

Crisis Standards of Care Guidelines

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Dear Rhode Islanders,

The Rhode Island Department of Health (RIDOH) is issuing this Crisis Standards of Care (CSC) Guidance that hospitals are required to adopt in the event we face a surge that surpasses the capacity of our State and regional hospital systems. This document represents a collaborative effort between Rhode Island's hospital systems and RIDOH to ensure necessary standards of hospital care in the midst of the unprecedented strain COVID-19 could place on Rhode Island's hospital systems.

It is my hope that Rhode Island's hospitals will never need to implement these standards. Implementing CSC in a hospital setting should be a last resort and should be activated only when all other surge strategies are exhausted, and no other regional resources are available. As part of this solemn responsibility between State officials and our hospital systems, RIDOH has reviewed all hospitals' current CSC policies and with input from academic partner experts, have evaluated them against the highest quality standards. We have shared our feedback and have asked hospitals to revise their existing plans accordingly.

Through the continued cooperation and vigilance of our healthcare systems, statewide and regional, to prevent infection and appropriately allocate resources, in cooperation with the compliance of all Rhode Islanders in taking the necessary steps to prevent the spread of COVID-19, it is our hope we will not be forced to implement these standards.

The swift construction of temporary surge or field hospitals in Providence and Cranston provide another buffer from the need to implement these plans should we experience a surge. Despite these extraordinary efforts, this is an important document to understand in these unprecedented times, and we stand ready to provide healthcare according to the CSC should the unfortunate need arise.

Finally, I am grateful for the partnership of our State's hospital systems, the Hospital Association of Rhode Island, our State and regional partners, and the RIDOH and other State agency teams that have worked to identify best practices and further develop these policies.

Sincerely,

A handwritten signature in black ink, appearing to read "Nicole Alexander-Scott", written over a light gray rectangular background.

Nicole Alexander-Scott, MD, MPH
Director, Rhode Island Department of Health

Reviewers

These CSC Guidelines were a joint effort of the chief medical officers from all acute-care hospitals in Rhode Island, RIDOH, Rhode Island Emergency Management Agency (RIEMA), local ethicists, and the Governor of Rhode Island.

Special thanks are extended to Brown University Ethicist Thomas Bledsoe, MD; and John B. Murphy, MD, Associate Director of the Division of Geriatrics at Rhode Island Hospital for their technical and professional expertise.

About the CSC Guidelines

This is the State's overarching guide for healthcare providers and acts as a foundational document for healthcare facility plans.

This document is a living document, intended to be updated and revised to reflect advances in clinical knowledge and societal norms.

These CSC Guidelines, **if activated** will pertain to acute-care hospitals.

These CSC Guidelines should be made publicly available by each acute-care hospital to promote transparency, instill public trust, and set expectations. Hospitals should also post revisions that are made based on public comments and recommendations.

Application of the CSC Guidelines may only be used when RIDOH (and/or via the Governor) has specifically approved activation of the standards in order to protect the health and safety of all Rhode Islanders. These CSC Guidelines were a joint effort of the chief medical officers from all hospitals in Rhode Island (including medical experts representing both large academic medical centers, community hospitals, behavioral health hospitals, and a long-term acute care hospital) academic ethicists, RIDOH, Rhode Island Emergency Management Agency (RIEMA), and the Governor of Rhode Island. The original guidance document was released on April 28, 2020.

Record of Change

The following is a record of changes and revisions made to this document.

Date	Page	Change	Made By
11/2/2020	4	Added Record of Change	
11/2/2020	Throughout	Expansion and alignment for examples of non-discriminatory categories	
11/2/2020	12	Inclusion of protected rights regulations	
11/2/2020	16	Added definitions of three types of triage	
11/2/2020	21	Added Clinician specific activities within the triage section	
11/2/2020	21	Absorbed the Triage Officer role into the Triage Team	
11/2/2020	24	Transitioned exclusion criteria to a narrowed list of terminal conditions	
11/2/2020	31	Removed Appendix E – Clinical Fragility Score	

Introduction

Public health emergencies that are large-scaled or prolonged, such as pandemics, chemical disasters, hurricanes or other weather-related disasters, or acts of terrorism can overwhelm healthcare systems with critically ill and injured patients and cause shortages of life-saving resources. When medical resources become scarce, healthcare systems need to take actions to conserve resources, and prioritization of care may need to be considered.

Medical surge is a complex, multi-factorial event, and the response to it is equally complex. In an effort to better understand, measure, and discuss best practices and manage medical surge, it is essential to have an overall guiding framework.

In 2009, the Institute of Medicine (currently the National Academy of Medicine) published a landmark report, *Guidance for Establishing Crisis Standards of Care for Use in Disaster Situation: A Letter Report*. In this report the authors defined Crisis Standards of Care as:

“A substantial change in usual healthcare operations and the level of care it is possible to deliver, which is made necessary by a pervasive (e.g. pandemic influenza) or catastrophic (e.g. earthquake, hurricane) disaster. This change in the level of care delivered is justified by specific circumstances and is formally declared by a state government in recognition that crisis operations will be in effect for a sustained period. The formal declaration that crisis standards of care are in operation enables specific legal/regulatory power and protections for healthcare providers in the necessary task of allocating and using scarce medical resources and implementing alternate care facility operations.”¹

They outlined a framework for the discussion of surge capacity - defining it as a continuum from conventional to contingency, and finally, crisis. They defined this Continuum of Care as:

Conventional Capacity: The spaces, staff, and supplies used are consistent with daily practices within the institution. These spaces and practices are used during a major mass casualty incident that triggers activation of the facility’s emergency operations plan.

Contingency Capacity: The spaces, staff, and supplies used are not consistent with daily practices but provide care that is functionally equivalent to usual patient care. These spaces or practices may be used temporarily during a major mass casualty incident or on a more sustained basis during a disaster (when the demands of the incident exceed community resources).

Crisis Capacity: Adaptive spaces, staff, and supplies are not consistent with usual standards of care but provide sufficiency of care in the context of a catastrophic disaster (i.e., provide the best possible care to patients given the circumstances and resources available). Crisis capacity activation constitutes a significant adjustment to standards of care.

The National Academy of Medicine¹ also stresses the importance of an ethically grounded system to guide decision making in a crisis to ensure the most appropriate use of resources. They define these ethical principles as:

- Duty to care – standards are focused on the duty of healthcare professionals to care for patients in need of medical care.

- Duty to steward resources – healthcare institutions and public health officials have a duty to steward resources to lessen scarcity or limit misuse of critical resources, reflecting the utilitarian goal of saving the greatest possible number of lives.
- Consistency (Distributive Justice) – is the application of crisis standards across populations and among individuals regardless of their human condition (e.g. race, disability, age, gender, sexual orientation, gender identity, ethnicity, ability to pay, socioeconomic status, perceived social worth, perceived quality of life, immigration status, or past or future use of resources).
- Fairness – standards that are, to the highest degree possible, recognized as fair by all who are affected (including the patients, communities, and practitioners) and are evidence-based and responsive to the specific needs of individuals and the population.
- Transparency – is making available to the public, in a reliable, and understandable manner, information on the health care system approach to care.
- Proportionality – public and individual requirements must be commensurate with the scale of the emergency and degree of scarce resources.
- Accountability – of individual decisions and implementation of standards, as well as accountability of governments for ensuring appropriate protections and just allocation of available resources.

Lastly, the Academy of Medicine Report focuses the reader on identifying *indicators* (measurements or predictors) of change in demand for healthcare service delivery or availability of resources that can be associated with *triggers* (decision point) that are based on changes in the availability of resources that require adaptations to healthcare services delivery along the care continuum.

This framework has been nationally accepted and adopted and has been used by many state, county, and local governments. It should act as a foundation for healthcare agencies' plans and has been adopted by RIDOH.

Purpose

The purpose of these CSC Guidelines is to provide stakeholders with guidance for the allocation of scarce patient-care resources that could occur during a public health emergency of any kind (pandemic or natural disaster). In doing so, it helps the clinical providers shift from the conventional practice environment of nearly unlimited access to resources and time to provide care while focused on a single patient to a crisis approach of providing the best care possible to as many patients as possible with limited resources and often in an environment requiring expeditious decision making.

These CSC Guidelines can help ensure that the allocation resources (e.g., staffing, equipment, and resources) and treatment decisions are done in a transparent, fair, equitable, scientifically informed, and consistent manner when demand exceeds supply. The lives of Rhode Islanders can be saved with the activation of these CSC Guidelines. Therefore, it is strongly encouraged that all healthcare providers become familiar with the contents of this document prior to the necessity to implement such measures.

Assumptions

- The precipitating event (e.g., infectious disease outbreak or mass casualty incident) may result in a surge of patients who requiring medical care that could overwhelm available resources.
- Three types of surge exist: rapid infusion of patient cases, sustained, high volume of patient cases, and a small number of highly complex and resource-intensive patients²
- Healthcare facilities have implemented contingency actions to maximize all possible surge, mitigation, and conservation strategies impacting the resources needed to deliver conventional level of care.
- Staff may also be impacted by the precipitating event and be unable to work (due to own illness or injury) or remain at work (need to attend to personal/family responsibilities, lack transportation, or inability to manage the adverse impact from event), while others may chose not to work (personal health concerns, safety, concern to effectively provide care, or the liability of working in a non-conventional practice environment).
- For events of the magnitude in which CSC Guidelines are being considered, coordination among response partners at all levels (facility, local, regional, state, and federal) will be needed to manage the fast-paced, high-volume activity and optimize resources for the response.
- Subject matter expert agencies will typically release guidance for healthcare worker response. Initial guidance is subject to updates, and supplemental guidance may be released to accommodate specific populations, worker types, or clinical treatments.
- The public is unfamiliar with CSC concepts and will need access to up-to-date, accurate, and transparent information about the use of these CSC Guidelines and access to any relevant instructions about how to best seek access to care during the disaster.
- Once the CSC Guidelines are activated, they apply to all acute-care patients in need of resources, regardless of whether the patient's condition is directly related to the precipitating event.
- Vulnerable populations should be triaged and provided equal access to care irrespective of medical, physical, cognitive or emotional disability.
- Chronic disease that affect mortality as related to the acute illness or injury should be considered during triage.
- Some patients, regardless of medical efforts, will likely die.

Clarification of Ethical Principles

The CSC Guidelines were developed to operate within an ethical paradigm. The Rhode Island 2020 Chief Medical Officer workgroup articulated the following ethical framework in support of this CSC Guidelines, including the reallocation of scarce resources.

Ethical Concepts
<ul style="list-style-type: none">• Duty to care• Duty to steward resources• Duty to plan• Distributive justice• Transparency

Duty to Care

An ethical allocation scheme must respect the fundamental obligation of healthcare providers to care for patients. An ethically sound allocation system must sustain, not erode, the relationship between patient and provider. Patients who do not receive a scarce resource or treatment are still under their physician's care and can obtain alternative forms of medical intervention and/or palliative care.

A public health emergency imposes harsh limits on decision-making autonomy for patients and healthcare providers. A just allocation system must reflect those limits while supporting autonomy, when possible, in ways that also honor the duty of care. For example, when a patient who is eligible for a treatment has appropriately articulated the wish to forego such treatment, that choice should be honored.

Duty to Steward Resources

Healthcare providers must responsibly manage resources during a period of true scarcity. Balancing the obligation to the community of patients against the duty to care for each individual creates a natural tension in allocating resources. Even when practicing conventional care, healthcare providers may question whether the estimated benefit of a treatment merits the use of scarce resources. When practicing crisis care, healthcare providers will be forced to confront limited resources more starkly. Patients who might survive under ordinary circumstances cannot receive the standard level of resources at the expense of numerous other patients who will likely die without any resources at all.

Providers should balance the obligation to save the greatest possible number of lives against the obligation to care for each individual patient. As the number of affected patients increases, accommodating these two goals requires increasingly difficult decisions. An allocation system must incorporate ethical decision-making processes so that the duty to steward resources and the limitations it may place on individual care is recognized as fair and acceptable under emergency circumstances.

Duty to Plan³

The duty to plan is paramount to an effective allocation system. Lack of planning leaves allocation decisions to over-burdened, front-line healthcare workers in an emergency. The failure to produce an acceptable plan for a foreseeable crisis represents a failure of

responsibility to both patients and providers. Guidelines are essential to uphold healthcare staff's commitment to patients, ethics, and to professionalism during a time of crisis.

Although plans are obligatory, these CSC Guidelines represent a starting point for the public and decision-makers to discuss how scarce resources should be allocated. It is important to acknowledge that due to inequities in current healthcare, no allocation system for a crisis can resolve inequities in pre-existing health status resulting from unequal access. Still, the government has a duty to plan for public health emergencies, and this document represents a good-faith effort to save the most lives in a crisis where there are limited resources.

Distributive Justice

The foundation of the state's CSC Guidelines rests on the premise that difficult decisions must be based on every patient's right to equitable access to beneficial care. The criteria must be transparent and based on factors that influence the likelihood of survival. Allocation will never be influenced by other factors such as race, disability, age, gender, sexual orientation, gender identity, ethnicity, ability to pay, socioeconomic status, perceived social worth, perceived quality of life, immigration status, or past or future use of resources.

A just system of allocation must be applied consistently to be fair to all. The uniform application of an allocation protocol helps the public to recognize the fairness of the allocation procedures and ensures that vulnerable groups are not disproportionately affected. Cooperative agreements to pool scarce resources among local hospitals may help alleviate initial shortages. An ethical response to a public health emergency must not exacerbate disparities in access to care. Instead, planners must ensure appropriate resources are available for the most vulnerable; those most likely to suffer the greatest impact in a public health emergency.

Transparency

These CSC Guidelines require a sustained effort to promote transparency. RIDOH will continue to publicize and share this document with healthcare leaders and the community. The general public's values must be considered. The assessment of public comment and feedback should be integrated into this CSC Guidelines document as an ongoing process to promote public trust in the CSC Guidelines.

Legal Considerations

During disasters most people will offer help or make decisions that impact others. The legal system can provide a structure and scope to these activities. This document suggests that all healthcare facilities become familiar with those laws and regulations that can help alleviate stress on the healthcare system's practice environment. Additionally, there are relevant patient rights doctrines within healthcare facilities and laws that protect patients.

Practice Environment

There are a few laws helpful to healthcare facilities within the power of the Governor, Director of Health, and federal agencies.

Governor

The primary Rhode Island General Law (30-15; 23-1) aids with command and control of the activities related to the response to a precipitating event.

[Rhode Island General Law § 30-15](#)⁴. *Rhode Island Emergency Management Act* is the primary law related to emergencies and disasters. The purposes of 30-15 chapter are:

1. To reduce vulnerability of people and communities of this state to damage, injury, and loss of life and property resulting from natural or man-made catastrophes, riots, or hostile military or paramilitary action or acts of bioterrorism;
2. To prepare for prompt and efficient rescue, care, and treatment of persons victimized or threatened by disaster;
3. To provide a setting conducive to the rapid and orderly start of restoration and rehabilitation of persons and property affected by disasters;
4. To clarify and strengthen the roles of the governor, state agencies, and local governments in prevention of, preparation for, and response to and recovery from disasters;
5. To authorize and provide for cooperation in disaster prevention, preparedness, response, and recovery;
6. To authorize and provide for coordination of activities relating to disaster prevention, preparedness, response, and recovery by agencies and officers of this state, and similar state-local, interstate, federal-state, and foreign activities in which the state and its political subdivisions may participate;
7. To provide a disaster management system embodying all four phases of emergency management: mitigation, preparedness, response, and recovery.
8. [Deleted by P.L. 2000, ch. 170, § 2];
9. To prepare for emergency health threats, including those caused by acts of bioterrorism, that require the exercise of extraordinary government functions;
10. To provide the state with the ability to respond rapidly and effectively to potential or actual public health emergencies or disaster emergencies.

Specifically, in § 30-15-9 (c), the Governor's responsibilities relating to disaster emergencies indicate that an executive order or proclamation of a state of disaster emergency, shall activate the state and local disaster emergency plans applicable to the political subdivision or area in question and shall be authority for the deployment and use of any forces to which the plan or plans apply and for the use or distribution of any supplies, equipment, and materials and facilities assembled, stockpiled, or arranged to be made available pursuant to this chapter or any other provision of law relating to disaster emergencies.

Director of Health

RIDOH is empowered to issue voluntary, non-binding guidelines for healthcare workers and facilities; such guidelines are readily implemented and provide hospitals with an ethical and clinical framework for decision-making.

In [Rhode Island General Law § 23-1 Department of Health](#)⁵ the general functions of the Department include taking cognizance of the interests of life and health among the peoples of the state; making investigations into the causes of disease, the prevalence of epidemics and endemics among the people, the sources of mortality, the effect of localities, employments and all other conditions and circumstances on the public health; doing all in its power to ascertain the causes and the best means for the prevention and control of diseases or conditions detrimental to the public health; and adopting proper and expedient measures to prevent and control diseases and conditions detrimental to the public health in the state. It shall publish and circulate, from time to time, information that the Director may deem to be important and useful for dissemination among the people of the state and shall investigate, and give advice in relation to, those subjects relating to public health that may be referred to it by the General Assembly or

by the Governor when the General Assembly is not in session, or when requested by any city or town. The Department shall adopt and promulgate rules and regulations that it deems necessary, not inconsistent with law, to carry out the purposes of this section; provided, however, that the Department shall not require all nonprofit volunteer ambulance, rescue service, and volunteer fire departments to have two or more certified emergency medical technicians manning ambulances or rescue vehicles.

Specifically, § 23-1-17 (b) expands on the Director's general powers to include increasing human resources in the event of a public health emergency. The Director is authorized to grant a temporary Rhode Island healthcare provider license for a period not to exceed 90 days and is limited to those healthcare providers who hold an active, valid license in another state. The Director is authorized to promulgate and adopt rules and regulations to establish a process for this temporary emergency license.

Another section (§ 23-8-4) gives the Director the authority, upon investigation, that if a threat to the public health exists because any person is suffering, or appears to be suffering, from a communicable disease, the Director or his or her authorized agent may require or provide that person to be confined, in some proper place, for the purpose of isolation or quarantine or another less restrictive intervention treatment, including, but not limited to, immunization, treatment, exclusion, or other protective action(s) until the threat to the public health has abated. Nothing in this section shall be construed to prevent a person who is unable or unwilling for reasons of health, religion, or conscience to undergo immunization or treatment from choosing to submit to quarantine or isolation as an alternative to immunization or treatment. Orders under this chapter shall be in accordance with the procedures for compliance order and immediate compliance orders set forth in § 23-1-20 – 23-1-24. A person subject to quarantine under this section shall be entitled to file a petition for relief from such order at any time, included, but not limited to, a petition based upon compliance with a treatment under less restrictive alternatives.

Federal agencies

The federal Emergency Medical Treatment and Labor Act ([EMTALA](#))⁶ § 489.24(a)(2) allows hospitals to be granted waivers that allow for more efficient and timely care for patients during a disaster. Specifically, the EMTALA provisions may be waived by the Secretary of US Health and Human Services during a declared public emergency under the *Stafford Act*. The Secretary can issue a Section 1135 Waiver to waive sanctions for the “transfer of an individual who has not stabilized for both transfers and redirection for a medical screening examination.” Waivers are generally limited to a 72-hour period starting with the implementation of a hospital disaster protocol, unless the Waiver arises out of a public health emergency involving a pandemic. If related to a pandemic, the Waiver ends when the underlying declaration of a public health emergency ends or 60 days after it was first published, whichever is sooner. If the Waiver terminates because of the latter, the Secretary may extend it for subsequent 60-day periods.

Patient and Family

During disasters, when the CSC Guidelines are activated, a time will come when clinicians need to reallocate resources. A key consideration when making the decision to reallocate resources is educating patients and families that CSC Guidelines are in place, explain that healthcare facilities have a decision-making process in place, and explain the rationale. This does not imply patients and families make the decision, but these proactive steps can reduce stress of the unknown and set clear expectations for patients and families. The decision-making process should include:

- *Patient and families will have:*
 - Access to CSC Guidelines;

- Opportunities to ask questions about CSC Guidelines;
 - Input into medical treatment decisions (if time permits) and have applicable advance directives act as a stand-in if the patient is unable to speak for themselves;
 - Right of refusal of life-sustaining medical resources;
 - Right to appeal the prioritization level assessments and resource allocation decision; and
 - Right to be protected against unethical practices as covered in the [Rights and Protections for Everyone With Medicare](#)
 - Federal and state laws (e.g., ADA, Rehabilitation Act of 1973, ACA) protecting those with disabilities and requiring reasonable accommodation remain in effect even when the facility is operating under crisis standards of care.^{7,8,9}
- *Healthcare facilities will:*
 - Take appropriate actions to ensure the patient rights listed above can be met; and
 - Organize a system to ensure checks and balances exist in the process of reallocation.

Getting to Crisis Standards of Care

The National Academies Report indicates that healthcare facility practice environments move along a continuum of care during a disaster. The movement may occur slowly or abruptly, but the continuum starts with conventional care, moves to contingency care, and advances to crisis care until the indicators of the precipitating event abate and the healthcare facility can return to conventional care. Typically, most healthcare facilities engage in some form of contingency care during local, short-term disasters; however, crisis care is rarely exercised or implemented.

Conventional Practice Environment

During conventional times, healthcare providers provide a spectrum of care to patients. Types of care include preventive, minor and major illness, surgical and procedural, education for chronic illness, some OB/GYN or behavioral health, and, when needed, end-of-life care. These types of care are provided in collaboration with a patient to individualize a plan of care that takes into consideration the opinions, clinical condition of the patient, and the economic and social challenges of the patient in an effort to keep the individual as healthy as possible for as long as possible. The plan of care is supported by public and private medical, health, healthcare supply chain, pharmaceuticals, and mortuary services resources located in the jurisdiction and are easily available for use.

At times during the conventional practice environment, healthcare demand can temporarily surge (e.g., flu season, food outbreak), resources levels can drop (a single vendor leaves the market, a recall, a raw material shortage to a healthcare supply), and staffing levels can dip (absenteeism due to illness, labor dispute). These fluctuations are typically managed without being noticed by anyone outside the healthcare field. However, when the demand for care surpasses the conventional resource availability, healthcare facilities begin to pivot into a contingency practice environment.

Contingency Practice Environment

Hospitals plan for disasters. The planning actions of hospitals are, in part, guided by outside influences and subject matter experts, and planning efforts can be voluntary or mandated through contract or regulations.

Ethically, healthcare facilities have a duty to care, and that requires planning.

The Federal Emergency Management Agency (FEMA) strongly encourages public and private businesses and residents to utilize an all-hazards approach to emergency or disaster planning. The all-hazard approach has been adopted into FEMA's operational framework since many different threats and hazards can occur with variations in magnitude¹⁰. In the National Response Framework, hospitals (identified as a critical infrastructure due to the essential functions and services provided) and other health-related facilities are asked to create and sustain effective business continuity plans.

Healthcare facilities are also obligated to plan under the *Medicare and Medicaid Programs; Emergency Preparedness Requirements for Medicare and Medicaid Participating Providers and Suppliers Final Rule* (81 FR 63860, Sept. 16, 2016) (Final Rule).¹¹ This Rule established national emergency preparedness requirements for participating providers and certified suppliers to plan adequately for both natural and man-made disasters and to coordinate with federal, state, tribal, regional, and local emergency preparedness systems. The Rule includes requirements for emergency plans, policies and procedures, communications, and staff training.

The contingency practice environment exists when the demand for care surpasses the supply of resources available within the conventional practice environment. Healthcare facilities can maintain a functionally equivalent level of care by using contingency care strategies, and typically, the facility's Emergency Operations Plan is activated.

Several strategies for scarce resource situations can be implemented early in the contingency phase to delay or avoid entering the crisis practice environment.¹²

- **Prepare** - Anticipate challenges, develop plans, stockpile materials, develop mutual aid agreements.
- **Conserve** - Implement conservation strategies for supplies in shortage, or anticipated shortages, to ensure the minimum impact/compromise possible.
- **Substitute** - Provide an equivalent, or near equivalent, medication or delivery device.
- **Adapt** - Use equipment for alternative purposes.
- **Re-use** - Plan to re-use a wide variety of materials after appropriate disinfection or sterilization.

The application and implementation of these strategies may be influenced by models and best practices identified by RIDOH, including, for instance, a [card set](#) published by the Minnesota Department of Health¹³. The cards provide recommendations to be implemented

in preparation and in response, thus covering the whole continuum of care (conventional, contingency, and crisis) as described above.

Due to the existing infrastructure of the healthcare emergency preparedness program, it is highly unlikely that any healthcare facility would reach the contingency practice environment without having already reached out for advice or support. Communication channels for support requests exist on a day-to-day basis through the Healthcare Coalition of Rhode Island, pre-existing intra-facility memoranda of understanding (MOUs), healthcare system affiliations, and pre-existing discipline-specific relationships (e.g., hospital pharmacies).

If a healthcare facility becomes, or anticipates becoming, unable to provide the conventional standard of care, the facility must contact RIDOH (available 24-7 at 401- 222-6911). More extensive types of support may be needed in order to safely and effectively provide patient care in the contingency practice environment.

While in this practice environment, healthcare facilities should consider needs and submit requests through Emergency Support Function (ESF) 8 and its pre-identified communication mechanisms in order to engage external partners' support such as:

- Other healthcare facilities
 - Accept patient transfers
 - Loan resources
 - Loan staff
 - Specialty medical service virtual support
- RIDOH
 - Expand scope of care
 - Relax licensing requirements and offer comity
 - Release of state cache assets
- RIEMA
 - Infrastructure support
 - Non-healthcare related resources
- Federal regulatory agencies
 - Suspend regulatory requirements
 - Release of federal cache assets

Every attempt must be made to maintain the appropriate standards of care and patient safety. The goal of each hospital should be to remain in a state of contingency care for as long as is possible and to avoid having to initiate Crisis Standards. All the above strategies should be in place prior to, and while, utilizing the last strategy of reallocation of critical resources in short supply.

- **Re-Allocate** - If no alternative, remove a resource from one area/patient and allocate to another who has a higher likelihood of benefit.

Crisis Practice Environment

Most often, the indicator that the healthcare system is on the threshold of transitioning from a contingency practice environment to a crisis practice environment is when the strategies of prepare, conserve, substitute, adapt, and re-use are already in place. The facility continues

to receive patients and may be expanding bed spaces into non-traditional care areas, available staff are working long shifts, and supplies remain scarce.

At this point, the ability of the healthcare facility to deliver medical care services under contingency conditions is compromised and a functionally equivalent level of care for individualized care is no longer possible. The healthcare facility needs to transition to a crisis practice environment. In the new environment, reallocation of scarce resources will be needed and the goal of care provided to an individual is viewed in the context of care needed by the population to maximize population survival and allow for judicious use of the limited resources. Consistent with accepted standards during public health emergencies, the primary goal of the allocation framework is to maximize benefit to populations of patients.^{14,15}

Return to Conventional Care

As supply of resources increase and demand for services decrease, healthcare facilities should begin to monitor for indicators that the system can return to the higher practice environment of contingency and move back toward conventional care status. Healthcare facilities should be prepared for taking incremental steps in this return with the possibility of reversing decisions. These CSC Guidelines will be deactivated by the Director of Health in consultation with the Governor.

Activation of CSC Guidelines

Activation of the CSC Guidelines resides under the authorities of the Director of Health. The Director of Health, having analyzed indicators of change in demand for healthcare service delivery or availability of resources, determines the indicators are in line with triggering the activation of the CSC Guidelines, and will consult with the Governor's Office to make the final decision to activate. There may be (but not required) an associated gubernatorial executive order declaring a State of Emergency. RIEMA and FEMA/Assistant Secretary for Preparedness and Response (ASPR) Region I will be notified of the potential decision at the earliest time possible.

In making the decision, the authorities should consider that all the following conditions have been met.¹⁶

- Hospitals are at least at 120% of surge capacity;
- Attempts at conservation, reutilization, adaption, and substitution have been performed maximally;
- Critically limited resources have been identified (e.g., ventilators, antibiotics);
- Infrastructure resource needs have been identified (e.g., isolation, staff, electrical power);
- Resources and/or infrastructure needs cannot be met by RIDOH;
- Requests for federal and state resources cannot be met on a timely basis; and

- A consultation has been conducted with senior leadership of hospitals to reassess their need for CSC Guidelines including the strategy of re-allocation of scarce medical resources.

Once the decision to activate the CSC Guidelines is made, the public and health providers will be notified through ESF 8 communications systems as well as other public communication channels.

Due to the small geographic size of the state, once activated, it is likely that all hospitals in the state will provide care under the CSC Guidelines. However, it is possible that hospitals in different areas of the state may reach the need for implementation at different times. Therefore, hospitals still in the contingency phase will not be expected to share their remaining limited resources.

Process of Triage and Prioritization

The CSC Guidelines operationalizes the broad public health goal by giving priority to patients who are most likely to survive to hospital discharge, assuming appropriate treatment with critical-care resources. This begins with triaging the patient and assigning a prioritization level. All patients are treated as eligible for triage to receive critical-care resources and to receive a priority level assignment. In determining the priority score for a patient, assessable information such as race, disability, age, gender, sexual orientation, gender identity, ethnicity, ability to pay, socioeconomic status, perceived social worth, perceived quality of life, immigration status, or past or future use of resources, have no bearing on the likelihood or magnitude of benefit and must not be considered in making priority determinations.¹⁸

Triaging

Triaging is the process of using clinical judgment, clinical information, and objective triage tools to sort patients based on medical status and likely outcome.¹⁹ Triage should be guided by the acute severity of the patient's current medical condition, the epidemiology of the disease, and the current status of underlying medical diseases that may hinder recovery. The goal of triage is to assess or calculate metrics that provide enough information to assign a patient a priority level.

Quoting the IOM Report (2012)¹, "crisis standards of care often involve triage decisions. The impact of triage on the primary goal of CSC—to provide the best outcomes for the largest number of patients—depends on the number of patients presenting, the duration for which they use specific resources, and their outcomes relative to other patients.

There are three basic types of triage:

- *Primary triage*—performed at first assessment and prior to any interventions (e.g., triage upon entry to the emergency department or by EMS providers at a disaster scene)
- *Secondary triage*—performed after additional assessments and initial interventions (e.g., triage performed by surgery staff after administration of intravenous fluids and 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).

The dynamic nature of events requires that patients be reassessed (triaged) in relation to their changing clinical condition as well as to changes in resource availability (both when resources grow scarcer and when they are replenished)."

Some patients will not be eligible for a triage assessment. A patient who is screened for a medical condition associated with terminal conditions (see Appendix A), regardless of their current acute illness, will be classified as not eligible for a triaging assessment for potential use of a scarce critical resource. Instead, this patient would be eligible for alternative forms of medical intervention and/or palliative care or CARE (i.e., Comfort, Assist, Relieve symptoms, Explain), independent of decisions about life-sustaining treatment.²⁰

For those patients who are eligible, an experienced healthcare provider in the medical discipline or experienced with the population to which the patient belongs (e.g., pediatrics, neonates, pregnant women) will conduct the triage process. The treating physician of the patient being triaged should not perform the triage. The separation of the triage role from the treating physician's role is intended to enhance objectivity, avoid conflicts of commitments, and minimize moral distress that can arise when making such decisions.^{21,22}

Triaging is completed through the use of the clinical judgment and application of one or more standard triage tool(s) of measurement (see appendices of common triage tools). During the calculation process, the healthcare provider should be mindful that some triage tools assess wellness on low scores and others on high scores, so it is important to ensure accurate calculations. Of note, if limited data are available that would normally inform the calculation of a triage score prior to the need for a time-sensitive decision, then the healthcare provider can best approximate a triage score.

The most common triage tool of survivability for adults is the Sequential Organ Failure Assessment (SOFA)²³ tool (see Appendix B). A patient is assigned points based on clinical measures of function in six key organs and systems: lungs, liver, brain, kidneys, blood clotting, and blood pressure. Each organ system is evaluated separately based on clinical performance and assigned a point value of zero to four. The assigned points of all six systems are then tallied for a total SOFA score which can range from zero to 24. This SOFA score informs the next step of prioritization.

Prioritization

Prioritization is the application of the calculated triage score from a predetermined rubric for assignment of a priority level and, in turn, a general path of clinical treatment.

The Rhode Island healthcare community has agreed on a four-tier prioritization rubric with each level directly associated to the SOFA score calculated via the triage method.

Level 1: Highest level of access to the treatment, where all patients have equal (or near equal) likelihood of survival. (SOFA score less than 7)

Level 2: Intermediate access is assigned to patients who are very sick, and whose likelihood of survival is intermediate and/or uncertain. These patients may or may not benefit (i.e. survive)

with the contemplated treatment. They receive such treatment, if available, after all patients in the Level 1 category have received same. (SOFA score 8-11)

Level 3: Defer/discharge is assigned to patients who do not need the treatment at issue. (No SOFA score due to no organ failure and no need for lifesaving resources)

Level 4: Lowest access/palliate/discharge is assigned to patients who have a medical condition on the terminal condition list or who have a high risk of mortality. These patients will not receive the treatment when resources are scarce. Instead, alternative forms of medical intervention and/or palliative/hospice care are provided. However, if more resources become available, patients in the Level 4 category, or those with terminal conditions, are reassessed and may be eligible for the contemplated treatment²⁴ (SOFA score higher than 11)

Prioritization for access to critically scarce lifesaving resources should not depend on a patient's pre-hospitalization quality-of life or predictions of future quality. Social value should not be included as a criterion for prioritization unless the category of patient (e.g. healthcare worker, "protector of societal order") is also in critically short supply.

All patients who are allocated critical-care services will be allowed a therapeutic trial period. The trial duration for such patients should be modified, as appropriate, such as if subsequent data emerge which suggest the trial duration should be longer or shorter (such as for individuals with disabilities who may need additional time to demonstrate effective progress). These assessments involve re-calculating the triage score. Clinical improvement or decline while receiving treatment via a critical resource is taken into consideration at each re-assessment. If there are patients waiting for critical-care services, then patients who, upon reassessment,²⁴ show substantial clinical decline may be considered for withdrawal of the critical resource. Periodic evaluations are necessary to determine whether the therapy is effective for a patient while allowing for efficient allocation of a scarce resource. Time trials are necessary because they provide as many patients as possible with enough opportunity to benefit from treatment. The use of time trials ensures uniform, official assessments and provides valuable information about the status and real-time availability of treatment.

Patients who are no longer prioritized for critical-care treatment should receive medical care including intensive symptom management and psychosocial support. If available, specialist palliative care teams will be available for consultation.

Children and Pregnant Women Considerations

Survivability triage scoring systems, such as the SOFA score, that are meaningful for adult critical-care patients do not apply to pediatric patients or newborns. Population-specific tools, such as the Pediatric Logistic Organ Dysfunction^{25,26} (PELOD-2) score in children Score for Neonatal Acute Physiology with Perinatal Extension-II²⁷ (SNAPPE-II), or National Institute of Child Health Extremely Preterm Birth Outcomes Tool²⁸ (NICHD-OT) in neonates, should be used when possible (see Appendix B).

For pregnant patients, the SOFA score has not been validated and may not accurately reflect the likelihood of short-term survival. Therefore, the score for prognosis for short-term survival will instead be determined by the predicted likelihood of short-term survival, based on the assessment of the triage officer in consultation with the obstetrical medicine attending and the

Maternal and Fetal Medicine (MFM) attending. Patients with predicted survival of 76%-100% will be assigned as Level 1; those with predicted survival of 26%-75 % will be assigned as Level 2, and those with predicted survival of 0%-25% will be assigned as Level 4.

Communications

Communications is an essential element to the human experience. During disasters, information will be plentiful. There will be event statistics, clinical data, resource requests, patient outcome stories, innovative problem-solving ideas, social media content, questions, complaints, and rumors. The incoming information, from a multitude of sources, will need to be culled for relevant, accurate, and focused information that can be included into a meaningful communications message.

Healthcare facilities should design systems to ensure information can be vetted and organized into audience-specific communications. Healthcare facilities must be prepared to provide:

- Clear, concise, and actionable communications to staff and providers. This type of communication can reduce stress and give people a sense of control in stressful times;
- Precise, accurate, and timely data-related communications to vendors and regulatory bodies to ensure resource gaps are known and can be sourced for procurement; and
- Consistent, timely, and culturally and linguistically appropriate information to ensure understanding across all people, including those who are Deaf or hard of hearing, are blind or have low vision, or have limited English proficiency.

Within the context of implementing the CSC Guidelines healthcare providers should have an established hierarchy for communicating triage scores, priority levels, and application of treatment based on those priority levels to patients and families.

An example of how this hierarchy may be operationalized:

- Triage Officer contacts Attending physician with the assigned priority level for patient.
- Triage Officer and Attending physician discuss and inform nursing staff.
- Attending physician explains the severity of the patient's condition to the patient and the family.
- Triage Officer explains, to the patient and the family, the implication of the patient's condition on the priority level assignment. Other considerations for this communication include:
 - Explain how CSC Guidelines can ensure objective decision making.
 - Explain the factors that were not relevant in making the decision (e.g.–race, disability, age, gender, sexual orientation, gender identity, ethnicity, ability to pay, socioeconomic status, perceived social worth, perceived quality of life, immigration status, or past or future use of resources, etc.).
 - Explain the type of care that will be provided (not just what will not be provided).
 - Explain alternative care options or provide of assurance of palliative care.
 - Explain the right to appeal the decision.
 - When possible, have social workers, chaplains, and/or palliative care clinicians present when the triage decision is communicated.

Resource Reporting and Tracking

A fundamental variable to the crisis standards of care is the potential scarcity of resources (human, durable, consumable, etc.). Healthcare systems should understand baseline needs and have a mechanism for tracking resource usage and resupply (or availability in the case of human resources). An Incident Command System (ICS) structure should be established to ensure internal coordination of gathering and sharing information, response to resource requests, guidance on clinical and laboratory issues, and support other needs related to the response.

Most healthcare facilities operate on a just-in-time ordering philosophy and vendor-managed inventory systems. These supply chain system types are vulnerable in disasters, and healthcare systems should take steps to ensure there is sufficient access to protective equipment and materials, either held in reserve or by activating resilient supply chain mechanisms.²⁹

Assignment of staff or integration of technology to manage tracking and reporting is an essential function for the early identification of dwindling resources or demand surge. With early identification of indicators of resource depletion and increase in supply demand, the healthcare system may be able to take mitigating actions or receive external assistance to lengthen the time they are able to operate within a contingency practice environment.

Support for Staff Implementing CSC

During time of disasters, healthcare providers are on the frontlines. Operational support, as addressed in the CSC Guidelines, has been limited to reducing surge, increasing resources, and normalizing the practice environment. This type of support is essential, but there are other types of support that will be needed.

Peer support will be needed for those healthcare providers who make the solemn decision of reallocation of scarce resource or withdrawal of treatment. Consider setting a rotating schedule for individuals who will be assigned to this high-responsibility position and provide an additional layer of support through the use of a committee to provide input for final decisions on resource allocations. Early stress-relieving techniques, such as enforcement of breaks and days off, should be considered to minimize the potential of frontline staff who will suffer from burnout after prolonged exposure to intense stress.³⁰ Consider use of a Critical Incident Stress Debriefing (CISD) to promote resilience and recovery.³¹

Healthcare Facility Staff Roles (for CSC)

The implementation the CSC Guidelines requires a whole healthcare system shift from patient-centric to public-centric care. When, in the course of implementation of the CSC Guidelines, a need arises to reallocate resources, healthcare facilities need to engage a team to ensure allocation decisions are made by subject matter experts with consistent approaches, within a program that is built on a strong ethical foundation, and has built-in checks and balances. The team is structured in tiers and the suggested (not required) composition is a Clinical Team, Triage Team/Officer, and a Review and Oversight Committee.

Clinical Team

The clinical team comprises one or more clinicians who are currently providing care for the patient. A member of this team who has been trained on the use of the selected Survivability Triage Tool (e.g., Appendix B and Appendix D in the Appendices of Triage and Decision-making Tools) will perform the patient assessment, complete the tool, and turn it over to the Triage Team/Officer. Hospitals may also integrate the Survivability Triage Tool into their existing electronic medical records systems but should ensure that all information entered into the Tool is the most recent and accurate available within the appropriate assessment window.

Triage Team/Officer

The Triage Team should consist of at least one nurse with supervisory experience and one administrative staff member. Depending on the resources of the institution, the Triage Team should ideally include a critical care physician (or other physician with experience in triaging critically ill patients).

The Triage Team will review all submitted and completed Survivability Triage Tools. The collective role of the Triage Team is to conduct the triage process and assign a level of priority for each eligible patient in context of all patients under their authority.

The Triage Team will have the responsibility and authority to make decisions about which patients will receive the highest priority for receiving critical care. They will also be empowered to make decisions regarding reallocation of critical-care resources when patients experience substantial clinical deteriorations after being allocated critical care resources or interventions. It is important to note that any durable medical equipment or lifesaving equipment personally owned by a patient and present at time of care may not be reallocated or reassigned away from that patient.

In the event that the full Triage Team cannot be convened when an immediate priority assignment decision needs to be made and only a single member is available, that member (known as the Triage Officer) may bear responsibilities and execute the duties afforded the Triage Team.

Review and Oversight Committee

The Review and Oversight Committee should consist of Chief Medical Officer (or his/her designee), Chief Nursing Officer (or his/her designee), Legal Counsel, member of Ethics Committee leadership, and a designated off-duty Triage Officer. This Committee will have reoccurring duties but by nature of their charge, must also have the ability to convene immediately.

The Committee's role is to:

- Hear appeals of individual decisions to withdraw life-sustaining treatments¹⁷ and, when unresolved, refer to RIDOH for further review/reconsideration of a decision.
- Review, at regular intervals, the triage and appeals process to determine whether the triage and appeals processes are being conducted in a fair, effective, and timely manner.
- Adjudicate disputes or controversies that may arise.
- Conduct periodic, retrospective review of all reallocation cases to verify compliance with the CSC Guidelines as a mechanism to inform and improve subsequent decisions.

Appendices of Triage and Decision-making Tools

The following appendices include common triage and decision-making tools utilized in the healthcare setting while responding to disasters. This is by no means a comprehensive list of all available tools nor does the inclusion of a tool in the CSC Guidelines indicate that a hospital must utilize that tool. Triage tools should not be utilized to withhold lifesaving resources if they are available.

The purpose for inclusion of the triage tools mentioned (and those not) in the main text is to demonstrate that healthcare providers in Rhode Island will utilize an objective clinical assessment to ensure that the allocation of resources (e.g., staffing, equipment, and resources) and treatment decisions are done in a transparent, fair, equitable, scientifically informed, and consistent manner when demand exceeds supply.

Appendix A: Exclusion Criteria Terminal Conditions (Examples)

Healthcare facilities may have, as part of their CSC Program, identified terminal conditions whose presence in a patient excludes them from triage. If so, this list provides examples of those conditions.

Examples of Terminal Conditions
Cardiac arrest (active coding)
Traumatic brain injury with no motor response to painful stimulus (i.e., best motor response = 1)
Patients for whom death is impending and comfort measures are in place regardless of resource availability.

Appendix B: Survivability Triage Tools (Adult, Pediatric, and Neonate)

B1: The Sequential Organ Failure Assessment (SOFA)

Sequential Organ Failure Assessment (SOFA) Score						
Variable	0	1	2	3	4	Score (0-4)
<i>PaO₂/FiO₂¹ mmHg</i>	> 400	< 400	< 300	< 200	< 100	
<i>Platelets, x 10³/μL (x 10⁶/L)</i>	> 150 (> 150)	< 150 (< 150)	< 100 (< 100)	< 50 (< 50)	< 20 (< 20)	
<i>Bilirubin, mg/dL (μmol/L)</i>	< 1.2 (< 20)	1.2 - 1.9 (20 - 32)	2.0 - 5.9 (33 - 100)	6.0 - 11.9 (101 - 203)	> 12 (> 203)	
<i>Hypotension²</i>	None	MABP < 70 mmHg	Dop < 5	Dop 6 - 15 or Epi < 0.1 or Norepi < 0.1	Dop > 15 or Epi > 0.1 or Norepi > 0.1	
<i>Glasgow Coma Scale Score (see Appendix C)</i>	15	13 - 14	10 - 12	6 - 9	< 6	
<i>Creatinine, mg/dL (μmol/L)</i>	< 1.2 (< 106)	1.2 - 1.9 (106 - 168)	2.0 - 3.4 (169 - 300)	3.5 - 4.9 (301 - 433)	> 5 (> 434)	
SOFA Score (total Score column)						

¹ FiO₂=fraction of inspired oxygen; MAP mean arterial pressure; PaO₂ partial pressure of oxygen

² Hypotension:

MABP=mean arterial blood pressure in mm Hg [diastolic + 1/3(systolic-diastolic)]

Dop=dopamine in micrograms/kg/min

Epi=epinephrine in micrograms/kg/min

Norepi=norepinephrine in micrograms/kg/min

Note: Clinicians should ensure an individual's SOFA score is not unduly influenced by existing medical conditions, unless those conditions have been determined to directly impact the individual's likelihood of survival until discharge.

B2: Pediatric Logistic Organ Dysfunction (PELOD-2)

TABLE 6. Scoring the Pediatric Logistic Organ Dysfunction-2 Score

Organ Dysfunctions and Variables ^a	Points by Severity Levels						
	0	1	2	3	4	5	6
Neurologic^b							
Glasgow Coma Score	≥ 11	5–10			3–4		
Pupillary reaction	Both reactive					Both fixed	
Cardiovascular^c							
Lactatemia (mmol/L)	< 5.0	5.0–10.9			≥ 11.0		
Mean arterial pressure (mm Hg)							
0 to < 1 mo	≥ 46		31–45	17–30			≤ 16
1–11 mo	≥ 55		39–54	25–38			≤ 24
12–23 mo	≥ 60		44–59	31–43			≤ 30
24–59 mo	≥ 62		46–61	32–44			≤ 31
60–143 mo	≥ 65		49–64	36–48			≤ 35
≥ 144 mo	≥ 67		52–66	38–51			≤ 37
Renal							
Creatinine (μmol/L)							
0 to < 1 mo	≤ 69		≥ 70				
1–11 mo	≤ 22		≥ 23				
12–23 mo	≤ 34		≥ 35				
24–59 mo	≤ 50		≥ 51				
60–143 mo	≤ 58		≥ 59				
≥ 144 mo	≤ 92		≥ 93				
Respiratory^d							
Pao ₂ (mm Hg)/Fio ₂	≥ 61		≤ 60				
Paco ₂ (mm Hg)	≤ 58	59–94		≥ 95			
Invasive ventilation	No			Yes			
Hematologic							
WBC count (× 10 ⁹ /L)	> 2		≤ 2				
Platelets (× 10 ⁹ /L)	≥ 142	77–141	≤ 76				

^aAll variables must be collected, but measurements can be done only if justified by the patient's clinical status. If a variable is not measured, it should be considered normal. If a variable is measured more than once in 24 hr, the worst value is used in calculating the score. Fio₂: fraction of inspired oxygen.

^bNeurologic dysfunction: Glasgow Coma Score: use the lowest value. If the patient is sedated, record the estimated Glasgow Coma Score before sedation. Assess only patients with known or suspected acute central nervous system disease. Pupillary reactions: nonreactive pupils must be > 3 mm. Do not assess after iatrogenic pupillary dilatation.

^cCardiovascular dysfunction: Heart rate and mean arterial pressure: do not assess during crying or iatrogenic agitation.

^dRespiratory dysfunction: Pao₂: use arterial measurement only. Pao₂/Fio₂ ratio is considered normal in children with cyanotic heart disease. Paco₂ can be measured from arterial, capillary, or venous samples. Invasive ventilation: the use of mask ventilation is not considered invasive ventilation.

Logit (mortality) = -6.61 + 0.47 × PELOD-2 score.

Probability of death = 1/(1 + exp [-logit(mortality)]).

B3: Score for Neonatal Acute Physiology with Perinatal Extension-II (SNAPPE-II)

- Applies to babies admitted to NICU at earlier than 48 hours of life
- Assign score based on data collected in first 12 hours after admission to NICU

		Points
Birth weight (gm)	≥ 1000	0
	750-999	10
	< 750	17
SGA < 3 rd %ile	No	0
	Yes	12
Apgar score at 5 minutes	≥ 7	0
	< 7	18
PO ₂ /FIO ₂ ratio	≥ 250	0
	100-249	5
	30-99	16
	< 30	28
Mean blood pressure (mm Hg)	≥ 30	0
	20-29	9
	< 20	19
Lowest serum pH	≥ 7.20	0
	7.10-7.19	7
	< 7.10	16
Urine output (mL/kg/hr)	≥ 1.0	0
	0.1-0.9	5
	< 0.1	18
Lowest temperature (°F)	>96.0	0
	95.0-96.0	8
	< 95.0	15
Multiple seizures	No	0
	Yes	19
Total:		

B4: National Institute of Child Health Extremely Preterm Birth Outcomes Tool (NICHD-OT)

Specification	Point System*			
	1	2	3	4
Mortality prognosis scoring (SOFA score for adults, PELOD-2 score for children, NICHD-OT for preterm neonates, SNAPPE-II for full term neonates)	SOFA score < 6 OR PELOD-2 < 12 OR NICHD -OT 76-100% predicted survival OR SNAPPE-II 0-59	SOFA score 6-9 OR PELOD-2 12-13 OR NICHD – OT 56-75% predicted survival OR SNAPPE-II 60-69	SOFA score 10-12 OR PELOD-2 14-16 OR NICHD-OT 26-55% predicted survival OR SNAPPE-II 70-79	SOFA score > 12 OR PELOD-2 >16 OR NICHD-OT 0-25% predicted survival OR SNAPPE-II ≥80
Survival-Limiting Comorbid Conditions** (medical assessment of comorbid conditions)		Major comorbid conditions with substantial impact on long-term survival 1 year following discharge		Severe comorbid conditions; death likely within 1 year

Appendix C: Glasgow Coma Scale Scoring Criteria

This scale³² is designed to assess depth and duration of coma and impaired consciousness based on motor responsiveness, verbal performance, and eye opening to appropriate stimuli.

Glasgow Coma Scale Scoring Criteria			
Criteria		Score	Assigned Score
<i>Eye-Opening Response</i>	No eye opening	1	
	To pain only	2	
	To verbal stimuli	3	
	Spontaneous	4	
<i>Verbal Response</i>	No response	1	
	Incomprehensible	2	
	Inappropriate words	3	
	Confused conversation but able to answer questions	4	
	Oriented	5	
<i>Motor Response</i>	No response	1	
	Extension response (in response to pain)	2	
	Flection response (in response to pain)	3	
	Withdraws (in response to pain)	4	
	Purposeful movement (in response to pain)	5	
	Obeys commands for movement	6	
Total Score (range 3-15)			

Appendix D: American Burn Association Triage Decision Table for Burn Victims

The following grid³³ provides an example of triage decisions that may become necessary in the setting of overwhelmed resources, or in austere conditions, where altered standards of care need to be instituted.

Table 1. Resource triage diagram for burn injury in a disaster

Age	0-9.9	10-19.9	20-29.9	30-39.9	40-49.9	50-59.9	60-69.9	70-79.9	80-89.9	≥90
Burn size group, % TBSA all										
0-1.99	Very high	Very high	High	High	High	Medium	Medium	Medium	Low	Low
2-4.99	Outpatient	Very high	High	High	High	Medium	Medium	Medium	Low	Low
5-19.99	Outpatient	Very high	High	High	High	High	Medium	Medium	Low	Low
20-29.99	Outpatient	Very high	High	High	High	Medium	Medium	Medium	Low	Low
30-39.99	Outpatient	Very high	High	High	High	Medium	Medium	Low	Low	Expectant
40-49.99	Outpatient	Very high	High	Medium	Medium	Medium	Medium	Low	Low	Expectant
50-59.99	Outpatient	Very high	High	Medium	Medium	Low	Low	Expectant	Expectant	Expectant
60-69.99	Outpatient	High	Medium	Medium	Low	Low	Low	Expectant	Expectant	Expectant
≥70	Very high	Medium	Low	Low	Low	Expectant	Expectant	Expectant	Expectant	Expectant
Burn size group, % TBSA no inhalation injury										
0-1.99	Very high	Very high	High	High	High	High	Medium	Medium	Medium	Medium
2-4.99	Outpatient	Very high	High	High	High	High	High	Medium	Medium	Medium
5-19.99	Outpatient	Very high	High	High	High	High	High	Medium	Medium	Low
20-29.99	Outpatient	Very high	High	High	High	Medium	Medium	Medium	Medium	Low
30-39.99	Outpatient	Very high	High	High	Medium	Medium	Medium	Low	Low	Expectant
40-49.99	Outpatient	Very high	High	High	Medium	Medium	Medium	Low	Low	Expectant
50-59.99	Outpatient	Very high	High	Medium	Medium	Low	Low	Expectant	Expectant	Expectant
60-69.99	Very high	High	Medium	Medium	Low	Low	Expectant	Expectant	Expectant	Expectant
≥70	High	Medium	Medium	Low	Low	Expectant	Expectant	Expectant	Expectant	Expectant
Burn size group, % TBSA with inhalation injury										
0-1.99	High	Medium	Medium	Medium	Medium	Medium	Low	Low	Expectant	Expectant
2-4.99	High	High	High	High	High	Medium	Medium	Medium	Low	Low
5-19.99	High	High	High	High	High	Medium	Medium	Medium	Low	Low
20-29.99	Very high	High	High	Medium	Medium	Medium	Medium	Low	Low	Expectant
30-39.99	Very high	High	High	Medium	Medium	Medium	Medium	Low	Low	Expectant
40-49.99	Very high	High	Medium	Medium	Medium	Low	Low	Low	Low	Expectant
50-59.99	High	Medium	Medium	Medium	Medium	Low	Low	Expectant	Expectant	Expectant
60-69.99	Medium	Medium	Medium	Low	Low	Low	Expectant	Expectant	Expectant	Expectant
≥70	Medium	Medium	Low	Low	Expectant	Expectant	Expectant	Expectant	Expectant	Expectant

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