidence. In addition, the prohibition on the use of quality-of-life judgments in the allocation of treatment resources applies both to assessments of pre- and post-treatment quality of life.

As resources allow, government officials, health care providers, and covered entities should not overlook their obligations under federal civil rights laws to help ensure all segments of the community are served by:

- Providing effective communication with individuals who are deaf, hard of hearing, blind, have low vision, or have speech disabilities using qualified interpreters, picture boards, and other means.
- Providing meaningful access to programs and information to individuals with limited English proficiency using qualified interpreters and through other means.
- Making emergency messaging available in plain language and in languages prevalent in the affected area(s) and in multiple formats, such as audio, large print, and captioning, and ensuring that websites providing emergency-related information are accessible.
- Addressing the needs of individuals with disabilities, including individuals with mobility impairments, individuals who use assistive devices, auxiliary aids, or durable medical equipment, individuals with impaired sensory, manual, and speaking skills, and individuals with immunosuppressed conditions including HIV/AIDS in emergency planning.
- Respecting requests for religious accommodations in treatment and access to clergy or faith practices as practicable.

A Continuum of Care

Three levels of care are defined by the IOM and are the basis for determining levels of surge, resources, and staffing during a disaster. These levels are the basis for Crisis Standards of Care planning:

Conventional care: the demand for care is less than the supply of resources. The level of care is consistent with daily practices in the institution.

Contingency care: the demand for care surpasses conventional resources availability, but it is possible to maintain a functionally equivalent level of care by using contingency care strategies. The facility's Emergency Operations Plan is activated.

Crisis care: the demand for care surpasses resource supply despite contingency care strategies. The normal standard of care cannot be maintained.

Levels of care exist along a continuum as both demand for health care services and supply of resources change over time.

SITUATION	Conventional	Contingency	Crisis
SURGE STATUS	Hospitals utilize normal bed capacity. Occasional and temporary surges of demand may occur that are temporary and may incur longer wait times for non-critical care as hospitals, ICUs, and emergency departments temporarily reach capacity.	Hospitals have surged beyond maximum bed capacity. Emergency Operations Plans are in effect. Elective procedures delayed. Hospitals may be adding patients to occupied hospital rooms and non-patient care areas. Community health care facilities may be requested to surge. Alternative care sites may be opened.	Expanded capacity is still not sufficient to meet ongoing demand for care. Some patients needing care cannot be admitted to hospitals and instead will be sent home or to alternate care sites. Hospitals are adding patients to occupied hospital rooms and non-patient care areas. Community health care facilities are operating beyond the normal scope of practice.
RESOURCE LEVEL	Occasional, limited resource shortages may occur, typically of non-critical supplies or medications with substitution as the most common resource sparing strategy.	Some resources are becoming scarce. Attempts at conservation, reuse, adaptation, and substitution may be performed.	Some or even many critical resources are unavailable, potentially including hospital beds, ventilators, and medications. Critical resources are re-allocated to help as many patients as possible.
STAFF	Usual staffing. Hospital staff absenteeism is not a large problem.	Staff extension (increased patient/provider ratios, expanded scope of practice). Hospital staff absenteeism may be a problem.	Staffing levels at critical shortage. Staff are operating outside the normal scope of practice and have increased patient/provider ratios. Hospital staff absenteeism may be greater than 30%.

Determining the Available Level of Care

It is important to develop useful indicators to recognize where the incident has placed the health care system on the supply and demand curve, and then plan for triggers to alert the system to move from conventional to contingency and to crisis care, as well as back again during the recovery phase.

Because of the unpredictability and sudden onset of a traumatic mass casualty incident, it is much more difficult to develop specific Crisis Care Standards, as opposed to the Pandemic Crisis Standards. Severity, infrastructure damage, location of damage, will all play a key role in determining what level of care can be provided. It will vary from hospital to hospital.

It is important to develop useful indicators to recognize where the incident has placed the health care system on the supply and demand curve, and then plan for triggers to alert the system to move from conventional to contingency and to crisis care, as well as back again during the recovery phase.

A list of system-wide potential triggers that might require activation of Crisis Standards of Care would include:

- An event (or disease) that affects a substantial portion of the State's population and/or health care resources.
- Lack of, or critical shortage of, critical equipment or medications, such as: Mechanical ventilators; Oxygen; Antibiotics, antiviral medication, or specific antidotes; Vasopressors or other critical care medications; Intravenous fluids or blood products; Operating room equipment, space, and staff; and Hospital and/or ICU beds.
- Lack of, or critical shortage of, critical infrastructure, such as power, water, and communications; security to maintain the safety of healthcare providers and patients; lack of personal protective equipment; lack of trained staff, lack of or shortage of staff support (food, housing, water, etc.).

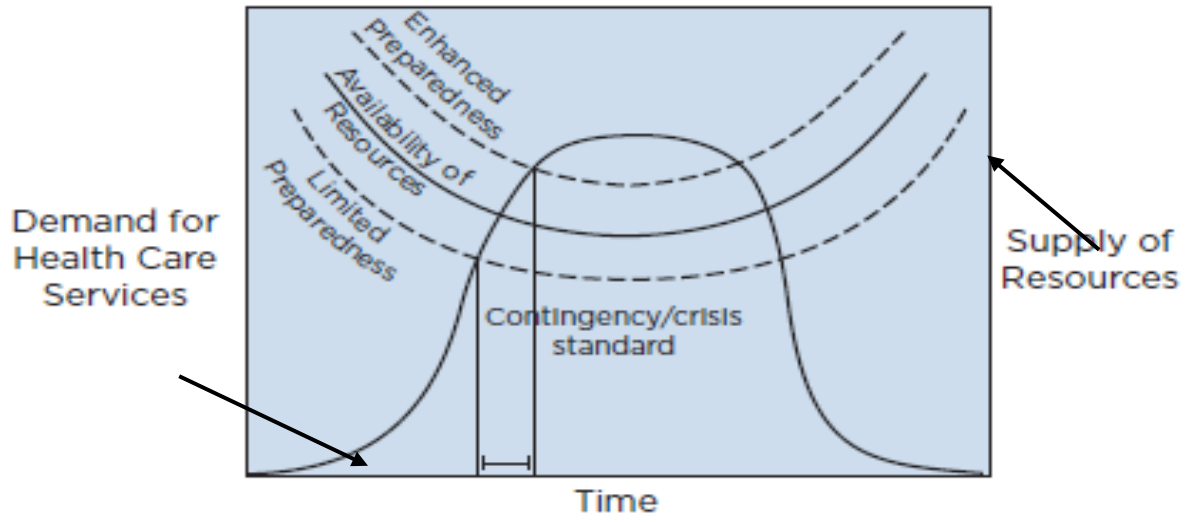
During a crisis, there is a very real risk of providing a lower standard of care than is necessary under the circumstances. Experience, such as that of Memorial Hospital in the aftermath of Hurricane Katrina, has shown that it is common to exaggerate the severity of a situation when immersed in the extreme stress of a crisis. The difficulties inherent in making informed decisions in a crisis cannot be overemphasized. It is always difficult to understand where a single healthcare entity is on the supply/demand curve at any given time, much less the healthcare system. There will be limited, or even inaccurate, information regarding the scale of a disaster, the current and future demand for patient care services, and the current and future supply of resources.

Much progress has already been made in preparing healthcare entities for disasters. Hospitals have strengthened and tested their emergency operations plans. A forward-leaning approach has been developed at the state and federal level that will allow resources to be deployed to an area of need early in a crisis. Given that it is natural to overestimate the demand for care and underestimate the supply of resources, we recommend erring on the side of maintaining contingency care strategies and a functionally normal standard of care until the evidence is overwhelming that the system cannot operate at that level, before moving to crisis standards.

Medical Surge Strategies

There are four core strategies (the Four D's) to be employed (in order of preference) during, or in anticipation of a scarce resource situation**:**

- **Develop** extra supplies by stockpiling and developing supply chain resiliency
- **Delay** care for less urgent conditions and focus on more emergent issues
    - Triage – delay care for patients with less urgent issues
    - Delayed Closure - Delay closing wounds. Nurses or techs can cleanse and dress the wound and instruct the patient to return in 72 to 96 hours (about 4 days) for suture closure.
- **Degrade** Care
    - Early discharge of patients to lower levels of care to make space for new patients
    - Plan for alternate care sites
    - Expand the scope of practice for nurses using standing orders
    - Reuse items after appropriate disinfection or sterilization
        - Substitute equivalent device, drug, or personnel for one that is more available (e.g., morphine for fentanyl)
    - Adapt equipment, drugs, or personnel that are not equivalent but can provide a similar level of care (e.g., anesthesia machine for mechanical ventilation)
    - Conserve resources by using lower doses or changing utilization practices (e.g., minimizing use of oxygen driven nebulizers)
- **Denial** of Care
    - Re-allocate resources to those patients with a better prognosis or greater need
    - Withdrawal of care



Through enhanced preparedness, we can practice conventional and contingency care for as much of the time that we are overwhelmed as possible, to minimize the amount of time that Crisis Standards of Care would be required. *Crisis Standards of Care: A Systems Framework for Catastrophic Disaster Response*

Contingency Care Strategies

The goal of any hospital should be to remain in a state of contingency care for as long as possible and avoid having to initiate Crisis Standards. Examples of strategies that may be considered when conventional care is no longer sustainable, and instead contingency care is needed, include, but are not limited to:

- **Move** appropriate patients from critical care units to step down units and stable step-down patients to a general floor. Utilize a trained team of Case Managers and Discharge Planners to work with the House Supervisors in determining where patients can be moved.
- **Early Discharge or Transfer** appropriate patients to home, alternate care sites, hospice, Skilled Nursing Facilities, or other or Long-Term Care Facilities.
- Expand patient care areas to include hospital corridors and hallways.
- Use of a **rapid admission process** to move appropriate patients from the ED to the hospital wards to make more room in the ED.
- More consistent **withholding of care** that is either futile (any care that is unlikely to be beneficial) or unnecessary (any care that has unproven benefit). This should include reduced use of imaging and laboratory resources when reasonable.
- Prioritize urgent and elective procedures and surgeries, and postpone higher category procedures:
    - **Category 1:** Urgent patients who require surgery within 30 days (about 4 and a half weeks).
    - **Category 2:** Semi-urgent patients who require surgery within 90 days (about 3 months).
    - **Category 3:** Non-urgent patients who need surgery at some time in the future.
- **Documentation** should be increasingly focused on what is needed for patient care, and away from what is needed for billing. Routine documentation practices (especially redundant documentation in multiple sites) must be minimized during an emergency. Checklists or a "short form" medical record may be developed to speed the recording of critical information, including pertinent assessment, diagnosis, and treatment information, including medications administered. Instead of performing and documenting routine assessments, consider only those assessments that are essential to monitor a particular patient's condition. Hard copy forms must be developed and available in case of loss of computer, printer, or Internet capabilities.
- In the clinical setting, staff may also become scarce; shortages of types of practitioners may require expanding the roles of others. Move providers to areas needing additional resources, such as the emergency department and/or critical care areas. **Expanded staff roles** also should occur incrementally and only for as long as necessary. Those performing expanded roles should be under the supervision of an experienced, licensed MD or DO, APRN, RN, or other person of appropriate discipline for the specific types of care, who delegates and directs a team of health care workers and oversees a patient caseload. Planning should include volunteers in the MRC system and others involved in organized efforts in the State. All staff should receive training and drill their expanded roles, if possible. Staff and volunteers should also receive just-in-time training as needed.
- **Reduce nursing care requirements**. Adjustments may need to be made in the frequency of assessments and routine care, e.g., a diabetic patient having four glucometer measurements each day may have them done twice a day, vital signs may be taken only twice a day. If possible, rely on patient families for patient hygiene and feeding assistance whenever possible. Specific treatments or interventions scheduled to be administered regularly may have the interval between them extended. For example, if a patient is scheduled to have

respiratory nebulizer treatments every six hours, the treatments may be reduced to every eight hours. Some treatments or interventions may be discontinued completely if the potential harm to the patient is minimal, if there is an absolute lack of staff to perform the task, or if no equipment is available. Decision-makers should strive to preserve equity between the needs of patients suffering from emergency and patients who need urgent treatment for other illnesses.

- **Modification of consent/refusal process**. During a prolonged public health emergency, some of these requirements may need to be modified according to the condition of the patient, or if there is not sufficient time to obtain the informed consent/refusal from a person authorized to make health care decisions for the patient, e.g., next-of-kin. Make certain that appropriate numbers of hard copies of these documents are available in case of computer or printer failure.
- Changing infection control standards to permit group isolation rather than single person isolation units, to allow cohering of patients.
- Changing privacy and confidentiality protection procedures temporarily to allow for the establishment and activation of a family support center. The Center will have the responsibility of identifying and reunifying patients with next of kin will act as liaison with the Red Cross in establishing missing persons links
- Increased **focus on proven medical interventions** and therapies that provide significant benefit, while foregoing interventions and therapies that lack unambiguous evidence of benefit.
- **Preserve oxygen capacity** by minimizing its unnecessary use.
- **Communicate with other facilities for help accepting patients and sharing staffing, pharmaceuticals, and necessary equipment.**
- **Expanded use of telemedicine and virtual care** when appropriate.
- While difficult, facilities must make every **attempt to comply with regulatory requirements** during a prolonged public health emergency and to document such attempts contemporaneously. Utah Administrative Rules allow hospitals to surge up to 20% above their licensed bed capacity without State approval. If a hospital is going to surge beyond that point, efforts should be made to receive State approval. If it is not possible, the efforts should be documented. When no longer able to comply, facilities should utilize the process for requesting emergency modifications and suspensions of regulatory requirements from both state and federal regulatory agencies (e.g., Health Insurance Portability and Privacy Accountability (HIPAA), 17 provisions of the Emergency Medical Treatment and Active Labor Act (EMTALA),18 staffing ratios, scope of practice restrictions).

Crisis Care Strategies

Examples of strategies that may be considered when contingency care is no longer sustainable, and the UCSCG is in effect, include, but are not limited to:

- The contingency care strategies previously listed.
- Ensure facility security by restricting access to the facility to only one or two entrances. Other access points should be locked and guarded. Access to the emergency department should also be restricted and uniformed police presence should be in place if possible.
- Creating patient care areas in pre-designated locations, such as the hospital(s) cafeteria, radiology suites, corridors, atrium, athletic centers, or research buildings.
- Emergency Department access must be reserved for immediate-need patients; ambulatory patients may be diverted to other pre-designated ambulatory care settings, such as urgent cares and doctor's offices.

- Creating **alternate care sites** by requesting local, regional, state and/or federal response assets (such as EMS strike teams, Disaster Medical Assistance Teams, Medical Reserve Corps) to be deployed.
- More drastic changes to the scope of practice may be needed, requiring health care staff to take on **expanded roles**, and function outside their specialties.
- More drastic reduction of nursing care requirements.
- Applying principles of the **State approved triage** and graded scoring system, if they exist, to determine who should receive aggressive medical care and who should receive palliative care. Under some circumstances, resource intensive interventions may be withheld.
- **Credentialing** of providers on an emergency or temporary basis.
- **Increased withholding of care** and exclusive focus on medical interventions and therapies that have proven and significant benefit, while foregoing interventions and therapies that lack unambiguous evidence of benefit or have high resource utilization.
- **Documentation** should be limited only to what is needed for patient care.
- **Place limits on oxygen use**, such as stopping all hyperbaric treatments.
- **Utilization of State approved triage guidelines, if they exist, and use of the Crisis Triage Officer role**

Crisis Standards of Care Activation and Termination

When activated: Crisis Standards of Care should be activated in a public health emergency. Individual healthcare facilities and organizations will manage their responses through their designated emergency operations plans and incident command structures. In turn, local hospitals will communicate with both local and state health department emergency operations centers as well as their regional healthcare coalitions to provide situational awareness and coordination regarding local response efforts and requests.

When a situation is statewide, CSC will apply to all healthcare professionals, clinics, facilities, and patients in Utah when in effect.

When the situation is limited to a specific area of the state: CSC will only apply to the affected medical community and the immediate surrounding communities. However, if non-impacted community medical facilities are overwhelmed as a direct result of the event (population displacement, resource shortages, staffing shortages) consideration will be provided to extend the protections on a case-by-case basis.

Termination of Crisis Standards of Care: As the severity of an event subsides, the scarcity of certain resources may be resolved at separate times (e.g., critical care beds may be available, but ventilators may remain scarce). Each institution should apply their hospital triage plan based on the availability (or lack thereof) of resources during daily assessments. When resources are no longer scarce, termination of Crisis Standards of Care should occur and UDHHS should be notified by the institution. Facilities should strive to return to contingency or conventional care as quickly as possible.

Crisis Triage Officers (CTO) and Crisis Triage Officer Team (CTOT)

CTO Identification

Because Crisis Standards of Care represents a notable change in thinking in how we normally care for patients and prioritize treatments, it is important that **Crisis Triage Officers (CTOs)** be identified beforehand from among the facility's medical staff. These physicians should be familiar with the concepts of disaster operations specific to the incident, and should include trauma surgeons, intensive care physicians, emergency physicians, infectious disease, and/or internists with extensive hospital experience. Crisis Triage Officers should not be involved in both crisis triage and direct patient care simultaneously. Consider the communication skills and temperament of the CTO candidate. Calm, rational, thoughtful discussion and prompt decisions will be required. Smaller facilities may have more difficulty identifying CTOs and may consider partnering with other facilities to share CTOs. Telemedicine support may also provide additional off-site CTO support. A communication system, such as a text thread, radio, or virtual meeting platform should be created amongst identified CTOs and other applicable hospital leadership.

CTO Training

When identified before a disaster, CTOs may benefit from additional training in mass casualty triage, ethics, communications, incident management, crisis resource management, and the importance of situational awareness. When identified during a disaster, just-in-time training on Disaster planning/response and Utah Crisis Standards of Care (CSC) should be provided.

Crisis Triage Officer Teams (CTOT)

Facilities are encouraged to establish a two- to five-member Crisis Triage Officer Team (CTOT). In addition to trained Crisis Triage Officers, additional members may include the following: the hospital medical director, risk manager, nursing supervisor, board member, chaplain, palliative care, social work, and other physicians. These supporting team members assist with but do not make final decisions about allocation of scarce resources. The ideal team size creates enough depth to ensure personnel are available to serve in the role and so duties can be handed off on a regular rotating basis. In smaller facilities another hospital CTOT can be used to supplement. Consider the communication skills and temperament of the team members. Calm, rational, thoughtful discussion and prompt decisions will be required.

CTO and CTOT Roles and Responsibilities

In the event of a disaster, CTOs or CTOTs will ensure that contingency strategies are optimized, oversee the implementation of CSC criteria, and will be part of a peer-based structure for the review of hospital admission, Intensive Care Unit (ICU) admission (if the facility has an ICU), and withdrawal from ICU care. CTOs should evaluate daily all patients receiving scarce resources and evaluate those requested to be considered for scarce resources as they arise, in accordance with the state CSC guidelines. The CTO or CTOT will review all patients for whom those patients' individual providers (treating physicians) have requested a scarce resource (such as ICU admission, ventilator support, or surgical care) to determine which patients will receive the highest priority for receiving those limited resources. In addition, the CTO or CTOT will review patients currently receiving scarce resources to assess ongoing need for and priority in receiving those resources. The CTO will share decisions with the treating physician, who is then responsible for informing patients and family members.

They will communicate facility level capability to the facility Incident Command, to be then shared with the system and state. They will hear appeals from families and critical care providers when appropriate. Outside of disaster response, CTOs should work closely with their facility's Emergency Manager to ensure ongoing preparedness efforts, particularly to improve the awareness and participation of other physicians in preparedness efforts.

Hospital CTO, System CTOT, and State Relationships

Hospital CTO/CTOT

- Ensure optimization of contingency strategies within the hospital
- Triage decisions guided by supply and demand locally and regionally

Healthcare System CTOT

- Ensure optimization of contingency strategies across the system
- Close alignment and collaboration with system level transfer center
- Load leveling internally and externally
- Education of staff to CSC Guidelines
- Decide appeals
- Support hospital CTOTs
- Escalate concerns to the UHA CSC Workgroup

UHA/UDHHS CSC Workgroup

- Update CSC Guideline, based on evidence and experience
- Load leveling
- Support Fair and Equitable care delivery

CTO Concept of Operations by Event Type: CTO Activation

Advanced Notice -Slow Onset -Widespread Disaster (e.g., COVID)
CTO teams may be variably active at the local facility level during conventional and contingency phases of care. Activity includes training, working with local IC on contingency and crisis planning, and working with system CTO team on refining operations. In deeper contingency all CTOs should be activated to play a role in local situational awareness of patient demand and resource supply. They can pass this awareness to the system CTO team as well as through IC. CTOs will need a close connection to/awareness of statewide load-leveling activities. The transfer center CTO role is activated during deep contingency when bed availability is minimal and can be an additional conduit of information on capacity. Crisis Standards are invoked at the state and subsequently system level. CTOs begin work on assisting with allocation decisions at the local level, with support from system CTO team and the transfer center. If local CTO capacity is inadequate or biased, either the system CTO team or the CTO Transfer Center Rep can directly assist or can designate another local CTO team to assist. CSC is deactivated by the state and system as resource availability improves, and communication occurs between the system CTO and local CTO teams.

No Notice - Medium Term - Widespread Disaster (e.g., Earthquake)
The decision to invoke Crisis Standards must be made quickly by local CTO teams, with as much additional situational awareness from the system as is possible, while optimizing all available contingency strategies. System CTO and IC will coordinate within the system, with other systems, and

the state to quickly lift affected hospitals out of Crisis Standards. If this is not possible, Crisis Standards should be invoked at the state or at least regional level.

No Notice - Short Term - Localized Disaster (e.g., MCI)
The decision to invoke Crisis Standards must be made quickly by local CTO teams, with as much additional situational awareness from the system as is possible, while optimizing all available contingency strategies. System CTO and IC will coordinate within the system, with other systems, and the state to quickly lift affected hospitals out of Crisis Standards. Crisis Standards are unlikely to be invoked at state level.

Appendix A - Resource Specific Strategies

(Based upon documents from the Minnesota Healthcare System Preparedness Program)

Oxygen Recommendations

Inhaled Medications		
Restrict use of Small Volume Nebulizers when inhaler substitutes are available.		
Restrict continuous nebulization therapy.		
Minimize frequency through medication substitution that results in fewer treatments (6h -12h instead of 4h-6h applications).		
High-Flow Applications		
Restrict use of high flow cannula systems (these can demand 12 to 40 LPM flows).		
Restrict the use of simple and partial rebreathing masks to 10 LPM maximum.		
Restrict use of Gas Injection Nebulizers (require 10 to 75 LPM flows).		
Eliminate oxygen-powered Venturi suction systems (consume 15-50 LPM).		
Air-Oxygen Blenders		
Eliminate the low-flow reference bleed occurring with any low-flow metered oxygen blender. Reserve air-oxygen blender use for mechanical ventilators using high-flow non-metered outlets.		
Disconnect bleeders when not in use.		
Oxygen Conservation Devices		
Use reservoir cannulas at 1/2 the flow setting of standard cannulas.		
Replace simple and partial rebreather mask use with reservoir cannulas at flowrates of 6-10 LPM.		
Oxygen Concentrators if Electrical Power is Present		
Use hospital-based or independent home medical equipment supplier oxygen concentrators if available to provide low-flow cannula oxygen for patients and preserve the primary oxygen supply for more critical applications.		
Monitor Use and Revise Clinical Targets		
Employ oxygen titration protocols to optimize flow or % to match targets for SP02 or PaO2.		
Minimize overall oxygen use by optimization of flow.		
Discontinue oxygen at the earliest possible time.		

Starting Example	Initiate 02	02 Target
Normal Lung Adults	SP02 <90%	SP02 90%
Infants and Peds	SP02 <90%	SP02 90-95%
Severe COPD History	SP02 <85%	SP02 90%
Note: Targets may be adjusted further downward depending on resources available, the patient's clinical presentation or measured Pa02 determination		
Expendable Oxygen Appliances		
Use terminal sterilization or high-level disinfection procedures for oxygen appliances, small and large-bore tubing, and ventilator circuits. Bleach concentrations of 1:10, high-level chemical disinfection or irradiation may be suitable. Ethylene oxide gas sterilization is optimal but requires a 12-hour aeration cycle to prevent ethylene chlorohydrin formation with polyvinyl chloride plastics.		
Oxygen Re-Allocation		
Prioritize patients for oxygen administration during severe resource limitations.		
Mechanical Ventilation/External Oxygenation		
Access Alternative Sources for Ventilators/Specialized Equipment		
Obtain specialized equipment from vendors, healthcare partners, regional, state, federal stockpiles via usual emergency management processes and provide just-in-time training and quick reference materials for obtained equipment.		
Decrease Demand for Ventilators		
Increase threshold for intubation/ventilation.		
Use non-invasive ventilatory support when possible.		
Re-use Ventilator Circuits		
Appropriate cleaning must precede sterilization.		
If using gas (ethylene oxide) sterilization, allow full 12-hour aeration cycle to avoid accumulation of toxic by-products on surfaces.		
Use irradiation or other techniques as appropriate.		
Use Alternative Respiratory Support Technologies		
Use transport ventilators with appropriate alarms- especially for stable patients without complex ventilation requirements.		
Use anesthesia machines for mechanical ventilation as appropriate/capable.		

Use bi-level (BIPAP) equipment to provide mechanical ventilation.		
Consider bag-valve ventilation as a temporary measure while awaiting definitive solution/ equipment (as appropriate to situation) - extremely labor intensive and may consume substantial amounts of oxygen.		
Assign Limited Ventilators to Patients Most Likely to Benefit if no Other Options are Available		

Medication Administration

Cache/ Increase Supply Levels	
Patients should have at least 30-day supply of home medications and obtain 90-day supply if pandemic, epidemic or evacuation is imminent.	
Examine formulary to determine commonly used medications and classes that will be in immediate, high demand.	
Increase supply levels or cache critical medications, particularly for low-cost items and analgesics.	
Analgesia	Morphine, other narcotic and non-narcotic (non-steroidal, acetaminophen) classes, injectables and oral (narcotic conversion tool at http://www.globalrph.com/narcoticonv.htm).
Sedation	Particularly benzodiazepine (lorazepam, midazolam, diazepam) injectables
Anti-Infective	Narrow and broad-spectrum antibiotics for pneumonia, skin infections, open fractures, sepsis (e.g., cephalosporins, quinolones, tetracyclines, Macrolides, aminoglycosides, clindamycin, etc.) select antivirals.
Pulmonary	Metered dose inhalers (albuterol, inhaled steroids), oral steroids (dexamethasone, prednisone)
Behavioral Health	Haloperidol, other injectable and oral anti-psychotics, common anti-depressants, anxiolytics
Other	Sodium bicarbonate, paralytics, induction agents (etomidate, propofol,) proparacaine/tetracaine, atropine, pralidoxime, epinephrine, local anesthetics, antiemetics, insulin, common oral anti-hypertensive, and diabetes medications.
Use Equivalent Medications	
Obtain medications from alternate supply sources (pharmaceutical representatives, pharmacy caches)	
Pulmonary	Metered dose inhalers instead of nebulized medications.
Analgesia/Sedation	Consider lorazepam for propofol substitution and other agents in short supply.

	ICU analgesia/sedation drips Morphine 4-10mg IV load then 2mg/hr and titrate/re-bolus as mg IV load as needed. Usual 3-20 mg/h; Lorazepam 2-8mg or midazolam 1-5mg IV load then 2-8mg/h drip
Anti-infective	Examples: cephalosporin, gentamicin, clindamycin substitutes for unavailable broad-spectrum antibiotic
	Target therapy as soon as possible based upon organism identified.
Other	Beta blockers, diuretics, calcium channel blockers, ace inhibitors, anti-depressants, anti-infectives
Reduce Use During High Demand	
Restrict use of certain classes if limited stocks are likely to run out. Restrict prophylactic/empiric antibiotics after low-risk wounds, etc.	
Decrease dose; consider using smaller doses of medications in high demand/likely to run out (reduce doses of medications allowing blood pressure or glucose to run higher to ensure supply of medications adequate for anticipated duration of shortage).	
Allow use of personal medications (inhalers, oral medications) in hospital.	
Do without - consider the impact if medications not taken during shortage (statins, etc.).	
Modify Medication Administration	
Emphasize oral, nasogastric, subcutaneous routes of medication administration.	
Administer medications by gravity drip rather than IV pump if needed. IV drip calculation - drops/minute = amount to be infused x drip set/time(minutes) (drip set = qtt/mL - 60, 10, etc.)	
Rule of 6: Pt wgt(kg) x 6 = mg drug to add to 100 mL fluid = 1mcg/kg/min for each 1mL/hour. Note: For examples, see http://www.dosagehelp.comiv rate drop.html	
Consider the use of select medications beyond expiration date. (Legal protection such as Food and Drug Administration approval or waiver required.)	
Restrict Allocation of Select Medications	
Allocate limited stocks of medications with consideration of regional/state guidance and available epidemiological information (e.g., anti-viral medications such as oseltamivir).	
Allocate limited stock to support other re-allocation decisions (ventilator use, etc.)	

Staffing Strategies

Focus Staff Time on Core Clinical Duties
Restrict elective appointments and procedures.
Reduce documentation requirements.
Cohort patients conserve PPE and reduce staff PPE donning and doffing time and frequency.
Use Supplemental Staff
Bring in equally trained staff from whatever resources available.
Adjust personnel work schedules (longer but less frequent shifts, etc.) If this will not result in skill/PPE compliance deterioration.
Use family members/lay volunteers to provide basic patient hygiene and feeding, releasing staff for other duties.
Focus Staff Expertise on Core Clinical Needs
Personnel with specific critical skills (ventilator, ICU) should concentrate on those skills; specify job duties that can be safely performed by other medical professionals.
Have specialty staff oversee larger numbers of less-specialized staff and patients (for example, a critical care nurse oversees the intensive care issues of nine patients while three medical/surgical nurses provide basic nursing care to three patients each.)
Use Alternative Personnel to Minimize Changes to Standards of Care
Use less trained personnel with appropriate mentoring and just-in-time education (e.g., healthcare trainees or other healthcare workers, Medical Reserve Corps, etc.)
Use less trained personnel to take over portions of skilled staff workload for which they have been trained.
Provide just-in-time training or specific skills.

Hemodynamic Support and IV Fluids

Recommendations
Cache additional IV cannulas, tubing, fluids, medications, and administration supplies.
Use scheduled dosing and drip dosing when possible
Reserve IV pump use for critical medications such as sedatives and hemodynamic support.
Minimize invasive monitoring
Substitute other assessments (e.g., clinical signs, ultrasound) of central venous pressure (CVP).
When required, assess CVP intermittently via manual methods using a bedside saline manometer or transducer moved between multiple patients as needed, or by height of blood column in CVP line held vertically while patient is supine.
Emphasize oral hydration instead of IV hydration when possible.
Utilize appropriate oral rehydration solution

Oral rehydration solution: 1 liter of water (5 cups) + 1 tsp salt +8 tsp sugar, add flavor such as 1/2 cup orange juice, as necessary.
Rehydration for moderate dehydration = 50-100ml/kg over 2 to 4 hours.
Pediatric hydration
Pediatric maintenance fluids:
4ml/kg/h for first 10kg of body weight (40ml/hr for 1st 10 kg).
2 ml/kg/hr for second 10kg of body weight (20 ml/hr for 2nd 10 kg = 60ml/hr for 20kg child.)
1 ml/kg/h for each kg over 20 kg (60ml/hr plus 20ml/hr = 80ml/hr
Supplement for each bout of diarrhea or emesis.
Note: Clinical (urine output, etc. and laboratory (BUN, urine specific gravity) assessments and electrolyte correction are key components of fluid therapy and are not specifically addressed by these recommendations. For further information and examples, see http://www.ped.med.utah/cai/howto/IntravenousFluidOrders.PDF
Provide Nasogastric Hydration instead of IV hydration when practical.
Patients with impediments to oral hydration may be successfully hydrated and maintained with nasogastric tubes.
For fluid support, 8-12 f tubes (pediatric infant 3.5 f, <2yrs 5f) are better tolerated than standard sized tubes.
Substitute Epinephrine for other vasopressor agents
For hemodynamically unstable patients who are adequately volume resuscitated, consider adding 6mg epinephrine (6ml of 1:1,000) to 1000ml NS on mini drip tubing and titrate to target blood pressure.
Epinephrine 1:1000 (1mg/ml) multi-dose vials available for drip use.
Re-use CVP, NG and other supplies after appropriate sterilization/disinfection
Cleaning for all devices should precede high-level disinfection or sterilization.
High-level disinfection for at least twenty minutes for devices in contact with body surfaces (including mucous membranes); glutaraldehyde, hydrogen, peroxide 6%, or bleach (5.25%) diluted 1:20 (2500ppm) are acceptable solutions.
Note: Chlorine levels reduced if stored in polyethylene containers. Double the bleach concentration to compensate.
Sterilize devices in contact with bloodstream (e.g., ethylene oxide sterilization for CVP catheters.
Intraosseous/Subcutaneous (hypodermoclysis) replacement fluids
Consider as an option when alternative routes of fluid administration are impossible/unavailable.
Intraosseous before percutaneous.
Intraosseous
Intraosseous infusion is not recommended for hydration purposes but may be used until alternative routes are available. Intraosseous infusion requires a pump or pressure bag. The rate of fluid delivery is often limited by pain of pressure within the marrow cavity. This may be reduced by pre-medication with lidocaine 0.5 mg/kg slow iv push.

Hypodermoclysis
Cannot correct more than moderate dehydration via this technique.
Many medications cannot be administered subcutaneously.
Common infusion sites: pectoral chest, abdomen, thighs, upper arms.
Common fluids: normal saline (NS), D5NS, D5 1/2 NS (Can add up to 20-40 mEq potassium if needed.)
Insert 21–24-gauge needle into subcutaneous tissue at a 45-degree needle. Adjust drip rate to 1-2 ml per minute. May use 2 sites simultaneously if needed.
Maximal volume about 3 liters/day: requires site rotation.
Local swelling can be reduced with massage to area.
Hyaluronidase 150 units/liter facilitates fluid absorption but not required; may not decrease occurrence of local edema.
Consider the use of veterinary and other alternative sources for intravenous fluids and administration sets.

Blood Products

Healthcare Facility Recommendations
Packed Red Blood Cells
Use cell-saver and auto-transfusion to degree possible.
Limit O negative use to women of child-bearing age.
Use O positive in emergent transfusion in males or non-childbearing females to conserve O negative.
More aggressive crystalloid resuscitation prior to transfusion in shortage situations (blood substitutes may play future role).
Long term shortage, collect autologous blood pre-operatively and consider cross-over transfusion.
Enforce lower hemoglobin triggers for transfusion (for example, HGB 7).
Consider the use of erythropoietin (EPO) for chronic anemia in appropriate patients.
Further limit PRBC use, if needed, to active bleeding states, consider subsequent restrictions including transfusion only for end organ damage, then shock states only.
Consider limits on use of PRBCs (for example, only initiate for patients that will require <6 units PRBCs and/or consider stopping transfusion when >6 units utilized).
Fresh Frozen Plasma
Though not a true substitute, consider use of fibrinolysis inhibitors or other modalities to reverse coagulopathic states (tranexamic acid, aminocaproic acid, activated coagulation factor use, or other appropriate therapies).
Consider reduction in red cell: FFP ratios in massive transfusion protocols in consultation with blood bank medical staff.
No anticipatory use of FFP in hemorrhage without documented coagulopathy.

Platelets
Though not a true substitute, consider the use of desmopressin (DDAVP) to stimulate improved platelet performance in renal and hepatic failure patients.
Transfuse platelets only for active bleeding; further restrict to life-threatening bleeding if required by situation.
No prophylactic use of platelets.
Blood Bank Recommendations
All Blood Products
Increase donations if required and consider the local increase in frozen reserves.
Increase O positive levels.
Consider maintaining a frozen blood reserve if there is a severe shortage.
Increase recruitment for specific product needs.
Consider adjustments to donor HGB/HCT eligibility.
Relax travel deferrals for malaria and BSE (bovine spongiform encephalitis) (FDA approval/variance required via American Association of Blood Banks).
Packed Red Blood Cells
Change donations from whole blood to 2x RBC apheresis collection if specific shortage of PRBCs.
Reduce or waive usual 56-day inter-donation period (FDA approval/variance required via American Association of Blood Banks) based upon pre-donation hemoglobin.
Reduce weight restrictions for 2x RBC pheresis donations according to instruments used and medical director guidance. (FDA approval/variance required via American Association of Blood Banks).
Fresh Frozen Plasma
Obtain FDA variance to exceed 24 collections per year for critical types (FDA approval/variance required via American Association of Blood Banks).
Platelets
May use leukoreduced whole blood pooled platelets (and, if required, consider non-leukoreduced whole blood pooled platelets).
Convert less needed ABO whole blood to apheresis.
Accept female platelet donors without HLA antibody screen.
Apply for variance of 7 day outdate requirement (FDA approval/variance required via American Association of Blood Banks).
Consider a 24 hour hold until the culture is obtained and immediate release for both Pool and Apheresis.
Obtain FDA variance to allow new Pool and Store sites to ship across state lines. (FDA approval/variance required via American Association of Blood Banks).
Reduce pool sizes to platelets from 3 whole blood donations.

Appendix B - CTO Concept of Operations for Blood Shortage

CTO Role

- Ensure rapid communication capability with hospital leadership.
- Confirm with hospital leadership that treating providers know how to contact the HMD and CTOs.
- Participate in a daily huddle or similar information sharing with local hospital leadership, transfusion services, and clinical leaders on local blood supply and anticipated demand.
- Participate in system huddles; escalate concerns and barriers.

CTO Consult Checklist During Blood Shortage

- ☐ Discuss the patient with the treating provider to ensure that clinical information is accurate.
- ☐ Assist the treating provider in ensuring that non-blood product interventions are being utilized (reference Intermountain Patient Blood Management Contingency Guidance).
- ☐ Have these been exhausted?
- ☐ What barriers can be removed?
- ☐ Determine updated blood product supply from Transfusion services / Transfer Center, and/or system leadership.
- ☐ Can the patient be transferred where additional care is available?
- ☐ Can blood product supply be sent?
- ☐ Verify patient/decision maker's understanding, goals of care, and advance care plan with treating provider, independent of any allocation decisions or restrictions.
- ☐ Verify any advance directives as needed.
- ☐ Connect with Palliative Care team as appropriate.
- ☐ Evaluate the patient's risk of acute morbidity and mortality without standard transfusion.
- ☐ What role may the patient's comorbidities play in short-term prognosis?
- ☐ If needed, consult providers in applicable fields.
- ☐ Consider equity concerns; strive to identify bias.
- ☐ Escalate allocation decisions to system CTO or other medical leadership, when possible, to ensure lack of other contingency options.
- ☐ Make the needed patient care / resource allocation decision, with or without assistance from other CTOs or HMDs.
- ☐ Confirm allocation decision with treating provider. Assist with connection to Palliative Care team as appropriate.
- ☐ Document using free text note or CTO note if available, any limits placed on blood product use due to supply constraints, and the decision-making process utilized.

Blood Shortage Scripting

Before conversation: Conduct thorough chart review and discussion with consulting teams including advance care plan, differential, and options for treatment.

Introducing Conversation:
"I have some serious updates about your treatment plan. Is there anyone you would like to join our conversation?" (Pause for response or questions)
"Specifically, we need to talk about blood transfusions, would you like me to explain what I mean when I say blood transfusion?" (Pause for response or questions)
"Your body does not have enough (blood product type), and we are trying to figure out how to help

with that. Usually we would give (blood product type), but right now there is not enough (blood product type) for everyone that needs it. That means that we will not be giving you (blood product type), and instead will (treatment plan)." (Pause for response or questions)
"This is not something that we have ever had to do before, and we are trying to help as many people as we can. Would it be useful for you to know how these decisions are made?" (Pause for response or questions)

Follow up if a concern is raised:
General process: "That is a great question and we have done everything we can to answer it correctly for the people we take care of. We take a lot of things into account including how well your body would use the blood to heal, what alternatives we have, and what preferences people have for their treatment. It is a difficult question, and we have had many people in and out of your treatment team help make it."
Equity: "One of our most important jobs is making sure that you get the best care possible without being discriminated against in any way. The measures we use include the possible benefit of blood, alternatives to giving blood, and your preferences. We have been careful to make sure that none of these things are linked to age, race, ethnicity, or disability."

CTO Blood Product Shortage Scenarios

Case 1

Background:
John Doe is a 52-year-old male presenting to the ED with decreased LOC, Jaundice, abdominal ascites, and general malaise. While in the ED he has approx. 600 cc melena stool. He is confused and lethargic with general weakness. His ETOH level upon arrival was 160. Tox screen is negative. He is unable to answer questions about his medical history or current location.

Assessment:
Physical: BP: 86/48 HR: 130 Resp: 26 02 Sat: 85 % on 5 L NC
Neuro: Patient confused and unable to answer questions. Moans to painful stimuli
Cardio: Sinus Tach/ no murmur noted Respiratory: 5 L NC, 85 % CO_2
GI: hyperactive, abdominal ascites Skin: Jaundice
Last set of labs: WC 12 HCT 18 Hgb 6.4 PLTS 55 Lactate 5 PT/INR 3.5 Liver enzymes elevated

Situation: Moderate Blood Product shortage when patient arrives.

Initial Recommendations:
Blood product use?
POLST/family?

Progress:
Patient admitted to ICU. Started on PPI and Octreotide.
Has hematemesis. HR 140 BP 65/30.
Trauma 1 activations in the ED have been called. 2 GSWs (1 abdomen and 1 head).

Recommendations?

Case 2

Background:
77 yo old male involved in an MVC and had to be extricated over an extended period, brought to IMED as trauma 1 activation. Patient is cool and diaphoretic. No loss of consciousness is noted but the patient is combative and uncooperative.
Patient was crossing an intersection when he was T-boned at 60 mph. Extraction time from car was lengthy. Paramedics report that the patient is confused and non-cooperative. The patient's family has not been notified.

Assessment:
GCS 3+4+5=12
From EMT: 88/54, HR: 110, RR: 24
Peripheral pulses are weak. Pale and diaphoretic. Diaphoretic.
Large seatbelt bruise across the lower half of the patient's abdomen and bruise at top of the left shoulder. The bruise across the lower abdomen needs to be significant.
FAST positive

Situation: Severe blood shortage

Recommendations?

Case 3

Background:
32-year-old G7, P5 (4,1,1,5) Presented to L&D at Rural hospital in spontaneous labor at 40.1 weeks gestation. Pitocin was required to augment labor. After 18 hours in active labor, 1 hour of pushing she delivered a 4720g male via vacuum assisted vaginal delivery. OB provider repaired a 3rd degree perineal laceration. EBL @ delivery 500ml. Pt is A- blood type and received Rhogam, GBS negative. She was diagnosed with gestational diabetes. Blood glucose levels have been stable 110-140 with diet control.

Assessment:
Pt is 30min post-delivery. Infant with mom skin to skin but has not breastfed yet. VS Stable. LOC: Alert and Oriented, shivering. Pt is cold and states she is too nauseated to BF infant. Fundus slightly firm and at umbilicus, Initial lochia is moderate-heavy no clots. current weighed output of 250ml.

Situation:
Moderate blood shortage

Follow-up:
Large amount of vaginal bleeding with clots. Exceeds 1000 ml amount on Chux pad.

Initial Recommendations?
Methergine 0.2mg/ml 1 ml vial IM
IV Pitocin 30 units per 500ml bag
Pitocin 10 units/ ml in a 1 ml vial

Hemobate 250 mcg/ml in 1 ml vial IM
Cytotec 800 mcg Rectal tabs 200 mcg per tab
TXA 1gm/100 ml bag

Follow-up: Uterine fundus now at 2+, boggy, and displaced to the left. HR 110 BP 100/60 RR 20 Sat 95%

Follow-up: Heavy Hemorrhage HR 120 RR 22 Sat 85% BP 90/60

Follow-up: Syncope HR 140 RR 26 Sat 80% BP 70/40

Recommendations?

Appendix C - Crisis Triage Scenarios

Principles

1. Review these with others as a tabletop exercise – do not just read alone.
2. Preparing now may help us forestall moving to crisis care.

Case 1

There is one remaining ICU bed and one available ventilator at your facility.
There are three patients are in the emergency department:

a. 52-year-old with pancreatic cancer, altered mental status (GCS 9), jaundice, acute renal failure (Creatinine of 6.0 and potassium of 8), SaO2 92% on 6L NC
b. 65- year-old otherwise healthy with dry cough and SaO2 90% on 15L facemask
c. 45-year-old with history of obesity, diabetes and hypertension with dry cough, diarrhea, hypotension (MAP 60) and SaO2 88% on 15L facemask

How would you handle this scenario?
What other steps would you take?
What consequences can you foresee?

Case 2

There is one remaining ICU bed and one available ventilator at your facility.

The daily incident command huddle relays that no additional ICU capacity exists anywhere in Utah, and no transfers will be accepted for ICU-level care.

There are three patients in the emergency department:

a. 64-year-old male intubated in the ED for respiratory distress, altered mental status (GCS 12), and inability to maintain airway
b. 73-year-old female with pneumonia and septic shock (MAP 61 on norepinephrine drip at 0.1 mcg/min), acute kidney injury with creatinine 3.2, SaO2 93% on 8L NC
c. 36-year-old male injured in an ATV rollover, GCS 3, SBP 82, RR 34, under resuscitation with R chest tube for hemo/pneumothorax

How would you handle this scenario?
What other steps would you take?
What consequences can you foresee?

Case 2 continued:
The care team calls you. The family of the patient for whom you did not recommend ICU care is upset and tells the team that they will sue for malpractice.
How would you handle this scenario?
What other steps would you take?
What consequences can you foresee?

Case 3

All available ICU beds are full at your facility. All ventilators are in use.

The daily incident command huddle relays that no additional ICU capacity exists anywhere in Utah, and no transfers will be accepted for ICU-level care.

The hospitalist calls you about a COVID-19 patient deteriorating on the floor who needs ICU care.

The patient is a 72-year-old woman who runs a local business and is good friends with your parents and often attends your family gatherings. Her SaO2 is 88 on 10L NC.

How would you handle this scenario?

What other steps would you take?

What consequences can you foresee?

Case 4

All available ICU beds are full at your facility. All ventilators are in use.
The daily incident command huddle relays that no additional ICU capacity exists anywhere in Utah, and no transfers will be accepted for ICU-level care.

You round with the ICU teams and review the following patients:

a. 86-yo female with moderate dementia, HTN, chronic kidney disease and COVID. She is on ventilator day 18, moderate vent settings. Family are non-English speaking and advocate for ongoing ICU care.
b. 56-yo male, previously healthy, COVID, on vent day 10, moderate vent settings. Family recently estranged and uncertain if they should continue care.
c. 32-yo male ED nurse, COVID, healthy, vent day 23, high vent settings, family wants ongoing care.

What is your next action?

If a 23-year-old with an overdose requiring intubation for multi-drug overdose arrives in the ED, what will be the next step?

System CTOT questions:

1. What is the plan for severe trauma patients requiring intubation / ICU mgmt. who arrive at non-trauma centers?
2. How should we approach non-emergent surgery during deep contingency or crisis phases?

Appendix D – Notes on health care decision making capacity

The Adult Patient and Health Care Decisions (Utah)

In Utah, an adult (18 or older / under 18 if *emancipated*) is presumed to have the *capacity to make health care decisions* for themselves and to make or revoke an Advance Health Care Directive.
This presumption can be overcome if a provider (physician, APRN or PA with a specific delegation of authority) determines that the patient lacks health care decision making capacity. * The provider must also document this finding in the medical record, inform the patient and any known surrogate, and inform other health care providers or facilities.
*A patient can lack the capacity to express specific treatment decisions but maintain the capacity to appoint an agent.

The Adult Patient Without Health Care Decision Making Capacity (Utah)

The following individuals, in the following order, may make health care decisions for the adult patient who lacks capacity.

1. An agent (18 years old or over) appointed by the patient who has not been disqualified by the patient or by a Court. (Appointment can be verbal or written and can be in the form of an Advance Directive or Power of Attorney (POA) with express healthcare decision making agency)
2. Guardian – *Court Appointed*
3. Default Surrogate – In order of priority (a – g below)
    - 18 years
    - Has capacity
    - *Reasonably available*
    - Has not been disqualified

a. Spouse (not divorced / not legally separated)
b. an adult child
c. a parent
d. a sibling
e. a grandchild
f. a grandparent
g. a person who is 18 years of age or older, may act as a surrogate if the person:
    - has health care decision making capacity
    - has exhibited exceptional care and concern for the patient
    - knows the patient and the patient's personal values; and
    - is reasonably available to act as a surrogate.

Appendix E - CTO Lessons learned during COVID response

1. CTO programs are an important way to bridge clinical expertise with disaster preparedness activities.
2. CTO programs are crucial during events when the demand for care approaches or exceeds the care supply.
3. The CTO program has been positively received by participants.
4. We have observed an opportunity to align ownership and oversight to ensure sustainability of the program.
5. The recommendation to shift away from use of long-term mortality in making resource allocation decisions was equitable. It is reasonable to use one year survival, but any longer times violate ADA.
6. Avoidance of Implicit Triage was rational.
    a. Implicit triage: Bedside, individual provider decisions on resource allocation beyond goals of care discussions.
    b. Often unnecessary, as escalation of shortages can often resolve the crisis (perception of resource scarcity vs actual scarcity). Our CTO program provides this needed escalation pathway.
    c. Open to bias and discrimination; diminishes equity.
7. When resource allocation decisions are needed, they should be based on prognosis, expected benefit, and duration of need.
8. We need better prognostic tools.
    a. MSOFA/SOFA not discriminatory enough in primarily single organ dysfunction diseases, such as ARDS.
    b. MSOFA can be used for broad measurement of severity of crisis, as we use it in our state guideline to compare hospitals/ICUs for load leveling.
    c. Need to continue to use expert opinion and disease specific prognostic tools.
    d. Role for AI?
9. We need ongoing and new engagement in CSC work.
    a. Community and provider discussions to refine CSC, get community and provider backing, and then develop regulatory and legal backing.
    b. Better balance input from advocacy and legislative groups.
10. Contingency planning and operations are essential and require creativity and flexibility.
    a. Load Balancing
    b. Caregiver redeployment
    c. Remote Patient Monitoring
    d. Hospital @ Home
    e. Teaming with Long Term Care
    f. Telemedicine
    g. Space adjustments (ICU expansion)
    h. Staff adjustments (specialists, hospitalists, kidney services)
    i. Supply adjustments (PPE)