Ethical Guidance for Disaster Response, Specifically Around Crisis Standards of Care: A Systematic Review

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Background. Terrorism, disease outbreaks, and other natural disasters and mass casualty events have pushed health care and public health systems to identify and refine emergency preparedness protocols for disaster response. Ethical guidance, alongside legal and medical frameworks, are increasingly common components of disaster response plans.

Objectives. To systematically review the prevalence and content of ethical guidance offered for disaster response, specifically around crisis standards of care (CSCs).

Search methods. We systematically indexed academic literature from PubMed, Google Scholar, and ISI Web of Science from 2012 to 2016.

Selection criteria. We searched for peer-reviewed articles that substantively engaged in discussion of ethical guidance for CSCs.

Data collection and analysis. Researchers screened potential articles for identification and discussion of ethical issues in CSC planning. We categorized and cataloged ethical concepts and principles.

Main results. Of 580 peer-reviewed articles mentioning ethics and CSCs or disaster planning, 38 (6%) met selection criteria. The systematic review of the CSC ethics literature since 2012 showed that authors were primarily focused on the ethical justifications for CSC (n = 20) as well as a need for ethics guidelines for implementing CSCs; the ethical justifications for triage (n = 19), both as to which criteria to use and the appropriate processes by which to employ triage; and international issues (n = 17). In addition to these areas of focus, the scholarly literature included discussion of a number of other ethical issues, including duty to care (n = 11), concepts of a duty to plan (n = 8), utilitarianism (n = 5), moral distress (n = 4), professional norms (n = 3), reciprocity (n = 2), allocation criteria (n = 4), equity (n = 4), research ethics (n = 2), duty to steward resources (n = 2), social utility and social worth (n = 2), and a number of others (n = 20).

Although public health preparedness efforts have paid increasing attention to CSCs in recent years, CSC plans have rarely been implemented within the United States to date, although some components are common (e.g., triage is used in US emergency departments regularly). Conversely, countries outside the United States more commonly implement CSCs within a natural disaster or humanitarian crisis response, and may offer significant insight into ethics and disaster response for US-based practitioners.

Conclusions. This systematic review identifies the most oft-used and -discussed ethical concepts and principles used in disaster planning around CSCs. Although discussion of more nuanced issues (e.g., health equity) are present, the majority of items substantively engaging in ethical discussion around disaster planning do so regarding triage and why ethics is needed in disaster response generally.

Public health implications. A significant evolution in disaster planning has occurred within the past decade; ethical theories and frameworks have been put to work. For ethical guidance to be useful, it must be practical and implementable. Although high-level, abstract frameworks were once prevalent in disaster planning—especially in the early days of pandemic planning—concerns about the ethically difficult concept of CSCs pervade scholarly articles. Ethical norms must be clearly stated and justified and practical guidelines ought to follow from them. Ethical frameworks should guide clinical protocols, but this requires that ethical analysis clarifies what strategies to use to honor ethical commitments and achieve ethical objectives. Such implementation issues must be considered well ahead of a disaster. As governments and health care systems plan for mass casualty events, ethical guidance that is theoretically sound and practically useful can—and should—form an important foundation from which to build practical guidance for responding to disasters with morally appropriate means. (*Am J Public Health.* 2017;107:e1–e9. doi:10.2105/AJPH.2017.303882)

PLAIN-LANGUAGE SUMMARY

Ethical guidance, alongside legal and medical frameworks, is an increasingly common component of disaster response plans. This systematic review examines how frequently ethical guidance is offered for crisis standards of care (CSCs) during disaster response. A CSC declaration is a recognition that resources are limited, and that everyday standards of clinical care are not possible under the circumstances.

When we screened 580 peer-reviewed articles mentioning ethics and CSCs or disaster planning, 38 (6%) included substantial discussion of ethical considerations (rather than, for example, focusing primarily on scientific treatment protocols). The systematic review of the CSC ethics literature since 2012 showed that authors were primarily focused on the ethical justifications for CSCs (n = 20) as well as a need for ethics guidelines for implementing CSCs; the ethical justifications for triage (n = 19), both as to which criteria to use and the appropriate processes by which to employ triage; and the notion of a "duty to care" or respond in disasters (n = 11).

As governments and health care systems plan for disasters, ethical guidance that is theoretically sound and practically useful can—and should—form an important foundation from which to build practical guidance for responding to disasters with morally appropriate means.

After the terrorist attacks of September 11, 2001, and the subsequent distribution of anthrax through the postal service, public health agencies and health care organizations in the United States began preparing in earnest for public health emergencies. Discussions initially focused on bioterror attacks, but attention soon shifted to pandemic influenza planning and then broadened to include natural disasters. Of particular interest are mass casualty events (MCEs), "act[s] of bioterrorism or other public health or medical emergenc[ies] involving thousands, or even tens of thousands, of victims."[1(p5)] A diverse array of crises may constitute MCEs. Some events—natural disasters such as earthquakes or floods, or terrorist attacks such as detonation of "dirty bombs" (radiological dispersal devices)—have sudden impact, with significant casualties at the outset of the event. Other events, such as influenza pandemics or acts of terrorism involving mass exposure to anthrax, have an extended impact, with casualties building to potentially catastrophic numbers over time. What these diverse events have in common is their potential to overwhelm the public health and health care systems, and thus to require rationing of scarce resources. Such events require responses that deviate significantly from typical standards of care.[2]

Because standards of care "address not only what care is given, but to whom, when, by whom, and under what circumstances or in what places,"[1(p7)] planning must address all of these factors to define appropriate standards of care for MCEs. Such standards have come to be known as crisis standards of care (CSCs), defined 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."[3(p18)] The CSC plans guide response to a triggering event or events, once the surge in demand for services exceeds conventional (everyday) care standards and contingent (lower-level emergency response) care standards.[3]

Establishing CSC plans requires addressing a number of complex ethical issues, prompting thought leaders to insist that an ethical framework for CSCs forms the "bedrock" for preparedness.[3] This systematic review focuses on those ethical issues and identifies ethical guidance regarding CSCs in the scholarly literature.

NATIONAL CALLS FOR CREATING PLANS FOR CRISIS STANDARDS OF CARE

In 2004, the US Department of Health and Human Services convened key experts in the fields of bioethics, emergency medicine and management, health administration, law and policy, and public health to offer guidance for planning for CSCs for MCEs (then referred to as "altered standards of care").[1] The resulting report posits that the goal of the response to an MCE should be "to maximize the number of lives saved," and calls for attention to fairness, openness, transparency, and accountability in allocation of resources, and protection of the rights of individuals with respect to privacy, confidentiality, and imposition of limitations on personal freedom.[1] Although the report identifies these ethical expectations, it does not offer substantive analyses justifying them or exploring their practical implications for implementing emergency response plans.

In 2009, the Agency for Healthcare Research and Quality released *Mass Medical Care With Scarce Resources: The Essentials*, to provide tools and models for emergency planners.[2] The report includes a brief but more explicit discussion of ethical issues than the earlier Department of Health and Human Services report. It outlines key ethical considerations to consider in planning, contending that a "balance must be struck between utilitarian (the greatest good for the greatest number) and duty-based (respect for all human beings) planning assumptions."[2(p5)] An algorithm is presented to address areas in which ethical disagreements could occur in the planning process; this tool highlights norms such as respect for persons, beneficence, nonmaleficence, justice, truth telling, liberty, opportunity, and reciprocity. The report advocates that planners must provide clear and well-documented answers to ethical questions.[2]

The Health and Medical Division (HMD) of the National Academies of Sciences, Engineering, and Medicine, formerly known as the Institute of Medicine (IOM), has also issued 2 major reports on CSC planning, a letter report in 2009 and a full report in 2012. The 2009 report offers a definition of CSCs to frame the issues and promote consistency across planning discussions.[3] It also identifies 5 essential elements for CSC plans: an explicit ethical framework to serve as a foundation for planning, community and provider engagement, legal authority, specific triggers and delineations of responsibility, and evidence-based clinical protocols. The HMD/IOM maintains that the overarching ethical goal for CSC plans is "for them to be recognized as fair by all affected parties"; it states that all of the other ethical norms included in its framework are meant to promote such fairness.[3(p28)] Those other norms are duty to care, duty to steward resources, transparency, consistency, proportionality, and accountability.[3] The report offers preliminary analyses of each of these norms.

The 2012 HMD/IOM report embraces and expands upon the discussion of the 2009 letter report's ethical framework and offers the most comprehensive guidance concerning CSC planning to date.[4] Nevertheless, its take on ethical issues does not represent a consensus position; controversies must be considered. The HMD/IOM reports offer some guidance about specific practical issues (such as the use of age as a factor in making allocation decisions), but additional guidance about such concrete practical issues is needed. This article addresses that gap in specific national guidance through a systematic review of the scholarly literature on the topic of ethical issues related to CSCs.

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METHODS

This systematic review assessed what ethical guidance exists in scholarly publications for preparedness concerning CSCs during disaster response from the publication of the landmark 2012 IOM report on CSC through November 2016. This is registered in PROSPERO under protocol 42016045199. We used PubMed and Medline to identify relevant scholarly literature, focusing on the ethics of CSCs (formerly known as altered standards of care), as well as triage ethics in disasters. The final language for this search was ([ethic*] AND "altered standards of care") OR ([ethic*] AND "crisis standards of care") OR ([ethic*] AND triage AND disaster). Because of the breadth of subject matter and the potential for user-defined language (i.e., jargon) denoting similar concepts, we purposefully kept the search terms broad to best capture relevant literature. In-depth abstract review and full review then grounded identification of on-topic articles (Figure 1).

We identified almost 600 articles with the search stratagem; we excluded 277 articles from the literature review, as they were published before 2012. The Institute of Medicine's seminal report in 2012 makes that a reasonable year in which to begin the systematic review. This IOM report is not only influential, but it also included a retrospective review of the literature to determine the impact of the IOM's 2009 report. In addition, the Chest Consensus Statement on ethical issues in care of the critically ill and injured in pandemics and disasters was based on a review of relevant literature before 2012.[5] For both Web of Science and Google Scholar, we conducted citation mapping to identify potentially pertinent articles and ethical guidance on CSCs. We captured synopses, ethical topics, locus (US domestic or international), and other major themes during full review.

Because this systematic review focused on ethics guidance, we did not create summary measures; formal quantitative risk bias assessment is not necessarily appropriate for normative analyses such as those collected herein. However, abstract review and full review did examine whether articles met inclusion criteria that were established a priori (i.e., published 2012 or later and included substantive ethical discussion as opposed to mere mention of an ethics issue). The primary themes of interest were norms utilized in the ethical guidance, discussion of ethical issues in implementation of CSCs, and discussion of ethical justifications for (or opposed to) CSCs. We judged an article as having substantive ethical discussion if ethical concepts, their justification, and their application to disaster response were discussed at any length. More typically, we encountered articles that mentioned an ethical concept, and perhaps its importance, but solely in the context of a technical or scientific discussion. We observed this, for instance, in articles focusing on setting clinical guidelines or research studies into new interventions with bearing on disaster response.

Two authors captured potential literature and conducted abstract reviews. These authors used an inductive approach to categorize and code major themes. We used constant comparison and cross-coding. We reported nonacademic literature (e.g., state plans) captured in citation mapping or other search strategies in the Table A (available as a supplement to the online version of this article at http://www.ajph.org) but excluded it from the overall analysis.

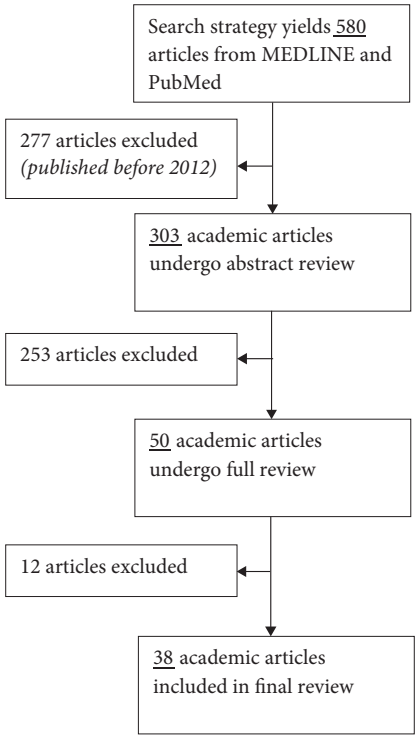

FIGURE 1—Search Strategy for Systematic Review of Articles on Ethical Guidance for Crisis Standards of Care

RESULTS

Just over 300 scholarly articles underwent abstract review, after which we excluded 253 articles because of a lack of substantive discussion on the ethics of CSCs. Most frequently, these articles presented medical or scientific guidance, absent concomitant discussion of ethical considerations for CSCs. In total, 50 articles underwent full review—12 of which were excluded from the final article pool as they lacked substantive ethics discussion of CSCs—yielding 38 academic articles constituting a final portion of the systematic review.

Ethical Analyses in the Scholarly Literature

A systematic review of the CSC ethics literature since 2012 showed that authors were primarily focused on the ethical justifications for CSCs as well as a need for ethics guidelines for implementing CSCs; the ethical justifications for triage, both as to which criteria to use and the appropriate processes by which to employ triage; and the notion of a duty to care or respond in disasters. In addition to these areas of focus, the scholarly literature included discussion of a number of other ethical issues, including concepts of a duty to plan, professional norms, reciprocity, moral distress, allocation criteria, equity, research ethics, duty to steward resources, social utility and social worth, as well as a number of others (Table 1).

The necessity of rationing. The primary justification offered for CSCs is one of necessity: given resource and staffing constraints in MCEs, public health or health care providers may not be able to adequately provide care to all patients who need it.[3] A shift must occur in which the system moves from a primary focus on meeting the needs of individual patients to overall promotion of the public's health—both current and likely future patients.[3] Implementing CSCs may involve altered scopes of practice, modified

TABLE 1—Ethical Concepts Captured in Systematic Review of Crisis Standards of Care Literature

Ethical Concept	Description	Count	Citations
Ethical justifications of or need for guidance on CSCs	These are arguments for the moral and practical needs for CSCs, as well as why CSCs ought to be promulgated, rather than having clinicians set standards locally (only). This also includes the need for ethical guidance in establishing CSCs (fundamental norms, ethical planning processes).	20	6-25
Triage	Triage refers to the idea of sorting patients into groups by some set of criteria to determine priority for care. Ethical issues include the justification for triage, procedural justice issues, and repeatedly triaging patients, potentially leading to the withdrawal of interventions.	19	5,8,10,11,14,15,18-21,26-34
International issues	These are ethical issues arising in international contexts, including issues about relative moral norms.	17	11,16-19,21,22,26,27,31,35-41,
Duty to care	The duty to care asserts clinicians to have a special responsibility to provide care in crisis circumstances by virtue of their position and training, benefits they have received previously, and professional norms. The duty to care may conflict with (and potentially be limited by) duty to oneself or family, as well as obligations to provide only the highest quality of care.	11	5,9,10,12,13,26-28,36,41,42
Duty to plan	The duty to plan argues that government officials and hospital leaders have an obligation to plan for catastrophic response, as investments in training and resources may be needed to minimize adverse events. Moreover, setting ethical guidelines for CSCs and allocation of scarce resources during an event may be very challenging.	8	5,14,15,20,29,37,39,40
Utilitarianism	Utilitarianism is a consequentialist philosophy that asserts that an action is correct if it maximizes the benefit to the most people possible. It is often used to justify disaster response when the stated goal is to save as many lives as possible.	5	8,22,28,31,34
Moral distress	Moral distress happens when an individual experiences conflict between what they feel is ethically appropriate and what they are being requested or required to do.	4	11,19,26,31
Allocation criteria	Allocation criteria are the measures, rationale, or means by which resources or access to care are given to individuals, typically to the exclusion of others in crisis situations.	4	6,21,26,31
Equity	Where equality refers to treating individuals the same, equity is a normative concept referring to treating equally situated individuals the same. Among individuals that are not equally situated, this implies a fair means of addressing procedural or distributive conflicts.	4	15,17,29,40
Professional norms	Clinicians and other professionals may belong to societies that have stated positions on standards of care, as well as other obligations of the clinician.	3	9,28,32
Reciprocity	Issues of reciprocity relate to the idea that, just as clinicians have a duty to care, society may have obligations to clinicians during disasters. This may include priority access to scarce resources, liability protection, a duty to plan, and more.	2	16,41

Continued

TABLE 1—*Continued*

Ethical Concept	Description	Count	Citations
Research ethics	Research ethics are ethical issues arising in the context of research during disaster planning and response.	2	21,36
Duty to steward resources	Duty to steward resources refers to the obligation of governments and private actors to use resources efficiently in the context of disaster response, to maximize the number of patients that can benefit.	2	6,9
Social utility	Social utility includes notions of instrumental value of a patient to society during disaster response (such as key workers) as well as social worth of a patient more broadly.	2	6,9
Quarantine and isolation	These are ethical considerations with quarantining and isolating patients during disaster response. They are frequently concerned with limiting individual liberty, but ethical considerations may extend to CSCs and quarantine or isolation, including safety and practicality considerations.	2	16, 36

Note. CSC = crisis standards of care. Not shown are the 20 issues with 1 mention each captured in the course of the systematic review. These include respect for autonomy, consistency, public engagement, egalitarianism, relative moral standards, withdrawal versus withholding, transparency, duty to be competent, nonmaleficence, recovery, palliative care, evacuation, duty to remain safe, family involvement, beneficence, implementation issues, proportionality, population-based principles, accountability, and justice.

staffing ratios, allocation of scarce resources, and choices to not employ extremely scarce resources that are staff-intensive (e.g., extracorporeal membrane oxygenation or potentially some forms of mechanical ventilation).[20] All of these measures have ethical implications and so are appropriately addressed in an ethics framework for CSCs. The IOM notes that CSC plans should identify conditions that trigger the enactment of CSCs. Scholars are less concerned by that triggering process than what comes next—the ethical issues related to clinicians' shift to a different mindset.[9]

How can clinicians "adhere to ethical and professional norms in crisis standards of care"[9(p51)] under such circumstances—especially in conditions in which they themselves may be put at risk (such as an influenza pandemic)?[14] Hodge et al. noted the challenge of moving from abstract principles to practicable norms. Concrete plans have been proposed, including, in larger systems, specialized positions that may be created to make triage and allocation decisions, to allow clinicians at the bedside to continue to focus on the health of the patient in front of them.[9] However, some scholars and responders have noted that this may be impractical in truly resource-constrained (or overwhelmed) settings, and clinicians must be prepared to make triage and related decisions during the course of a disaster.[43]

Duty to care. A duty to care, as well as a duty to be competent, is oft-discussed in the CSC literature, and has been for some time in disaster ethics more broadly.[44] Such arguments advance the notion that health care workers have a special moral obligation to provide care to their patients—sometimes interpreted as duty to provide the best care possible.[4] There is some debate over the extent to which such duties conflict with CSCs. For example, Wagner and Dahnke cite the American Nursing Association's Code of Ethics as a primary normative force grounding the duty to care.[28] The code explicitly calls for a nurse to promote, advocate, and strive to protect the health, safety, and rights of the patient. How can a nurse do this during a disaster triage situation, Wagner and Dahnke ask.[28] They argue that the overriding goal of disaster response—which they identify as to save as many as possible—justifies a change in how the duty to care should be conceptualized. However, this may be a significant source of moral distress for nurses and other clinicians.[26] This is especially the case in international disaster situations.

Triage as a fundamental component of crisis standards of care: learning from international experience. Although public health preparedness efforts have paid increasing attention to CSCs in recent years, CSC plans have rarely been implemented within the United States to date, although some components are common (e.g., triage is used in US emergency departments regularly).[4] Although many health systems in the United States lack surge capacity, few, if any, events in recent years have triggered CSCs in any meaningful way.[19] Conversely, countries outside the United States more commonly implement CSCs within a natural disaster or humanitarian crisis response. Examples include the 2004 Indian Ocean tsunami, the 2010 Haiti earthquake, and the 2014 to 2016 Ebola response—all cases in which MCEs either destroyed infrastructure needed for response or occurred in the context of a preexisting lack of basic infrastructure.[11,35,36] Authors who participated in the response to these events uniformly highlighted significant moral distress and a lack of ethical guidance for both allocation of scarce resources and CSCs—noting that these issues tended to travel together.[20,26–28,31,38]

Triage prioritizes patients for care on the basis of some set of criteria, typically grounded

in medical prognosis. It is the fundamental process by which emergency departments in the United States and elsewhere control patient flow, and plays an important role in disaster response domestically.[5,7,33,34] However, triage is even more of an issue during international relief efforts, confronting extreme scarcity of resources. Triage will typically exclude those who are "too far gone," as well as those who do not need substantive medical attention imminently. However, there is significant disagreement about the importance of prioritizing those needing medical care before deterioration is too significant. Some scholars argue that, among those who can be helped, prioritizing the worst off is the most appropriate, as others could potentially be treated later. However, some analysts criticize the amount of resources needed, and a recent simulation study suggests that fewer individuals can be saved under this approach—especially if resource constraints are extreme.[30]

Scholars often contend that consequentialist justifications, especially utilitarianism, provide the normative foundation for disaster response; on this view, the fundamental ethical concern is to save the most lives possible. However, additional considerations have been discussed that may moderate that maxim, including justice, duty to care, reciprocity, nonmaleficence, respect for autonomy, and others, including social utility.[8-10,13,28,33,34] Some scholars argue that a purely consequentialist viewpoint could lead to substantive unfairness or injustice. In humanitarian settings globally, the appropriate approach to triage raises exceptionally difficult ethical and operational dilemmas.[11,31] A number of field reports captured in this systematic review relay significant moral distress in operating under severe austerity.[28] Authors mention the scope of human suffering and need, the extreme lack of resources, the lack of staffing, local customs or norms, and lack of local infrastructure to support the recovery of complex patients. In addition, authors have noted that standard triage guidelines only go so far, as response workers may find themselves in situations with many equally positioned patients in need of the same resource.[41]

Triage is a central issue in humanitarian CSCs, as is the notion of "repeat triage."[31] In circumstances in which triage calls for the sorting of cases by some set of criteria, repeat triage is the idea that health professionals (and patients) may be asked to continually reassess the clinical and resource situations in disaster situations. This may (and has) led to the reallocation of clinical interventions.[31] The idea of "withdrawal" of an intervention to give the resource to someone else is largely a foreign idea in the United States outside disaster preparedness circles, but is more common in international disaster relief.[31] It is, however, central to many academic and practice-based discussions of CSCs, especially in the ethics literature.[27] Ethical justifications and qualifications for the appropriate use of withdrawal of care are increasingly common.[31]

Controversies Concerning Fundamental Approach

There is a variety of principles that scholars and practitioners advocate using in disaster scenarios. However, relatively little disagreement was observed in the literature with the fundamental approach to CSCs, with 1 exception.

Schultz and Annas argue that altering standards of care for disaster situations is unnecessary and dangerous.[10] They trace the conceptualization of CSCs to concerns about liability protection for providers during MCEs. However, they note they could find no cases in which practitioners participating in good faith in disaster responses were sued. Schultz and Annas reason as follows:

> The standard of care determines whether the actions of health care providers are appropriate. It does not specify which actions a practitioner should take. Simply put, an individual's action is acceptable if it is the same action that a reasonable and prudent physician would take under the same or similar circumstances. If the circumstances change, the actions would change. Therefore, the current standard applies in all situations.[23(p669)]

Elsewhere they conclude that the discussion about CSCs thus implies that "disaster victims are not entitled to receive reasonable medical care."[10(p194)]

Hanfling et al. reply that CSC does not decrease clinician accountability, but instead offers concrete guidance for system-wide response to a disaster.[23] Moreover, they argue, such an approach explicitly affords protection to those concerned with the issue. Schultz and Annas counter that the CSC protocols that Hanfling et al. advocate promote compliance with exemplary standards of care in MCEs. They thus cannot qualify as altered or crisis standards of care, which on Schultz and Annas' view amount to lowered standards of care.[10] Koenig maintains that CSCs do not lower the standard of care but rather change the goal of care. She agrees with Schultz and Annas's characterization of the notion of standard of care, but denies that CSCs amount to altered standards.[24]

DISCUSSION

Scarce resource allocation is unavoidable in catastrophic conditions. The primary question is not whether—but how—it should occur. Internationally, there have been dozens of humanitarian crises and natural disasters in the past decades that have demanded responding clinicians and others ration access and care.[4,45] Responders work in a sea of need, where they must decide how best to provide care. Domestically, scholars, practitioners, and policymakers have recognized that catastrophic situations can and do arise—sometimes quite readily.[20] The United States sees numerous natural disasters a year—many of which could turn catastrophic.[45] The threat of terrorism or bioterrorism continues to loom large.[46] And history suggests that pandemics are all but certain in the future.[25]

How, then, do experts suggest we as a society prepare? Interwoven with the idea that resources may need to be rationed is the notion that CSCs may be needed. In our view, governments at the federal, state, and local levels have a duty to plan for a disaster in cooperation with health systems, sovereign entities (e.g., Native American tribes), and relevant community organizations. Failure to plan undermines the duty to provide the best care possible under the circumstances. Fulfilling a duty to plan demands standards like those called for in

CSC frameworks offered by the HMD/IOM and others, as circumstances may well arise that require practitioners to work in severely resource-constrained circumstances.

We agree with Schultz and Annas that the legal standard of care does not change with the onset of an MCE; the question of "what [action] a reasonable and prudent physician would take" continues to define the standard even as circumstances change.[23(p670)] Indeed, we contend that this legal standard also reflects an ethical expectation about providing appropriate care. However, we also agree with Hick et al. as well as Koenig, that the dramatic change in circumstances associated with MCEs require careful planning so responders are positioned to meet the legal and ethical standard of care.[20,23,24] That is, we maintain that planning for CSCs is required to position responders to meet their legal and ethical obligations to provide the best care possible in the circumstances. Such planning requires direct and thoughtful engagement with the ethical issues associated with CSCs; the HMD/IOM rightly portrays an ethical framework as the bedrock of CSC plans. Additional research into the frequency of uptake of ethical guidance in CSC plans is appropriate. In addition, further ethics scholarship is needed to address the ethical controversies identified in this review.

Incorporating Ethical Considerations

On the basis of a review of the academic literature, we propose a brief list of considerations of central relevance to ethical guidance within broader CSC plans (see the box on this page). The HMD/IOM offers important guidance about frameworks for overall CSC plans; we focus on ethical issues, rather than the recommended components for CSC plans overall. The HMD/IOM recognizes the need to acknowledge the ethical norms that justify and guide CSCs, although it is noteworthy that different states embrace somewhat different norms in their basic ethics frameworks.[47–50]

We advise that ethical analyses also relate to implementation issues such as utilizing triage plans, offering liability protection, public engagement, and modification of plans according to the disaster at hand. Public engagement around the moral norms used in disaster planning is both critical and still too uncommon.[51] In addition, all too often, ethical guidance identifies high-level norms to guide emergency response, and fails to analyze the practical implications of those ethical norms for public health and health care practitioners. We recommend that ethical frameworks directly engage with these issues to shed light on the moral significance of these aspects of planning as well.

Limitations

Some limitations of this review should be noted. Unlike quantitative systematic reviews, standardized approaches to bias risk assessment were largely not applicable. As such, assessment of the quality of items included in the review fell to the researchers. Strict requirements to identify substantive (rather than superficial) ethical discussion and guidance served as the primary quality assessment measure.

ISSUES THAT NEED TO BE ADDRESSED IN ETHICAL FRAMEWORKS OR GUIDANCE FOR CRISIS STANDARDS OF CARE

State underlying justifications and norms for crisis standards of care.
- Include commitments to achieve highest standard of care within contextual constraints and duty to plan.
- Identify ethical process for planning and response, including considerations of transparency, public engagement, and communicating information to the public.
- Establish fundamental norms governing the establishment and implementation of CSCs (e.g., overarching mission, goals, values). This includes not only the role of utilitarianism but also the importance of fairness and equity, which relate, in part, to protection of vulnerable populations, addressing access barriers, and expectations about culturally sensitive planning and response.

Consider both broad and specific ethical issues by scenario: different types of MCE (e.g., sudden impact vs extended impact, terrorism vs naturally developing infectious threats) raise distinctive ethical issues that must be addressed.

Establish expectations of duty to care and reciprocity.
- Clarify duty to care and corresponding duties to caregivers, including obligations to patients, as well as ethical significance of types of care covered by CSC plans (e.g., mental health care and palliative care, respectful handling of dead bodies).
- Clarify obligations to caregivers, which may encompass reciprocity, moral distress interventions or support, and ethically appropriate liability protections.

Select criteria to use in resource allocation priority setting.
- Establish norms governing triage or stewardship of resources, including which criteria to use or not to use for resource allocation. These might include, for example, social worth, age, and first-come, first-served.
- Create appropriate processes by which to employ triage, expectations concerning repeated triage, and consideration of due process for triage, such as reviews and appeals.

Integrate ethical and technical considerations in CSC plans.
- Ethical considerations involved in technical components of CSC, such as scope of work, ratios, and shutting down intensive interventions, also provide guidance about ethically appropriate stewardship of resources.
- Address ethical considerations for liberty-limiting considerations such as isolation, quarantine, and other social distancing methods.

Note. CSC = crisis standards of care; MCE = mass casualty event.

The review is also limited as articles may be present that were not picked up with the keywords or citation mapping approaches employed; this may especially be the case if different language was used to describe altering standards of care during crisis response. This potential issue is why we left the keyword search quite broad, and we left winnowing down to appropriate articles to the abstract and full review.

Public Health Implications

A significant evolution in disaster planning has occurred within the past decade; ethical theories and frameworks have been put to work. For ethical guidance to be useful, it must be practical and implementable. Although high-level, abstract frameworks were once prevalent in disaster planning—especially in the early days of pandemic planning—concerns about the ethically difficult concept of crisis standards of care pervade scholarly articles. Ethical norms must be clearly stated and justified and practical guidelines ought to follow from them. Ethical frameworks should guide clinical protocols, but this requires that ethical analysis clarifies what strategies to use to honor ethical commitments and achieve ethical objectives. Such implementation issues must be considered well ahead of a disaster.

As the Task Force for Mass Critical Care noted in its influential 2014 consensus paper, public and private entities have a duty to plan, and "[f]ailure to do so places the front-line worker in the untenable position of making weighty, life-altering decisions without the opportunity to consult others or fully consider the ethical consequences of various decisions."[5(pE1475)] This has troubling ramifications for the clinician, patient, and society more broadly. As governments and health care systems plan for MCEs, ethical guidance that is theoretically sound and practically useful can—and should—form an important foundation from which to build practical guidance for responding to disasters with morally appropriate means. AJPH

CONTRIBUTORS

J. P. Leider and D. DeBruin originated the article. J. P. Leider and N. Reynolds conducted data collection and analysis. J. P. Leider, D. DeBruin, and N. Reynolds created a first draft of the article. All authors provided critical review and approval of the final article.

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HUMAN PARTICIPANT PROTECTION

Human participant protection was not required because no human participant information was used.

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