Environmental Scan and Literature Review: Crisis Standards of Care Guidelines

Background

[Detailed methodology will be included in appendix]

Articles in this review were primarily identified through a PubMed search within EndNote using the following search terms: crisis standards of care, equity, disabilities, race, workforce, resources, scarcity, transparency, ethics, surge, triage, and staffing. Certain state Crisis Standards of Care (CSC) plans were reviewed to address the priority research questions listed below. Final methodology, including specific search terms and exclusions, will be compiled when the review is finalized. Key findings and research methods were taken directly from the articles, government documents, and law reviews.

The Minnesota, Colorado, and Arizona Crisis Standards of Care guidelines reviewed were selected because the plans are featured resources in the TRACIE Healthcare Emergency Preparedness Information Gateway, and other national sites. While no reviews rate quality, these states did well in national comparisons for completeness and for meeting review criteria. Each of these plans addresses the core research questions and can serve as a model for content, key considerations, and planning.

While all plans shared similar content areas, plans differed in the level of detail. In contrast to the Minnesota plan with a high-level operations plan and several attachments serving as stand-alone guides, the Arizona plan is very detailed in its Clinical Concept of Operations. Colorado's plan is the longest, its operations detail level falls between the other two states and includes lengthy resource sections in the appendix. All plans have been updated in the past two years with Colorado's posted plan being updated most recently.

The output of this review is organized into "evidence tables" that are focused on specific areas of focus which were translated into research questions. Articles and state Crisis Standards of Care guidelines cover multiple areas of focus and are included in multiple evidence tables. Relevant findings in each evidence table reflect the research question. The tables were created to facilitate writing for the updated Kansas Crisis Standards of Care guidelines. This document was not written for publication and therefore may include abbreviations, phrasing, and other elements that do not adhere to the publication style for the organizations charged with producing it. Finally, this is a draft and should not be reviewed as complete or final – missing or needed sections can be added during for already reviewed articles.

Research Questions

1. What populations might be at risk of experiencing inequities as the result of CSC implementation?
2. What ethical considerations have been used to determine who gets scarce resources and who does not?
3. What strategies have been used to maintain transparency around crisis standards of care?
4. What strategies exist related to transfer of patients and sharing of resources to prevent pockets of crisis care?
5. What are evidence-based practices or validated tools for guiding triage and clinical decision-making?
6. What strategies have been used to address staffing concerns during CSC implementation?

Secondary Questions (as time allows) **–** *[Include those added to the review in the list above; in the final version, any questions not addressed will be removed.]*

a) In other states, what role do federal, state, and local governments have in the declaration of CSC?
b) What means can be used to provide legal protections for providers and facilities?
c) How are *conventional care, contingency care* and *crisis care* defined? (What triggers movement from contingency care to crisis care?)
d) What strategies have been used to define surge progression? Do those strategies differ in urban and rural settings?
e) In other states, what strategies exist for identifying and using alternate care sites (e.g., tents in a parking lot near the emergency department (ED) with services limited to assessment and triage, or utilization of non-patient care areas for inpatient care)?
f) What strategies exist to prioritize who receives medical and PPE supplies?

Overview of Findings

Like Kansas, other states are preparing Crisis Standards of Care plans that meet the additional needs of a long-term public health crisis. Colorado's Crisis Standards of Care Plan, like Minnesota and Arizona, is cited as being a comprehensive plan. Colorado's plan shares triage strategies, such as START and JumpSTART with Arizona and Scarce Resource Strategies from Minnesota in a modified form. The body of the plan includes planning assumptions and ethical framework, as well as concept of operations with activation, triggers, and communication. The appendices provide details about regions, resource requests, statutes and regulations, triage algorithms, and clinical considerations.

The clinical considerations appendix describes, in detail, changes in traditional healthcare systems to respond to the crisis including EMS, hospitals, out of hospital care providers, specialty patient populations, PPE and staffing. The EMS section provides detailed public safety answering points and call center changes and responses during a crisis, guides for first responder protection, criteria for consideration for no-transport, and medical care on scene. Framework is taken from the EMS CSC of the Institute of Medicine (now National Academy of Medicine) to describe actions across the continuum of care. The hospital section describes core framework based on ethical principles, crisis continuum, and triage strategies with a multi-tiered approach to scarce resource allocation.

Each state is applying lessons learned to inform the next evolution of a plan that includes equity and transparency, while making a meaningful guide for local health systems to implement in a public health emergency. In addition to understanding the laws and regulations that prohibit discrimination, states must examine the impact of the guidance on populations at risk. Ethical considerations frame the individual's needs counterbalanced by the need to protect the welfare of the population, all of which exist in a historical and social context that has long influenced health. Implementing crisis standards must be part of a systemwide approach in which all stakeholders, including health professionals and the public, participate in transparent decision-making. Meaningful discussion and transparent decision-making provide the opportunity to discuss and understand complex problems.

Evidence

Q1. What populations might be at risk of experiencing inequities as the result of CSC implementation?

Key Findings

- CSC protocols that will be used for making urgent allocation decisions in a disaster cannot be expected to remedy historic and structural inequity. However, they should not exacerbate underlying disparities.
- Communities of color are more likely to have comorbidities due to a history of structural racism and unequal access to healthcare, safe and stable housing, quality schools and employment, and are harder hit by COVID-19 due to the same social determinates of health.
- Laws and regulations prohibit discrimination based on race, color, national origin, disability, age, sex, and exercise of conscience and religion in HHS-funded programs.
- Many state CSC frameworks rely on algorithmic Sequential Organ Failure Assessment (SOFA) score. The Glasgow Coma Scale includes assessment of a patient's verbal response, which needs to be addressed for patients with a speech or language disability, as well as non-English speakers.

Summary of Evidence

Health equity and access to care have been highlighted by the disproportionate impact of COVID-19 on communities of color. Groups representing individuals with disabilities and vulnerable populations have also expressed concerns regarding the fair allocation of resources and the need for additional planning to address inadequacies in meeting special patient needs. The HHS Office for Civil Rights has been working with states as they develop plans to ensure that states and communities understand the laws and regulations that prohibit discrimination.

The Center for Public Representation has offered additional guiding principles for avoiding disability discrimination in treatment rationing. Recommendations include performing a thorough individualized review of each patient without assuming a specific diagnosis is determinative of prognosis or near-term survival. Other groups have recommended rejecting use of longer-term life expectancy and categorical exclusions as allocation criteria.

Organizations that reviewed early CSC plans found that nearly all relied on algorithmic Sequential Organ Failure Assessment (SOFA) score and most considered coexisting conditions that predict 1- and 5-year mortality. Authors acknowledge that most states see this as identity blind, resulting in a fairer outcome. However, the differential rates of chronic and life-shortening conditions, on top of the same factors that increase the likelihood of contracting and dying of COVID-19, deprioritize people for having conditions rooted in historical and current inequities. Massachusetts is recognized for its efforts to create fairer standards. The framework uses near-term prognosis, and not long-term life expectancy, to mitigate the impact of disparities caused by social inequity. The plan continues to use SOFA scores, which are criticized for the ability to predict individual-level mortality.

Evidence Table 1. What populations might be at risk of experiencing inequities as the result of CSC implementation?

Title, Author(s), Date	Policy Area(s)	Research Method/Description	Relevant Findings
[1] Crisis Standards of Care and COVID-19: What Did We Learn? How Do We Ensure Equity? What Should We Do? Hick JL, Hanfling D, Wynia MK, Toner E. NAM 2021.	(1, 4, 6, d) Equity Declaration of a crisis Surge Staffing Resource Allocation and Rationing	Paper focuses on hospital application of CSC, though emergency medical services (EMS) experienced similar issues.	Provide suggestions based on areas of focus outlined in KDHE plan. Equity/ Restorative Justice: CSC protocols that will be used for making urgent allocation decisions in a disaster cannot be expected to remedy historic and structural inequity. However, they should not exacerbate underlying disparities.
[2] Mitigating Inequities and Saving Lives with ICU Triage During the COVID-19 Pandemic. White DB, Lo B. 2021	(1, 2, 5) Equity Health Status Restorative Justice Disparities Ethics triage	Critical Care Perspective	Three strategies to mitigate health inequities during ICU triage: 1. Introducing a correction factor into patients' triage scores to reduce the impact of baseline structural inequities. 2. Giving heightened priority to individuals in essential, high-risk occupations. 3. Rejecting use of longer-term life expectancy and categorical exclusions as allocation criteria.
[3] Inequity in Crisis Standards of Care.	(1,2) Equity	Identified state-level CSC through online searches and communication with state governments.	There is wide variability in the existence and specificity of CSC across the US. CSC may

Title, Author(s), Date	Policy Area(s)	Research Method/Description	Relevant Findings
Cleveland Manchanda E, Couillard C, Sivashanker K. 2020		Publicly available CSC were systematically reviewed for content including ethical framework and prioritization strategy.	disproportionately impact disadvantaged populations due to inequities in comorbid condition prevalence, expected lifespan, and other effects of systemic racism.
[4] Center for Public Representation (2020). Applying HHS's Guidance for States and Health Care Providers on Avoiding Disability-Based Discrimination in Treatment Rationing.	(1, 2, 5) Avoiding disability-based discrimination	The Center for Public Representation used a collaborative approach to address issues in interpreting and applying HHS guidance in the Office for Civil Rights Bulletin. This document from organizations with expertise in federal disability rights laws provides detailed explanation of how the requirements set forth in the HHS Bulletin would apply and how states and health care providers can take steps to modify policies and practices to avoid disability discrimination.	Recommendations include performing a thorough individualized review of each patient without assuming a specific diagnosis is determinative of prognosis or near-term survival.
[5] HHS Office for Civil Rights in Action Bulletin: Civil Rights, HIPAA, and the Coronavirus Disease 2019 (COVID-19) Issued March 28, 2020	(1, 2) Civil Rights HIPAA	HHS Office for Civil Rights issued a bulletin to ensure that entities covered by civil rights authorities prohibit discrimination.	Laws and regulations that prohibit discrimination based on race, color, national origin, disability, age, sex, and exercise of conscience and religion in HHS-funded programs. Recommendations for addressing the needs of at-risk populations: • Effective communication with individuals with a disability; • Meaningful access to programs and information for individuals with limited English proficiency; • Plain language and emergency messaging in languages prevalent in the area; • Address the needs of individuals with disabilities;

Title, Author(s), Date	Policy Area(s)	Research Method/Description	Relevant Findings
			• Respecting religious accommodations in treatment and access to clergy.
[6] Minnesota Crisis Standard of Care Framework Minnesota Department of Health Concept of Operations Updated February 25, 2020	(1, 2, 3, 4, 5, 6) State Plan	The Minnesota framework includes a community risk profile and the recommendation that regional health care coalitions (HCC) plan for specialized needs.	The Risk Profile section of the plan identifies the demographics of groups that may have different and specialized needs during a disaster. Pre- and post-incident assessments are recommended to determine the needs of affected communities, assist in estimating the number of people requiring special services, and the type of outreach needed to reach them.
[7] Massachusetts Crisis Standards of Care Planning Guidance Revised April 20, 2020	(1, 2) Equity language in plan	The Massachusetts planning guidance is a state plan that is referred to for efforts in addressing health equity and language of resource allocation.	The framework uses near-term prognosis, and not long-term life expectancy, to mitigate the impact of disparities caused by social inequity. The ethical principles are grounded in equity as a foundation. No patient is categorically excluded. All patients are treated as eligible to receive critical resources and receive a priority assignment based on illness severity. Special consideration is also given for communication that is culturally competent.

Q2. What ethical considerations have been used to determine who gets scarce resources and who does not?

Key Findings

Include 2-5 bullet points summarizing key findings related to the question

- Implementing crisis standards must be part of a systemwide approach in which all stakeholders, including health professionals and the public, participate in transparent decision-making.
- Colorado and Minnesota's crisis standards of care plans have hazard prevention and mitigation processes for both adult and pediatric populations and could be considered exemplars for other states.
- At the facility/systems level, policies and procedures regarding triage and rationing should be grounded in state level guidance, including ethical guidance.
- When transitioning away from conventional approaches to care is required, decisions must be transparent, accountable and consistent with fundamental ethical values.
- Bedside clinicians should not engage in ad hoc alterations to care practices.

Summary of Evidence

The ethical considerations of who gets scarce resources and who does not are closely tied to the discussions around health equity and access to care. All state plans reviewed include an ethics section and articulate the ethical principles, including equity, that serve as the framework.

Minnesota has created a stand-alone ethical framework for transitions between conventional care, contingency care and crisis care. The fundamental ethical values of the framework are discussed in the table below. The framework addresses both bedside ethics and organizational ethics issues. At the facility/systems level, policies and procedures regarding triage and rationing should be grounded in state level guidance, including ethical guidance; bedside providers should not make triage or rationing decisions unless they are based on the facility's policies, triage teams or designated individuals should make decisions; and clear transparency on what cannot be factored into decision-making is essential.

The American Medical Association Code of Medical Ethics discusses issues of the individual counterbalanced by the need to protect the welfare of the population but does not define clinical protocols for allocation decisions. The guidance does offer a variety of opinions regarding COVID-19 and CSC plans, outlined in Table 2.

While CSC plans and published articles have focused on the ethics of triage and resource allocation during COVID-19, other public health emergencies have their own ethical considerations.

Evidence Table 2. What ethical considerations have been used to determine who gets scarce resources and who does not?

Title, Author(s), Date	Policy Area(s)	Research Method/Description	Relevant Findings
[8] Respecting Disability Rights — Toward Improved Crisis Standards of Care Michelle M. Mello, J.D., Ph.D., Govind Persad, J.D., Ph.D., and Douglas B. White, M.D. July, 30 2020	(1,2) Ethics Disabilities	State comparison analysis of complaints filed against state CSC plans for the discrimination of people with disabilities. Complaint filed against Kansas from the Disability Rights Center of Kansas, Topeka, "State guidelines exclude from admission or transfer to critical care patients with "Advanced untreatable neuromuscular disease" "Advanced and irreversible immunocompromise" "Metastatic malignant disease with poor prognosis" (Guidelines also list other bases for exclusion not mentioned in the complaint.) Guidelines could permit withdrawal of ventilators from persons who use them regularly and seek acute care to reallocate them to others."	Six Guideposts 1. Do not use categorical exclusions. 2. Do not use perceived quality of life. 3. Use hospital survival and near-term prognosis (e.g., death expected within a few years despite treatment) but not long-term life expectancy. 4. When patients who use ventilators in their daily lives (e.g., home ventilation) present to acute care hospitals, their personal ventilators should not be reallocated to other patients. 5. Designate triage officers as the decision makers and train them to respect disability rights. 6. Include disability rights advocates in policy development and dissemination.
[9] US State Government Crisis Standards of Care Guidelines: Implications for Patients with Cancer. Hantel A, Marron JM, Casey M, Kurtz S, Magnavita E, Abel GA. 2021	(2) Ethics Scarce Resource Allocation	Cross-sectional population-based analysis examined state-endorsed CSC guidelines published before May 20, 2020, that included health care resource allocation recommendations.	Among states with CSC guidelines, most deprioritized some patients with cancer during resource allocation, and one-fourth categorically excluded them. The presence of an in-state comprehensive cancer center was associated with guideline availability, palliative care provisions, and lower odds of cancer-related exclusions. These data suggest that equitable state-level CSC considerations for patients with cancer

Title, Author(s), Date	Policy Area(s)	Research Method/Description	Relevant Findings
			benefit from the input of oncology stakeholders.
[10] Responding to COVID-19: How to Navigate a Public Health Emergency Legally and Ethically. Gostin LO, Friedman EA, Wetter SA. 2020	(2) Ethics Scarce Resource Allocation	Paper addresses questions such as: When the health system becomes stretched beyond capacity, how can we ethically allocate scarce health goods and services? How can we ensure that marginalized populations can access the care they need? What ethical duties do we owe to vulnerable people separated from their families and communities? And how do we ethically and legally balance public health with civil liberties?	Implementing crisis standards must be part of a system-wide approach in which all stakeholders, including health professionals and the public, participate in transparent decision-making.
[11] Allocation of Scarce Resources in a Pandemic: A Systematic Review of US State Crisis Standards of Care Documents. Romney D, Fox H, Carlson S, Bachmann D, O'Mathuna D, Kman N. 2020	(2, 4) Ethics Allocation of scarce resources	Following PRISMA guidelines (Preferred Reporting Items for Systematic Reviews and Meta-Analyses), state plans were analyzed based on the 2009 Institute of Medicine (IOM) report, which provided guidance for establishing CSC for use in disaster situations, as well as the 2014 CHEST consensus statement's 11 core topic areas.	Eighteen had strong ethical grounding. Twenty-one plans had integrated and ongoing community and provider engagement, education, and communication. Twenty-two had assurances regarding legal authority and environment. Sixteen plans had clear indicators, triggers, and lines of responsibility. Finally, twenty-eight had evidence-based clinical processes and operations. Five plans contained all 5 IOM elements: Arizona, Colorado, Minnesota, Nevada, and Vermont. Colorado and Minnesota have all-hazards documents and processes for both adult and pediatric populations and could be considered exemplars for other states.
[3] Inequity in Crisis Standards of Care Manchanda, E	(1, 2)	The article explores how race-neutral practices have resulted in discrimination against black people and greater burden on communities of color. At the time of the article, the publicly	The article discusses Massachusetts efforts to create fairer standards, though the 5-year mortality standard remains,

Title, Author(s), Date	Policy Area(s)	Research Method/Description	Relevant Findings
Couillard, C Sivashanker, K July 23, 2020	Structural racism Social determinates of health SOFA scores Incorporating race and other social factors into resource allocation	available crisis standards of care of 28 states were reviewed. Nearly all relied on algorithmic Sequential Organ Failure Assessment (SOFA) score and most considered coexisting conditions, predicated 1 and 5-year mortality.	and SOFA scores are criticized for the ability to predict individual-level mortality. The article specifically Massachusetts' revised CSC language and broader special-consideration clause.
[4] Center for Public Representation (2020). Applying HHS's Guidance for States and Health Care Providers on Avoiding Disability-Based Discrimination in Treatment Rationing.	(1, 2, 5) Avoiding disability-based discrimination	The Center for Public Representation used a collaborative approach to address issues in interpreting and applying HHS guidance in the Office for Civil Rights Bulletin.	Each plan addressing allocation of scarce resources during the COVID-19 pandemic should begin with: 1. a non-discrimination clause that serves as a foundation to inform the decision-making process that follows; and 2. a reminder to physicians and triage teams of possible biases that could arise that must be negated.
Center for Public Representation and Partners Secure Federal Approval of Revised Crisis Standards of Care in Arizona Issued May 25, 2021	(1, 2) Disability rights State resolutions of civil rights issues	Arizona and national civil rights groups worked with the OCR to make changes to the CSC to prevent discrimination in healthcare decision-making.	Critical areas of resolution: • Healthcare decisions that discriminate against protected groups are prohibited. • No exclusions or deprioritizing based on resource intensity or diagnosis. • Resource decisions based only on short-term survivability. • Reasonable modifications required to support needs and communication, and reasonable modifications to tools used to

Title, Author(s), Date	Policy Area(s)	Research Method/Description	Relevant Findings
			prioritize access to correct against the impact of prior conditions. • Reallocation of personal ventilators prohibited. • Blanket Do Not Resuscitate (DNR) policies prohibited.
[12] Disability Rights as a Necessary Framework for Crisis Standards of Care and the Future of Health Care Guidry-Grimes, L Savin, K Stramondo, J Reynolds, M Tsaplina, M Blankmeyer Burke, T Garland-Thomson, R Tarzian, A Dorfman, D Fins, J May-June 2020	(1) Congregate care settings vulnerabilities Disability issues in an emergency Avoiding personal bias Accessible communication Glasgow Coma Scale disability adjustment	The article focuses on the inclusion of disability perspectives in long-term care facilities, and accessible communication needs.	Institute of Medicine's vision elements: fairness; equitable process; community and provider engagement, education, and communication; and rule of law. Fairness is discussed in the context of long-term care facilities with vulnerable patients, patients with disabilities needing extra support in ICU, and resource allocation systems. In order to be transparent, consistent, proportional and accountable to the people affected by the guidelines, plans should incorporate the perspectives of the disability community. Intentional communication access through multiple modes, as well as established relationships with the

Title, Author(s), Date	Policy Area(s)	Research Method/Description	Relevant Findings
			community is needed to respond to real and evolving issues.
[13] Crisis standards of care: Guidance from the AMA Code of Medical Ethics Updated April 5, 2020	(2) Code of Medical Ethics Allocating limited health care resources Withholding or withdrawing life-sustaining treatment Triage teams and triage officers Ethical claim of physicians and healthcare workers to allocated resources Evaluating risks of CPR in decision to resuscitate	The guidance from the AMA Code of Medical Ethics discusses issues of the individual counterbalanced by the need to protect the welfare of the population.	While the code does not define clinical protocols for allocation decisions, the code provides foundational guidance for ethically sound crisis standards of care guidelines. The AMA cites a variety of opinions related to COVID-19 and CSC frameworks, including: • Considerations for triage and allocation of scarce resources, • Using triage teams instead of treating clinicians to make resource decisions, • Option of prioritizing healthcare professionals in prioritizing resources, and • Evaluating the risk of CPR.
Ethical Framework for Transition Between Conventional, Contingency, and Crisis Conditions in Pervasive or Catastrophic Public Health Events with Medical Surge Implications Minnesota Crisis Standards of Care	(1, 2) Ethical framework Conventional, contingency and crisis conditions	The Minnesota framework provides ethical considerations for managing challenges in pervasive or catastrophic public health events. The framework has been updated to clarify fair process requirements for expedited decision-making. They no longer address specific allocation of specific resources, or other challenges related to types of interventions (e.g, CPR) like in previous guidance.	Recommended ethical framework: • Accountable, transparent, and trustworthy, • Promote solidarity and mutual responsibility, • Respond to needs respectfully, fairly, effectively, and efficiently. Recommended ethical objectives:

Title, Author(s), Date	Policy Area(s)	Research Method/Description	Relevant Findings
Updated November 24, 2021			• Protect the population's health by reducing mortality and serious morbidity, • Respect individuals and groups, • Strive for fairness and protect against inequity.

Q3. What strategies have been used to maintain transparency around crisis standards of care?

Key Findings

- Community engagement increases awareness for the need of emergency preparedness.
- Engaging the community ensures that the CSC plan reflects the values and priorities of the community.
- Active deliberation at the community level "helps to reveal misunderstandings, biases, and areas of deep disagreement."
- Topics covered in the Minnesota Engagement Framework include patient prioritization methods, factors that matter most when you cannot save everyone, fairness in decision making, and whether certain populations (I.e. health care workers) should receive treatment priority.
- Engage community members representative of the diverse demographics of the state and to ensure equity; engage groups that have been historically marginalized.

Summary of Evidence

Transparency occurs at three levels: public-facing CSC plans prepared with community engagement, communication within the health system of the triage plan and decision-making processes, and communication with patients during the implementation of scarce resources standards of care. At the plan level, community engagement is the process by which citizens engage in a dialogue around complex problems rather than a reactionary role. Minnesota has a stand-alone appendix addressing community engagement which outlines their six principles of successful community engagement. At the frontline level, hospital and EMS staff are educated and well versed in the facility plan to allow for feedback on sensitive topics.

Evidence Table 3: What strategies have been used to maintain transparency around crisis standards of care?

Title, Author(s), Date	Policy Area(s)	Research Method/Description	Relevant Findings
[14] Communication and Transparency as a Means to Strengthening Workplace Culture During COVID-19 Issued March 1, 2021 Nadkarni, A Levy-Carrick, N Kroll, D Gitlin, D Silbersweig, D	(3) Communication Transparency Workforce Culture and Staffing	This article examines the role of two-way communication in a time of crisis for leaders to facilitate optimal communication with frontline staff.	Harnessing technology and facilitating two-way communication. Emphasizing the role of communication in maintaining trust and engagement. Role of communication in reducing uncertainty and ambiguity, while generating participative decision making.
[15] Minnesota Crisis Standards of Care Framework Community Engagement Guidance Updated November 1, 2019	(3) Community engagement at the frontline level Recommendations	This guidance outlines the community engagement practices both at the plan level with the community and at the frontline with facility staff.	Six principles of successful community engagement: 1. Engage the public early in the process. 2. Accurately represent the public and include hard to reach and at-risk populations. 3. Provide information and give the opportunity to discuss issues. 4. Deliberation is the goal in and of itself. 5. Public input should be given consideration. 6. Leadership, support and sufficient resources are needed to complete the process.
[16] Crisis Standards of Care Community Engagement Summary Issued February 23, 2018	(3, f) Community engagement strategies Resource allocation	This summary report discusses the strategies and topics used to facilitate discussion around complex decisions for how to use strained resources.	Methods of facilitating community discussions included patient ranking of decision-making factors, and pre- and post-discussion surveys. Discussion topics included when you can't save everyone, what matters most?, should health care workers have treatment priority?, what is a health care provider's authority to reallocate treatment?, and perceived fairness on treatment decisions.

Q4. 4. What strategies exist related to transfer of patients and sharing of resources to prevent pockets of crisis care?

Key Findings

- Create local and regional collaboratives for distribution of scarce resources where they are needed most.
- Use regional/coalition information sharing including capacity, acuity, staffing information.
- Each state should have documented processes to reallocate available staff and material resources and compare relevant indicators of impact and need across requesting facilities (e.g., percent usual occupancy in addition to staffing strategies implemented).
- Patient transfer decisions should be made irrespective of patient insurance status and other nonclinical factors and should be based on patient loads and clinical needs only.

Summary of Evidence

Communication across the state from all levels of care is essential to determine where resources are scarce or in excess and eligible for reallocation. Additionally, being aware of indicators and triggers to implement crisis standards of care will initiate action items to be completed and maintained. Minnesota's plan for surge operations includes scope, authority, planning assumptions, as well as concept of operations including indicators/triggers, threat assessments, communications, and the explicit roles of state entities when CSC Framework is activated.

Evidence Table 4: What strategies exist related to transfer of patients and sharing of resources to prevent pockets of crisis care?

Title, Author(s), Date	Policy Area(s)	Research Method/Description	Relevant Findings
Minnesota Crisis Standards of Care Framework Surge Operations and Crisis Care for Emergency Medical Services	(4)	Minnesota's stand-alone attachment to its CSC plan as a decision support tool that outlines roles and responsibilities for stakeholders.	Roles and Responsibilities of State Entities, such as: Minnesota Department of Health (MDH): • Facilitate health care resource requests to state/inter-state/federal partners. • Provide treatment and other health related guidance for clinicians, local and tribal public health, and community members, based on the nature of the event. Minnesota Division of Homeland Security and Emergency Management (HSEM): • Serve as point of contact for resource requests. EMS Regulatory Board (EMSRB)

Title, Author(s), Date	Policy Area(s)	Research Method/Description	Relevant Findings
			• Support hospitals by regional and state-level coordination of EMS surge capacity implementation. Local and Tribal Public Health • Supports alternate care sites as appropriate.
[17] Hospital Surge Preparedness and Response Index. Thomasian NM, Madad S, Hick JL, Ranney ML, Biddinger PD. 2021	(4)	The objective of the Hospital Surge Preparedness and Response Index is to improve planning by linking action items to institutional triggers across the surge capacity continuum.	Index addresses staffing, space, supplies, and system triggers and action items to complete when initiating crisis standards of care and how crisis standards differ from conventional and contingent standards. Action Items: Supplies • Leverage alternative supply chains • Create local and regional collaboratives for distribution of scarce resources where they are needed most. • Collaborate with non-governmental entities and private corporations to develop new supply chains. Action Items: System • Use regional/coalition information sharing including capacity, acuity, staffing information
[1] Crisis Standards of Care and COVID-19: What Did We Learn? How Do We Ensure Equity? What Should We Do? Hick JL, Hanfling D, Wynia MK, Toner E. NAM 2021.	(1, 4, 6, d) Equity Declaration of a crisis Surge Staffing Resource Allocation and Rationing	Paper focuses on hospital application of CSC, though emergency medical services (EMS) experienced similar issues.	Community and regional consistency in the delivery of care is crucial to avoiding pockets of crisis care and assuring fairness, especially during times of patient surges where there is increased mortality as a result. COVID-19 forced health care coalitions, hospital associations, and health care systems to refine data collection and information sharing for system status

Title, Author(s), Date	Policy Area(s)	Research Method/Description	Relevant Findings
			monitoring. Such data coordination permitted coalition/state actions such as load-balancing (i.e., medical operations coordination cells [MOCC]) that contributed greatly in many areas to maximal use of critical care beds by facilitating transfers from overwhelmed facilities. Some shortfalls involved patients being refused transfer due to insurance status. Close coordination with EMS is required to ensure that adequate resources are available for transfers and to maintain emergency response capacity. Regional and interstate coordination of EMS assets may be required. Health care coalitions and state entities were critical in allocating resources to facilities most in need, including PPE, ventilators, and staffing. These coordination and prioritization mechanisms have been articulated and encouraged by the Department of Health and Human Services (HHS) Office of the Assistant Secretary for Preparedness and Response (ASPR) Hospital Preparedness Program (HPP) requirements.

Q5. What are evidence-based practices or validated tools for guiding triage and clinical decision making?

Key Findings

- SOFA scores can be used as a comparative factor but should not be the only criterion used for clinical decision making.
- Colorado's CSC plan includes SOFA scores, Charlson Comorbidity Index, and a tiered approach for guiding triage.
- Minnesota framework includes a community risk profile, which is an assessment that identifies the demographics of groups that may have different and specialized needs during a disaster.

- In times of shortages, allocation of ventilators could be administered under time-limited trials, where the patient must reach medical milestones for improvement. If not met, the patient would no longer receive treatment.

Summary of Evidence

Clinical decision-making should never be based on one tool or approach. SOFA scores are a single criterion that cannot be utilized for all crisis scenarios, specifically during surge where patients present with respiratory failure. Other patient factors (e.g., underlying diseases and current response to treatment) should be considered when making triage decisions. During times where resources are scarce, Colorado utilizes Scarce Resource Strategies from Minnesota Healthcare System Preparedness Program.

Evidence Table 5. What is evidence-based practices or validated tools for guiding triage and clinical decision making?

Title, Author(s), Date	Policy Area(s)	Research Method/Description	Relevant Findings
[18] Life-Years & Rationing in the COVID-19 Pandemic: A Critical Analysis. Gaurke M, Prusak B, Jeong KY, Scire E, Sulmasy DP. 2021	(2,5) Resource Allocation Triage	Portion of the Hastings Report that outlines protocols for CSC with the assumption clinicians will have to be tasked with selecting patients to receive care or scarce resources, tie-breaking criteria, and probability of survival.	The approach emphasizes the necessity of respecting persons as valuable in themselves. All sick, injured, and disabled persons have equal value in themselves as persons, no matter what their afflictions prevent them from doing. To abandon that principle in the setting of pandemic scarcity would undermine the moral basis of health care. In times of shortages, allocating ventilators would be to adopt a practice that is often used in the routine practice of clinical care, which is to offer patients a “time-limited trial” of therapy. Using this approach, patients are offered critical care treatments, including ventilation, for a defined period, with the understanding that if certain clinical milestones are not met within that time frame, then the treatment will be withdrawn. Clinicians are motivated to act on a first-served basis.
[19] "We're Not Ready, but I Don't Think You're Ever Ready." Clinician Perspectives on Implementation of Crisis	(2,5) Resource Allocation Triage	A protocol was created to operationalize national and state guidelines for triaging ventilators during crisis conditions. Focus groups and key informant interviews were conducted	Results: Participants anticipated that implementing this protocol would challenge their roles and identities as clinicians including both their fiduciary duty to the patient and their decision-making autonomy. Despite this, many participants acknowledged the need for such a protocol to

Title, Author(s), Date	Policy Area(s)	Research Method/Description	Relevant Findings
Standards of Care. Chuang E, Cuartas PA, Powell T, Gong MN. 2020		from July-September 2018 with clinicians at three acute care hospitals of an urban academic medical center. Respiratory therapists, intensivists, nursing leadership and the palliative care interdisciplinary team participated in focus groups. Key informant interviews were conducted with emergency management, respiratory therapy, and emergency medicine.	standardize care and minimize bias as well as to mitigate potential consequences for individual clinicians. Participants identified the question of considering patient quality of life in triage decisions as an important and unresolved ethical issue in disaster triage. Conclusion: Clinicians' discomfort with shifting roles and obligations could pose implementation barriers for crisis standards of care.
[20] Colorado Crisis Standards of Care plan	Triage Resource Allocation Medical mile-markers	Modeled scarce resource allocation protocols after Minnesota Healthcare System Preparedness Program.	Scarce Resource Strategies from Minnesota Healthcare System Preparedness Program. Flow charts for decision to allocate resources or treatment to a patient in multiple crisis scenarios.
[21] SOFA Score: What it is and How to Use it in Triage. ASPR TRACIE. 2020 https://files.asprtracie.hhs.gov/documents/aspr-tracie-sofa-score-fact-sheet.pdf	SOFA score (when and how to utilize) Triage Resource Allocation	The Sequential Organ Failure Assessment (SOFA) score is a scoring system that assesses the performance of several organ systems in the body (neurologic, blood, liver, kidney, and blood pressure/hemodynamics) and assigns a score based on the data obtained in each category. The higher the SOFA score, the higher the likely mortality.	It is important to remember that SOFA is a single criterion. Must consider other patient factors (e.g., underlying diseases and current response to treatment) into account when making triage decisions. SOFA scores can be used as a comparative factor. When calculated daily, it can also be used to establish trends in the individual patient's course, although patients with respiratory failure from viral pneumonia and other causes may not show improvement and may, in fact, worsen over the first several days of hospitalization. • SOFA scores in primary respiratory failure are usually low, and therefore will not assist in the triage process.

Title, Author(s), Date	Policy Area(s)	Research Method/Description	Relevant Findings
[22] Colorado Crisis Standards of Care for Hospital Triage Frequently Asked Questions, 2020 https://drive.google.com/file/d/1MA_WHI7s3h8KrOetczcAl5E8t0vf0Qn_/view	(3, 5) Triage Clinical Decision Making Transparency to the public	Explanation of Tiers Tier 1: A scoring system based on a combination of acuity or severity of acute illness (the likelihood of surviving weeks) and morbidity, or measures of chronic illness (the likelihood of surviving months to years). Tier 2: Pediatric patients, health care workers and first responders. Tier 3: Special considerations (pregnancy, life-years saved, sole caregivers). Tier 4: Random allocation.	Use of SOFA score and Charlson Comorbidity Index paired with Tiered approach for clinical decision making by a CSC triage team. The Modified Charlson Comorbidity Index predicts the chances of a patient dying within one year. The SOFA score and Modified Charlson Comorbidity Index are evidence-based scoring tools that would be used to help hospitals decide who should receive a breathing machine (ventilator) or bed in the intensive care unit (ICU) if there are not enough for all the patients who need one at a given time.
[6] Minnesota Crisis Standard of Care Framework Minnesota Department of Health Concept of Operations Updated February 25, 2020	(1, 2, 3, 4, 5, 6) State Plan	The Minnesota framework includes a community risk profile and the recommendation that regional health care coalitions (HCC) plan for specialized needs.	The Risk Profile section of the plan identifies the demographics of groups that may have different and specialized needs during a disaster. Pre- and post-incident assessments are recommended to determine the needs of affected communities, assist in estimating the number of people requiring special services, and the type of outreach needed to reach them.

Q6. What strategies have been used to address staffing concerns during CSC implementation?

Key Findings

- Adjusting admission criteria in times of surge will be needed to lessen patient loads.
- National curricula should be refined and implemented by hospitals to set nursing and physician staff expectations for role in providing a higher level of care in contingency or crisis scenarios.
- Limited or reduced staffing in times of crisis should be included in CSC planning and surge preparedness.

Summary of Evidence

Utilizing supplemental staffing agencies proved to be beneficial when hospitals experienced a shortage of medical staff throughout the pandemic. Hospitals should account for potential staff shortages during times of crisis related surges. Adjusting patient-to-staff member ratios and being transparent about providing a certain level of care in times of surge could be beneficial for staff and patient expectations. Advocates, coalitions, and the state should agree on accepted definitions for what is considered crisis staffing (e.g., use of nontraditional providers in critical care environments, increase in nurse-to-patient ratios beyond a particular percentage, use of tiered supervised staffing) to enable better situational awareness and improved load-balancing of patients and allocation of available staff.

Evidence Table 6. What strategies have been used to address staffing concerns during CSC implementation?

Title, Author(s), Date	Policy Area(s)	Research Method/Description	Relevant Findings
[17] Hospital Surge Preparedness and Response Index. Thomasian NM, Madad S, Hick JL, Ranney ML, Biddinger PD. 2021	(4)	The objective of the Hospital Surge Preparedness and Response Index is to improve planning by linking action items to institutional triggers across the surge capacity continuum.	Index addresses staffing, space, supplies, and system triggers and action items to complete when initiating crisis standards of care and how crisis standards differ from conventional and contingent standards. Action Items: Staffing • Obtain contract staff • Adjust admission criteria for specific units as needed • Cross-cover staff of similar training • Adjust staff to ratios or acuity ass needed Action Items: System • Use regional/coalition information sharing including capacity, acuity, staffing information
[1] Crisis Standards of Care and COVID-19: What Did We Learn? How Do We Ensure Equity? What Should We Do? Hick JL, Hanfling D, Wynia MK, Toner E. NAM 2021.	(1, 4, 6, d) Equity Declaration of a crisis Surge Staffing Resource Allocation and Rationing	Paper focuses on hospital application of CSC across multiple areas of focus.	• Hospitals should include the possibility of extreme staffing shortages in their surge capacity and CSC planning, and educate staff about the plans, new roles, and necessary competencies. • Health care facilities should ensure dialogue with their unions and appropriate flexibility in collective

Title, Author(s), Date	Policy Area(s)	Research Method/Description	Relevant Findings
			bargaining agreements to allow a safe and flexible disaster response. • National curricula should be refined and implemented by hospitals to improve nursing and physician staff comfort in stepping up to provide a higher level of care in contingency or crisis scenarios. This should be reinforced by just-in-time training. • Health care coalitions and states should agree on commonly accepted definitions for crisis staffing (e.g., use of nontraditional providers in critical care environments, increase in nurse-to-patient ratios beyond a particular percentage, use of tiered supervised staffing) to enable better situational awareness and improved load-balancing of patients and allocation of available staff.

Qb. What means can be used to provide legal protections for providers and facilities?

Key Findings

- Colorado, Arizona, and Minnesota each provided similar frameworks for legal considerations and assurances to providers and medical entities of limited liabilities (Arizona pages 74-79, Colorado 11-15 and Minnesota stand-alone appendix).
- Each state reviewed refers to their Attorney General's Office to provide additional guidance and direction on applicable state laws.
- Each state reviewed provides some assurances that following the guidelines will limit liability, but no state health department takes legal authority (Colorado, pages 147-148 and Minnesota, page 17).
- Legal protections for Kansas healthcare facilities during times of crisis or the ongoing COVID-19 pandemic is determined by statute.

Summary of Evidence

Contents of the legal section across state CSC frameworks often include: a disclaimer, introduction, scope, state statutes and regulations, liability, protection in an emergency, and federal laws. States frequently work with the Attorney General's Office to review and comment on legal matters. The Attorney General's Office can identify statutes, orders and regulations that may be waived or modified to facilitate healthcare during emergency situations. All legal frameworks include a lengthy discussion of current state laws and scope of the law in an enacted Crisis Standards of Care. Legal protections for Kansas healthcare facilities during times of crisis or the ongoing COVID-19 pandemic is determined by statute. Laws previously enacted included temporary suspension of certain requirements related to medical care facilities and immunity from civil liability for certain healthcare providers.

Evidence Table b. What means can be used to provide legal protections for providers and facilities?

Title, Author(s), Date	Policy Area(s)	Research Method/Description	Relevant Findings
[23] Hodge Jr, J Piatt, J Legal Decision-making and Crisis Standards of Care Tiebreaking During the COVID-19 Pandemic and in Other Public Health Emergencies Issued January 21, 2022	(b) Legal Decision Making Tiebreaking Scarce Resources	The article focuses on the legal challenges of CSC implementation, and the most controversial legal issues of tough choices in real-time for immediate access to beds, staff, equipment, and treatment.	Legal standards for tie-breaking decisions were discussed: individualized medical assessments, age as a prognostic factor, short-term survivability, equitable clinical scores, suitability of limited resources, patient or proxy/surrogate informed consent and choices, and access to appeals.
[24] Crisis Standards of Care and State Liability Shields, Koch, V. 2020	(b) Legal Decision Making	Paper addresses and compares liability shields of state CSC plans.	Some commentators assert that there may be a legal distinction between withholding and withdrawing life-sustaining treatments or therapies, such as ventilators. If legal liability shields are not in place by state declaration/executive order, health care providers risk lawsuits, financial penalties, jail time, and higher medical malpractice insurance rates. Colorado's law is tailored to actions taken in compliance with state crisis standards of care or pandemic-related guidelines, covering harm that occurs when the health care provider has "complied"

			completely with board of health rules regarding the emergency epidemic and with executive orders regarding the disaster emergency." Although this law ostensibly provides liability protections for health care providers who negligently care for both COVID-19 and non-COVID-19 patients, it is narrow in the sense that it only covers actions taken in compliance with emergency state rules. Similarly, Minnesota's law provides immunity to health care providers if the negligence occurred while the health care provider was acting consistent with emergency plans.

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