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ETHICAL GUIDELINES FOR THE TREATMENT OF PATIENTS WITH SUSPECTED OR CONFIRMED NOVEL CORONAVIRUS DISEASE (COVID-19)

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ABSTRACT

This white paper provides basic ethical guidelines for treating patients with suspected or confirmed coronavirus disease (COVID-19). It responds to the need from healthcare organizations to address the moral considerations inherent to caring for this patient population, particularly in the context of scarce resource allocation, the imposition of limits to individual freedoms, and *de facto* social distancing. These guidelines are not narrowly prescriptive, but recognize the need of decision makers to transform this guidance into specific decisions. Ethical decision making assumes that such judgments will be based on current scientific knowledge, that effectiveness of interventions is carefully assessed, and that transparency of the process is evident. As specific decisions are considered, processes should be in place for identifying which ethical issues were addressed, how guidelines were used, how decisions affected the community, and what lessons can be shared with other decision makers. In this way, these guidelines will continue to be an interactive, working document.

Keywords: COVID-19; Ethical Guidelines; Crisis Standards of Care; Public Health Emergency; Scarce Resource Allocation; Disaster Bioethics

1. BACKGROUND AND OBJECTIVES

1.1 The Role of Ethics in Pandemic Planning

One characteristic of public health crises is that health needs overwhelm available human and material resources. Difficult decisions must be made about how, where, and to whom resources should be allocated. Medical science provides valuable information to help make these decisions, but science alone is insufficient. As some scholars have pointed out, pandemic planning needs to take ethical considerations seriously, and not allow the urgency of logistical and scientific needs to sideline a discussion of ethical considerations.[1-3] It is important to make these presuppositions explicit because the costs of not addressing the ethical concerns are severe: loss of public trust, low hospital staff morale, confusion about roles and responsibilities, stigmatization of vulnerable communities, and misinformation.[4]

Another key insight that we overlook at our peril is that, in times of crisis, where guidance is incomplete, consequences uncertain, and information constantly changing -- where hour-by-hour decisions involve life and death -- fairness is more important, rather than less.[5] As this paper suggests, fairness considerations are both procedurally and

substantively important: there is a need for fair decision-making processes, as well as equitable distributions of scarce human and material resources. Take, for example, the triaging of ventilated beds in an intensive care unit (ICU). In theory, decision makers rely on scientific evidence to determine how best to maximize benefit in the allocation of ventilated beds, but science cannot tell us whether the initial decision to maximize benefit is just. Insofar as maximizing benefit is derived from a reflection on values, ethical analysis is required to determine why a utilitarian approach to triage though maximization of benefit is preferable to the assignment of ventilated beds on a different basis -- for instance, that of greatest need.[1]

The importance of ethics to pandemic planning is in the application of value judgements to science, especially as they are embedded in planning assumptions, and within the practice of medicine itself. While ethics might have little to contribute to understanding the mechanism of COVID-19 transmission, it can make a significant contribution to debates such as what levels of harm the public are prepared to accept, how the burdens of negative outcomes should be distributed across the population, and whether more resources should be invested in stockpiling a certain preventative measure. The use of ethical frameworks to guide decision making may help to mitigate some of the unintended and unavoidable collateral damage from a local COVID-19 outbreak. As Jaro Kotalik argues, the incorporation of ethics into pandemic plans can help to make them instruments for building mutual trust and solidarity at such time that will likely present a major challenge to our societies.[2] Using ethical frameworks to help guide decisions can offer greater assurance that the values instantiated within them -- such as accountability, transparency and trust -- will be carefully thought about in decision making and when reviewing decisions with stakeholders.

The ethics literature on bioterrorism and battlefield triage informs our thinking here, and calls our attention to important issues such as the duty to care, reciprocity, equity, and good stewardship.[6-11] The importance of having ethically robust criteria and policies developed in advance of a pandemic COVID-19 outbreak is underscored in this literature,[12-16] which makes clear that critical decisions like these should not be made on an individual, case-by-case basis, and that clinicians should never be placed in a position of individually deciding to deny treatment to patients without the guidance of policy or protocol.[8] Robust disaster preparedness requires practicing preventive ethics.[4]

1.2 Objectives

Preparing for and responding to COVID-19 raises numerous ethical issues: Who should receive priority for limited resources? How should decisions be made that would limit civil liberties? How and when should information be provided to the public? How should the needs of vulnerable populations be addressed?[17] What standards of care would be expected when staff, equipment, and medications are insufficient to meet the demand and to provide the level of medical care that is expected during non-emergency times?

What guidance could be made available to clinicians to assist them in making fair and responsible decisions under these circumstances?[18]

Exploring the foundations of such issues and proposing general methodological guidelines is the objective of this paper. Its rationale is based on the attention given to altered standards of care (ASC) in 2004, when the Massachusetts Statewide Surge Committee, under the supervision of the Massachusetts Department of Public Health (MPDH), engaged in pandemic influenza planning. In January 2006, MDPH and the Harvard School of Public Health Center for Public Health Preparedness (HSPH-CPHP) worked together to make recommendations to the Commonwealth on the major ethical, legal, and practical issues regarding ASC during influenza pandemic. To ensure equity and consistency and to relieve burdens on individual clinicians, a 20-member Joint Working Group comprised of ethicists, lawyers, clinicians, and local and state public health officials determined that guidelines for decision making must be developed at the state level, as opposed to the local or institutional level. To this end, the group recognized the importance of including a range of key stakeholders in the decision making process and ensuring transparency by making public the process and rationale.[17]

2. GUIDING GOALS AND PRINCIPLES

2.1 Guiding Goals

Donna Levin and colleagues identify four public health goals to inform and direct the allocation of limited resources.[17] Building on their work, the following is recommended for application in the context of COVID-19 outbreak.

1. Control the outbreak to the extent possible by protecting the public from mass infection and resultant morbidity and mortality.
2. Maximize positive patient outcomes when healthcare needs exceed available resources, utilizing a physiological score such as that delineated in the Utah Model (see Appendix A).
3. Establish principles and guidelines to assist clinicians to continue to provide care in an ethical manner during circumstances that make delivery of healthcare services in the normal course difficult, if not impossible.
4. Establish processes directed by Massachusetts Department of Public Health (MDPH) for determining priorities for the use of limited healthcare resources and to establish altered standards of care (ASC) and clinical protocols for clinicians at all levels across healthcare organizations.

2.2 Primary Guiding Principles

To ensure that the foregoing goals are accomplished in an ethical manner, the following seven guiding principles are recommended for application in the context of COVID-19 outbreak.

1. **Limited resources should be allocated so as to maximize the number of lives saved** (determined on the basis of the best medical information, implemented in a manner that provides equitable treatment of any individual or group of individuals based on the best available clinical knowledge and judgment, and implemented **without discrimination or regard to sex, sexual orientation, race, religion, ethnicity, disability, age, income, or insurance status**). Age and/or disability may be considered along with other risk factors in allocating resources to save as many lives as possible, but the importance of saving older adults or people with disabilities is the same as for others. The assessment of risk factors should be made on the basis of the best medical information, clinical knowledge, and clinical judgment. This principle ensures that people are not denied medical care based solely on their age or disability. It does allow for the consideration of risk factors, however, based on the individual's medical condition. This medical condition can be the consequence of the aging process or of a particular disability and could affect the individual's ability to benefit from, withstand, and survive the scarce medical intervention needed by others. This consideration is in conformance with the overarching principle of maximizing the number of lives saved. Note that there is no inclusion of the "fair innings principle" (see 3.10), although similar ethical concepts may be considered and included as the guidelines evolve.
2. ASC **protocols should permit flexibility for physician discretion**, exercised in good faith, under circumstances that warrant exception from the protocols and subject to prior expedited review process. Healthcare organizations should establish capacity for expeditious review of exceptions.
3. Healthcare organizations will be responsible for **developing mutual aid plans** in partnership with regional healthcare institutions to secure a uniform approach to the pandemic.
4. ASC **protocols should recognize any changes in practice necessary to provide care** under conditions of scarce resources or overwhelming demand for care; an expanded scope of practice for clinicians; the use of alternate care sites, such as specialty care units at facilities other than hospitals; and reasonable, practical standards for documentation of delivery of care.
5. Clinicians will be responsible for adhering to the protocols to **protect the public's health.**
6. Patient **care should be provided within the context and limitations necessitated by the public health emergency.**
7. Healthcare organizations should **prioritize the care and protection of its clinicians.**

3. RELEVANT ETHICAL THEORIES AND PRINCIPLES

Several ethical theories and principles bear on the realization of the goals and principles delineated above, and serve to inform clinical practice.

3.1 Utilitarianism

Utilitarianism commonly and popularly means producing the greatest happiness for the greatest number of people. Historically, allocation decisions in public health have been driven by the utilitarian goal of accomplishing the "greatest good for the greatest number." Though utilitarianism can be interpreted many ways, it is difficult to imagine its scope, in the context of a public health crisis, as encompassing more than the narrow consideration of maximizing the numerical amount of persons who will survive to hospital discharge. However widely accepted the utilitarian rule may be during a public health emergency, it cannot stand on its own. Ethically, using only chance of survival to hospital discharge is insufficient because it rests on a thin conception of "accomplishing the greatest good."[19] Though this principle has some strengths -- namely, being aimed at beneficence, and having as its goal the promotion of general welfare -- what it clearly lacks is an understanding of justice. Utilitarianism permits the interests of the majority to override the rights of minorities, and does not have the resources to adequately guard against unjust social distributions.[20]

3.2 Justice

Utilitarian theory, if it is to be exercised licitly in the context of pandemic COVID-19, must be tempered by a proper understanding and practice of justice. Common to all theories of justice is a minimal requirement attributed to Aristotle: Equals must be treated equally, and unequals must be treated unequally. Yet this principle identifies no particular respect in which equals ought to be treated equally and provides no criteria for determining whether two or more individuals are, in fact, equal. This vagueness is, at one and the same time, the theory's virtue and its vice. On the one hand, it leaves the room necessary for an adequate interpretation and judgment of actions, circumstances, and intentions in an ever-changing world. On the other hand, it leaves to the imperfection of human judgment the enormous task of attributing value where it sees reasonably fit. Virtually all accounts of justice in healthcare hold that delivery programs and services designed to assist persons of a certain class, such as the poor, the elderly, or the disabled should be made available to all members of *that class.* To deny benefits to some when others in the same class receive benefits is unjust. But is it also unjust to deny access to equally needy persons outside of the delineated class?[20]

A proper understanding and practice of justice assures that persons be treated fairly, that vulnerable populations are protected, and that each person is treated, to borrow a phrase from the ethical theory of Immanuel Kant, "as an end" in himself/herself. Furthermore, any discussion of the issues under consideration would be incomplete if it did not repeatedly stress that it is the pride of the medical profession that the weak and defenseless, the powerless and unwanted, those whose grasp on the goods of life is fragile -- that is, real but reduced -- are cherished and protected as patients in greatest need.[21] In this sense, justice is at the very heart of medicine's vocation.

3.3 Autonomy

At its core, personal autonomy refers to "self-rule" that is free from interference and control by others and from certain limitations (such as inadequate understanding) that would deprive a person of the ability to make meaningful choices about his/her life. To respect autonomous agents is to acknowledge their right to hold views, to make choices, and to take actions based on their personal values and beliefs. Such respect involves respectful action, not merely respectful attitude. It requires more than noninterference in others' personal affairs. It includes, in some contexts, building up or maintaining others' capacities for autonomous choice while helping to allay fears and other conditions that destroy or disrupt autonomous action.[20]

Much like any rule, autonomy must be contextualized within a concrete set of circumstances. In other words, autonomy has limits. Respect for autonomy does not mean honoring another's preference to do whatever he/she likes, regardless of the nature of the act in itself and its end, the relevant set of circumstances, the intentions of the moral agents involved, and the foreseen consequences.[20] If personal morality comes down to nothing more than the exercise of free choice, with no principle available for moral judgment of the quality of those choices, then we will have, in the words of Daniel Callahan, a "moral vacuum."[22]

In the context of a public health disaster, autonomy is sure to take on a new face. Restrictions on personal liberties are highly likely to ensue. The MDPH properly says that, in enacting any measure in which personal freedom is limited, the least restrictive, effective measure should be taken. Enactment of these measures should be based on the best available scientific evidence that:

1. The liberty-limiting measure will achieve its intended goal.
2. The limitation is proportional and no less restrictive measure is likely to be effective. An exception to this criterion may be justified if the less restrictive measure would be unduly burdensome (e.g., either too expensive or the agency responsible for implementation lacks the resources for expertise to implement).
3. Failure to implement the measure is likely to result in grave harm to the functioning of society or to the well-being of the public. For example, if quarantine is enacted, then the duration of the quarantine should be clearly informed by transmission characteristics and should be as short as is medically justifiable. Home quarantine should be honored when reasonable and desired, and monitoring/surveillance should be as nonintrusive as is reasonable. We should continually be asking what justifies one further restrictive step. Restrictions on personal freedom should be equitably applied. It should be exceedingly clear why particular individuals or communities are being restricted and that the criteria that justify a restriction would be equitably applied to any and all individuals meeting the same criteria. Care must be taken to avoid stigmatization of individuals or groups. In addition, a process for questioning, appealing, and revising liberty-limiting measures should be in place and accessible when the level of urgency during a crisis makes this realistic.[18]

3.4 Human Dignity

The essence of respect for human dignity is that each human being is invaluable. Human dignity makes clear that our incalculable worth as persons is not found in any usefulness granted us by others. We are not merely, in other words, of utilitarian value. As James Childress comments, one's dignity as a person cannot be reduced to his or her past or future contribution to society.[23] We are of worth, that is to say, by virtue of who we are, not as a result of what we do. That worth remains even when it is ignored by others. Every person, then, by virtue of dignity, has a right to respect and to ethical treatment. If justice is at the very heart of medicine's vocation, then a thorough understanding of and respect for human dignity is its impetus and ultimate measure.

3.5 First Come, First Served

"First come, first served" is, of course, the traditional operative rule of clinical ethics. Patients are treated as they present themselves, and treatment continues as long as it is beneficial. This practice honors human dignity, because patients are treated according to their need, not their social worth or standing in any particular group. But can this principle be maintained in public health ethics when medical resources, such as ventilators, run short? Perhaps, but not necessarily. We have a model in the waitlist for organ transplants, where individuals are placed on the list in the order their need is identified. Exceptions to this rule, such as "jumping the queue," have difficulty surviving ethical scrutiny. The CDC gave us another example during the flu vaccine shortage of 2004, when it recommended "first come" for distribution after groups at high risk had been served.

The immediate virtue of "first come" is that it is egalitarian: it is, in effect, a lottery in which everyone has an equal chance. It avoids invidious comparisons among people -- the ethical difficulties of favoring some over others. It is sometimes criticized as giving an unfair advantage to people who are well informed enough to present themselves first, leaving behind vulnerable groups. But if patients are admitted to the hospital by clinicians as they become seriously ill, and to the ICU as their need requires, the egalitarian lottery system works well enough. The incidence of illness is random and, in the sense that it does not favor some over others, fair.

The most serious challenge to this rule or policy will come in the desire to remove certain patients from a full ICU to make room for others who are judged to be in greater medical need or more likely to benefit and/or survive. Should those who have arrived in the ICU by the egalitarian route of first come, first served, be subjected to a screening based on other grounds? We start with the medical screen: if it is judged that the patient cannot benefit from further intensive care, there is likely not an ethical problem in moving him/her to palliative care. But if the patient will benefit, and is nevertheless removed to make room for another with better prospects, this action must endure rigorous ethical justification in advance. (See Appendix A, nos. 3-4).

3.6 Common Good

The common good refers to the social conditions that allow people to reach their full potential and to realize their dignity. The common good implies that individual citizens and intermediate groups are obligated to make their specific contributions to the common welfare. Healthcare organizations are committed to serve the common good of society and should work to protect the well-being of its patients by:

1. Protecting from discriminations those whose ability to pay or whose social condition places them in the margins of society.
2. Enacting standards of care that work to the betterment of patients and service population.
3. Using resource allocation -- including the scarce resource of one's own health -- that does not arbitrarily disadvantage any particular patient group or community.
4. Striving to ensure that burdens are not borne disproportionately by any patient, patient group, or community.
5. Being concerned for the well-being of our clinicians and their family members, along with our patients and local communities.

3.7 The Duty to Provide Care

The duty to provide care is basic to the medical profession, inherent to its very nature. However, it is not an unlimited obligation. For instance, there is no duty to provide nonbeneficial care. In a situation of severe resource constraint, there may be no duty to provide full care for some if that means others will not receive even the most basic care. In other words, when rationing appears, the clinician must divide time and resources in such a way that is less than optimal for any given patient. Furthermore, in the case of COVID-19, we must also consider the problem of exposure to infectious diseases. Clinicians must inevitably consider the risk to their own health and thus the health of their families. This risk, which is accepted as a consequence of a freely-chosen profession, is a chief reason why they should receive priority in the distribution of preventives, such as vaccines. They bear a disproportionate burden in a pandemic in their efforts to protect and serve the public good, and so deserve the best measures available to guard their own health. There must also be sufficient measures in place to protect them legally in the extraordinary circumstances of disaster medicine.

3.8 The Duty to Protect the Public from Harm

A foundational principle of public health ethics is the obligation to protect the public from serious harm. This principle requires that citizens comply with imposed restrictions in order to ensure public wellbeing or safety. To protect the public from harm, Healthcare organizations may be required to restrict public access to service areas (e.g., restricted visiting hours), to limit availability of some services (e.g., elective surgeries), or to impose infectious control practices (e.g.,quarantine). When making decisions designed to protect the public from harm, decision makers should:

1. Weigh the medical and moral imperative for compliance.
2. Ensure stakeholders are made aware of the medical and moral reasons for public health measures.
3. Ensure stakeholders are aware of the benefits of compliance and the consequences of noncompliance.
4. Establish mechanisms to review these decisions as the public health situation changes and to address stakeholders concerns or complaints.[4]

3.9 Community Involvement

Another concern is the need for community involvement and for transparency in the process of moral deliberation. We must work with one another and be inclusive of all populations, without distinction, in the effort to formulate a policy that works best for the society we inhabit together. The involvement of diverse voices in COVID-19 planning and in creating a transparent procedure for decision making is essential. A balance between centralized, federal control and state and local community implementation of central guidelines must be effectively struck. Moreover, healthcare organizations must adequately acknowledge and respond to any suspicion and distrust of the healthcare system. It is clear that public trust will be essential to ensure acceptance of, and compliance with, any necessary restrictive measures. To this end, healthcare organizations should include regional community leaders in the final review and implementation of these ethical guidelines. A procedure that maximizes transparency should include:

1. Ensuring consistency in applying standards across people and time (treating like cases alike).
2. Identifying decision makers who are impartial and neutral.
3. Ensuring that those affected by the decisions have a voice in decision making and agree in advance to the proposed process.
4. Treating those affected with dignity and respect.
5. Ensuring that decisions are adequately reasoned and based on accurate information.
6. Providing communication and processes that are clear, transparent, and without hidden agendas.
7. Ensuring particular attention to historically marginalized and potentially vulnerable groups.
8. Including processes to revise or correct approaches to address new information, including a process for appeals and procedures that are sustainable and enforceable.[18]

3.10 Other Criteria for Assigning Treatment Priority

Some articles in the literature on scarce resource allocation introduce criteria that seem problematic. One is maximizing the years of life saved, not just the number of lives saved, and considering this an expression of the "greater good." It suggests, in other words, that we prioritize those with the greatest number of years ahead of them, which

favors long-term survival prospects and, inevitably, younger persons. Another is the life-cycle, or "fair innings," argument, which suggests that we favor those who have not yet had the opportunity to live through life's stages, which directly favors the young over the old.[19] Still another is favoring those needed for the functioning of society.[18] This would lead to endless argument about which roles are essential, would be hard to determine and apply fairly, would effectively marginalize those whose "social worth" is negligible, and would be counterproductive to public trust.

Even after ethical guidelines have been spelled out, there will remain, of course, plenty of room for physician judgment and discretion, often very difficult and painful, in individual cases. A needed flexibility is required here, but it should be exercised within the policy guidelines insofar as it is possible. Ad hoc departures from the algorithm are ethically and legally unwise.[24] It will also be prudent for triage decisions to be made and documented by a highly trained small group, rather than by an individual physician, because of the exceptional moral burden involved, entailing foreseeable adverse consequences for particular patients. We all recognize the pandemic as an exceptional situation that challenges our normal ethical wisdom and requires our best sensitivity and care for patients.

4. RELEVANT ETHICAL VALUES

Several ethical values bear on the realization of the theories and principles delineated above, and serve to inform clinical practice.

4.1 Inclusiveness

Decisions should be made explicitly with stakeholder views in mind and there should be opportunities for stakeholders to be engaged in the decision-making process. For example, decision-making related to staff deployment should include the input of affected staff.[4,25]

4.2 Openness and Transparency

Decisions should be publicly defensible. This means that the process by which decisions were made will be open to scrutiny and the basis upon which decisions are made should be publicly accessible to affected stakeholders. For example, there should be a communication plan developed in advance to ensure that information can be effectively disseminated to affected stakeholders and that stakeholders know where to go for needed information.[4,25]

4.3 Reasonableness

Decisions should be based on reasons (i.e., evidence, principles, values) that stakeholders can agree are relevant to meeting health needs in a pandemic COVID-19 crisis, and they should be made by people who are credible and accountable. For example, triage decision makers should provide a templated rationale for prioritizing

particular groups for medication and for limiting access to elective surgeries and other services.[4,25]

4.4 Responsiveness

There should be opportunities to revisit and revise decisions as new information emerges throughout the crisis as well as mechanisms to address disputes and complaints. For example, if elective surgeries are cancelled or postponed, there should be a formal mechanism for stakeholders to voice any concerns they may have with the decision.[4,25]

4.5 Equity

The principle of equity holds that, all things being equal, all patients have an equal claim to receive needed healthcare. During a COVID-19 pandemic, however, tough decisions should need to be made about which health services to maintain and which to defer due to extraordinary circumstances. Measures taken to contain the spread of a deadly disease will inevitably cause considerable collateral damage. In a COVID-19 pandemic, this will extend beyond the cessation of elective surgeries and may limit the provision of emergent or necessary services, such as aggressive treatments for chronic obstructive pulmonary disease, heart failure, and end stage renal disease. At the same time, healthcare organizations are committed to ensuring that non-COVID-19 patients with readily treatable acute problems receive care. Decision makers should strive to:

1. Preserve as much equity as possible between the interests of infected patients and those who need urgent treatment for other diseases.
2. Ensure procedural fairness in decision-making.[4]

4.6 Privacy

Individuals have a right to privacy in healthcare. In a public health crisis, it may be necessary to override this right to protect the public from serious harm. A proportionate response to the need for private information requires that it be released only if there are no less intrusive means to protect public health. Decision makers should:

1. Disclose only private information that is relevant to achieve legitimate and necessary public health goals.
2. Release private information only if there are no less intrusive means to protect public health.
3. Determine whether the good that is intended is significant enough to justify the potential harm that can come from suspending privacy rights (e.g., the harm from stigmatization of individuals or particular communities).
4. Provide public education to correct misconceptions about disease transmission and to offset misattribution of blame to particular communities.[4]

4.7 Proportionality

Proportionality requires that restrictions to individual liberty and measures taken to protect the public from harm will not exceed what is necessary to address the actual level of risk to, or critical need of, the community. Decision makers should:

1. Use the least restrictive or coercive measures in limiting or restricting liberties or entitlements.
2. Use more coercive measures only in circumstances where less restrictive measures have failed to achieve appropriate public health ends.[4]

4.8 Reciprocity

Reciprocity requires that society supports those who face a disproportionate burden in protecting the public good and takes steps to minimize the impact as far as possible. In pandemic COVID-19, measures to protect the public good are likely to impose a disproportionate burden on healthcare workers, patients, and their families. Clinicians may face expanded duties, increased workplace risks, physical and emotional stress, isolation from peers and family, and in some cases, infection leading to hospitalization or even death. Similarly, quarantined individuals or families of ill patients may experience significant social, economic, and emotional burdens. Decision makers are responsible for:

1. Easing the burdens of healthcare workers, patients, and patient's families in their hospitals and in coordination with other healthcare organizations.
2. Ensuring the safety of their workers, especially when redeploying staff in areas beyond the usual scope of practice.[4]

4.9 Solidarity

COVID-19 has heightened the global awareness of the interdependence of health systems and the need for solidarity across systemic and institutional boundaries in stemming a serious contagious disease. Pandemic COVID-19 will not only require global solidarity, but also a vision of solidarity within and between healthcare institutions. Solidarity requires:

1. Good, open, and honest communication.
2. Open collaboration, in a spirit of common purpose, within and between healthcare institutions.
3. Sharing public health information.
4. Coordinating healthcare delivery, transfer of patients, and deployment of human and material resources.[4]

4.10 Stewardship

In our society, both institutions and individuals will be entrusted with governance over scarce resources, such as vaccines, antivirals, ventilators, hospital beds, and even healthcare workers. During a COVID-19 outbreak, difficult decisions about how to

allocate material and human resources will have to be made, and there will be collateral damage as a result of these allocation decisions. Those entrusted with governance roles should be guided by the notion of stewardship. Inherent in stewardship are the notions of trust, ethical behavior, and good decision making. Decision makers have a responsibility to:

1. Avoid and/or reduce collateral damage that may result from resource allocation decisions.
2. Maximize benefits when allocating resources.
3. Protect and develop resources where possible.
4. Consider good outcomes (i.e., benefits to the public good) and equity (i.e., fair distribution of benefits and burdens).[4]

4.11 Trust

Trust is an essential component in the relationships between clinician and patient, between staff and the organization, between the public and healthcare providers, and between organizations within a health system. In a public health crisis, stakeholders may perceive public health measures as a betrayal of trust (e.g., when access to needed care is denied) or as abandonment at a time of greatest need. Decision makers will be confronted with the challenge of maintaining stakeholders' trust while at the same time stemming a COVID-19 pandemic through various control measures. It takes time to build trust. Decision makers should:

1. Take steps to build trust with stakeholders before the crisis hits locally.
2. Ensure decision making processes are ethical and transparent to those affected stakeholders.[4]

CONCLUSION

This white paper provides a basic framework of ethical considerations to guide decision makers at all levels in preparing for and responding to COVID-19, with specified attention to scarce resource allocation. As such, these guidelines are not narrowly prescriptive, but recognize the need of decision makers to transform this guidance into specific decisions. Ethical decision making assumes that such judgments will be based on current scientific knowledge, that effectiveness of interventions is carefully assessed, and that transparency of the process is evident. As specific decisions are considered, processes should be in place for identifying which ethical issues were addressed, how guidelines were used, how decisions affected the community, and what lessons can be shared with other decision makers. In this way, these guidelines will continue to be an interactive, working document.

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APPENDIX A: ADDRESSING SPECIFIC ETHICAL QUESTIONS THAT MAY ARISE IN CLINICAL PRACTICE

1. ***What is the Utah Model referenced in Section 1? What role should it play for ethical decision making in the context of COVID-19?***

The guidance in the Utah Model gives priority to patients for whom treatment would most likely be lifesaving and whose functional outcome would most likely improve with treatment. This priority is given over those who would likely die even with treatment and those who would likely survive without treatment. It utilizes a list of specific diseases and conditions that would exclude patients from admission to a hospital based on the reduced survivability of their disease or condition as well as the disproportionate amount of healthcare services and resources necessary to care for them. Care for these patients would be palliative versus curative. The model utilizes a similar set of criteria to evaluate patient admission to an ICU**. The disease/condition criteria should be used by an independent, peer-based, scarce resource allocation triage team of senior clinicians and organizational leaders with experience in tertiary triage (e.g., Critical Care, Emergency Medicine, Trauma Surgery, etc.), clinical ethics, palliative care, nursing, spiritual services, risk management, etc., with one designated as Chair who oversees all oversight processes.** This triage team provides ongoing evaluation of patients for hospital admission, intensive care admission, and termination of life-sustaining treatment.

2. ***What is the independent, peer-based, scarce resource allocation triage team based on? How should healthcare organizations use it to formulate its allocation decisions?***

There are several models that support independence from the case in making scarce resource allocation decisions, but **the model developed by the New York State Task Force on Life and Law**, which is recommended by the Massachusetts Hospital Association, seems especially strong. In the New York model, the creation of a scarce resource allocation committee that is completely separate from the treating clinician **allows the decision about who receives a scarce resource to be based on a review of objective data. By removing the decision entirely from the treating clinician, severe emotional distress may be mitigated.**

Understandably, clinicians will, in general, attempt to interpret priority rules in a way that favors the access of their own patients to scarce life-sustaining therapies, such as organ transplants and placement in the ICU for ventilator therapy. **It is very helpful, in the interest of fair distribution of such therapies, to have well-formulated prioritization guidelines that are interpreted (in particular cases) by professionals who have no fiduciary commitment to the individual patient.**

Separating the roles of clinical care and triage allows clinicians who are caring for patients with respiratory failure secondary to COVID-19 infection to continue to maintain

loyalty to their patients and to act in their best interests. **This separation of roles will mean that treating clinicians will not need to make a decision to withhold mechanical ventilation from patients who still desire it.** Instead, a scarce resource allocation committee will make decisions impartially based on the overall outcomes for the population according to predetermined guidelines, while the treating clinician is free to act in the best interests of the individual patient, within the constraints of the public health emergency. Constant communication with the treating clinician and establishment of prioritization of patients to receive a critical resource is necessary in the event that scarce resources become available.

3. Should clinicians receive priority for scarce resource allocation?

There are long-standing ethical justifications for prioritizing the distribution of scarce resources to clinicians on the front lines, who serve as the very basis for our ability to provide care for the larger patient population. Without able clinicians, healthcare organizations are unable to provide needed healthcare to the general population. For that reason, grounded in the principle of utility, clinicians on the front lines should be prioritized in scarce resource allocation protocols.

4. What is the role of ECMO in COVID-19 preparedness? How should healthcare organizations decide who will receive ECMO?

The role of ECMO in the management of COVID-19 is unclear at this point. It has been used in some patients with COVID-19 in China, but detailed information is unavailable. ECMO may have a role in the management of some patients with COVID-19 who have refractory hypoxemic respiratory failure. However, much about the virus is unknown, including the natural history, incidence of late complications, viral persistence, or the prognoses in different subsets of patients. This uncertainty might be compared to the emergence of influenza A (H1N1) in 2009, when it was initially unclear what the role of ECMO should be.

That being said, **healthcare organizations should follow their policy on ECMO procedures to determine the candidacy of the patient** with COVID-19 for ECMO therapy by employing a national, peer-reviewed scoring standard.

5. What should healthcare organizations do if multiple patients have similar ECMO scores? In other words, who will receive ECMO therapy in the event that not all can?

This should be determined after careful and critical analysis by a team of relevant experts (see 1A above). To aid in the process of these determinations, **supplemental metrics (i.e., scoring systems) should be introduced** that take into consideration the following.

- **Likelihood of** long-term net clinical **benefit**.
- Quality-adjusted **life years** (QALY).

- **Urgency** of need.
- **Duration** of benefit.
- Long-term **quality of life.**
- **Availability of resources** required to secure long-term benefit.

6. How should healthcare organizations distribute scarce resources other than ventilators, oscillators, and ECMO in the context of COVID-19?

Heeding the advice of the American Medical Association Code of Ethics, decisions regarding the allocation of limited medical resources among patients, healthcare organizations should consider only ethically appropriate criteria relating to medical need. These criteria include, but are not limited to, likelihood of benefit, urgency of need, change in quality of life, duration of benefit, and, in some cases, the amount of resources required for successful treatment.

In general, only very substantial differences among patients are ethically relevant; the greater the disparities, the more justified the use of these criteria becomes. In making quality of life judgments, patients should first be prioritized so that death or extremely poor outcomes are avoided; then, patients should be prioritized according to change in quality of life, but only when there are very substantial differences among patients.

Non-medical criteria, such as ability to pay, social worth, patient contribution to illness, or past use of resources should not be considered. Allocation decisions should respect the individuality of patients and the particulars of individual cases as much as possible. When very substantial differences do not exist among potential recipients of treatment on the basis of the appropriate criteria defined above, a "first come, first served" approach or some other equal opportunity mechanism should be employed to make final allocation decisions.

Though there are several ethically acceptable strategies for implementing these criteria, no single strategy is ethically mandated. Acceptable approaches include a three-tiered system, a minimal threshold approach, and a weighted formula. **Decision-making mechanisms should be objective, flexible, and consistent to ensure that all patients are treated equally. Treating clinicians must remain patient advocates, and therefore should not make allocation decisions.**

Patients denied access to resources have the right to be informed of the reasoning behind the decision.

Patients who are currently receiving life-sustaining medical treatments, such as mechanical ventilation, that are conferring net clinical benefit should not necessarily see an adjustment in their care. However, patients or surrogates who freely and with full consent initiate a conversation with the healthcare team about their desire to limit or withdraw life-sustaining medical treatment so that it can be allocated elsewhere should have this wish considered and, where appropriate, honored. Advance directive

documents should be evaluated and acknowledged by the healthcare team for the patient affected by severe chronic illnesses.

7. ***How should healthcare organizations treat non-COVID-19 patients who need, but are not yet receiving, life-sustaining medical treatments, such as mechanical ventilation?***

Upon initiation of scarce resource allocation protocol, all decisions regarding life-sustaining medical treatment, such as mechanical ventilation, **should be subject to the clinical scoring system, such as that delineated in the Utah Model. This should be applied unilaterally to all patients, regardless of COVID-19 status.**

8. ***How should healthcare organizations treat COVID-19 and non-COVID-19 patients who are not, for whatever reason, candidates for life-sustaining medical treatments, such as mechanical ventilation?***

Patients who are not, for whatever reason, **candidates for life-sustaining treatment**, such as mechanical ventilation, **should receive respectful and compassionate palliative care to relieve their symptoms.** If conventional palliative interventions fail to relieve symptoms, **adjusted doses of sedatives and analgesics that will cause unconsciousness may become appropriate.** In this case, healthcare organizations should follow the protocol of relevant policies on palliative sedation therapy. Although palliative sedation therapy has strong ethical and legal justification, clinicians are often confused about the distinction between palliative sedation, which is intended to relieve suffering, and active euthanasia, which is intended to cause death. During a public health emergency, such misunderstandings may be particularly prominent. Thus, our emergency-preparedness plan includes training and educational resources for clinicians about palliative sedation, for providing emotional and spiritual support to patients and families, and for addressing medication and staffing shortages.

9. ***How should healthcare organizations communicate triage decisions to patients and families of patients who are not, for whatever reason, candidates for life-sustaining medical treatments, such as mechanical ventilation?***

Healthcare organizations should employ the following guidelines developed by the Center to Advance Palliative Care on COVID-ready communication skills. (Please note that these can be modified by individual clinicians, as necessary.)

Table 1. Covid-Ready Communication Skills (Adapted from the Center to Advance Palliative Care)

What they say	What you say
Why can't my 90 year old grandmother go to the ICU?	***This is an extraordinary time. We are trying to use resources in a way that is fair for everyone.*** Your grandmother's situation

	does not meet the criteria for the ICU today. I wish things were different.
Shouldn't I be in an intensive care unit?	Your situation does not meet criteria for the ICU right now. The hospital is using special rules about the ICU because we are trying to use our resources in a way that is fair for everyone. ***If this were a year ago, we might be making a different decision. This is an extraordinary time.*** I wish I had more resources.
My grandmother needs the ICU! Or she is going to die!	I know this is a scary situation, and I am worried for your grandmother myself. ***This virus is so deadly that even if we could transfer her to the ICU, I am not sure she would make it.*** So we need to be prepared that she could die. We will do everything we can for her.
Are you just discriminating against her because she is old?	No. ***We are using guidelines that were developed by people in this community to prepare for an event like this*** -- clinicians, policymakers, and regular people -- ***so that no one is singled out***. These guidelines have been developed over the course of years. I know it is hard to hear this.
You're treating us differently because of the color of our skin.	***I can imagine that you may have had negative experiences in the past with healthcare simply because of who you are.*** That is not fair, and I wish things had been different. The situation today is that our medical resources are stretched so thin that we are using objective guidelines so that we can be fair.
It sounds like you are rationing.	What we are doing is trying to spread out our resources in the best way possible. ***This is a time where I wish we had more for every single person in this hospital.***
You're playing God. You can't do that.	I am sorry. I did not mean to give you that feeling. I am just a clinician doing the best I can. ***Across the country, every hospital is working together to try to use resources in a way that is fair for everyone. I realize that we don't have enough.*** I wish we had more. Please understand that we are all working as hard as possible. Let me connect you with one of our chaplains.
How could you withhold treatment from my child? You are letting my child die!	It is painful for me to say that your child does not meet criteria right now based on his/her life-limiting illness. You have done everything you can to take care of your child. This is a terrible situation, and we are forced to make decisions that are very different from the way we normally practice medicine. We are making these hard decisions for adult patients and for other children, too. We

	feel this loss with you and are here to support you. I wish I had more options to offer your child.

10. Who should communicate healthcare organization's triage decisions to patients and families of patients who are not, for whatever reason, candidates for life-sustaining medical treatments, such as mechanical ventilation?

A member of the Scarce Resource Allocation Triage Team, a Triage Officer, the hospital Chief Medical Officer (CMO), or a combination thereof should communicate triage decisions to patients and families of patients who are not, for whatever reason, candidates for life-sustaining medical treatments, such as mechanical ventilation. (See Appendix B, no. 2.)

11. How should healthcare organizations determine decisions regarding cardiopulmonary resuscitation (CPR)?

Consistent with current policies on non-beneficial and/or harmful treatments, an attending physician is not obligated to offer or to provide CPR if resuscitative treatment would be medically inappropriate, even at the request of a patient or legally authorized representative. For patients with COVID-19, a determination that CPR would be medically inappropriate may be made on the grounds that CPR would not serve a medical purpose because of the patient's prognosis with or without CPR. In addition, for patients infected with COVID-19, the risks to clinicians of performing CPR may influence a determination that CPR is not medically appropriate, if coupled with considerations of that patient's prognosis.

In the event that healthcare organizations implement their Scarce Resource Allocation Protocol, it may also be appropriate not to offer CPR for certain patients with or without COVID-19, on the grounds that if the patient had a cardiac arrest and return of spontaneous circulation were achieved, the patient would not receive a high enough priority for subsequent critical care. When possible, this determination should be made in coordination with the relevant Triage Officer.

If an attending physician, in conjunction with other clinicians involved in a patient's care, determines that CPR is not medically appropriate for any of the above reasons, he or she should solicit the independent review of a second attending physician who is not involved in the patient's care. If the second attending concurs that CPR is medically inappropriate, then a Do Not Resuscitate order should be entered, and the primary attending should document in the electronic health record how the decision was made.

Physicians who decide not to offer CPR should inform the patient or representative of this decision and its rationale, and assure the patient that he or she will continue to receive all other forms of indicated care. The consent of the patient or

representative will be sought, but it is not required. The Scarce Resource Allocation Triage Team should be notified in the event that an objection arises.

12. How should healthcare organizations determine the best use of severely limited equipment, such as personal protective equipment (PPE)? Should clinicians be asked to work without adequate PPE?

Generally, **clinicians have a duty to provide potentially life-saving treatments to patients unless it is impossible to adequately mitigate risk to self or others.** Codes of ethics for all clinicians include a duty to provide care for patients even at some risk to self. This is a primary ethical duty of the healthcare professional, but it is not absolute, and there are ethically justifiable exceptions. Those **exceptions occur when there is disproportionate risk to the clinicians providing the care.**

In considering risks related to providing treatment to a patient with COVID-19 who endures, for instance, cardiopulmonary arrest, we begin with the ethical assumption that patients are entitled to clinically indicated care for which they have provided informed consent. The determination of disproportionate risk must be based on the best available evidence about the treatment of patients with COVID-19. At the time of this writing, the CDC has provided interim guidance for risk assessment of healthcare personnel with potential exposures to patients with COVID-19.

The CDC considers it a medium-risk exposure when clinicians who are wearing appropriate PPE have exposure to procedures that generate aerosols or during which respiratory secretions are likely to be poorly controlled (e.g., CPR, intubation, extubation, bronchoscopy, nebulizer therapy, sputum induction) on patients with COVID-19.

Based on the best available evidence, decision makers should weigh the potential benefit of CPR to the patient with the risk that the treatment poses to the clinicians providing it. **Treatment should only be limited when the risks to clinicians are far greater than the potential benefits that the treatment is expected to offer the patient.** Even in an emergency situation, such as a cardiopulmonary arrest, **clinicians should never compromise safety protocols** because doing so results in more overall harm than benefit given the high risk of infection without PPE. **Clinicians should always don appropriate PPE before performing a code for a patient with COVID-19, even if it means delaying the code.**

The ethical principle of veracity supports informing patients and/or surrogates that in the event of a cardiopulmonary arrest, there may be a delay in responding while the code team or other first-responders don the required PPE. However, **neither patients nor surrogates have the right to request that any clinician administer CPR without PPE as this would expose others to disproportionate risk.**

APPENDIX B: TRIAGE AND SCARCE RESOURCE ALLOCATION QUICK GUIDE

1. Scarce Resource Allocation Triage Initiation

In the event of scarce resource allocation triage initiation , Incident Command personnel should send daily reports on COVID-19 cases to all critical care and emergency department directors. This group should coordinate with the hospital CMO to place patients on relevant units to meet needs for critical care.

If strategies to increase hospital capacity and optimize patient distribution are insufficient to meet the healthcare needs of patients, triage of critical care resources is ethically appropriate.

2. Scarce Resource Allocation Triage Process

The Scarce Resource Allocation Triage Team (SRATT) should be comprised of senior clinicians and organizational leaders with experience in tertiary triage (e.g., critical care, emergency medicine, trauma surgery, etc.), clinical ethics, palliative care, nursing, spiritual services, risk management, etc., with one designated as Chair who oversees all oversight processes.

The SRATT should convene regularly when the scarce resource allocation protocol (SRAP) is being implemented. Activities of the SRATT should include:

- Making recommendations about triage decisions if requested by the Triage Officers.
- Handling requests for re-evaluation of assigned priority scores. Triage decisions will be upheld or overturned based on the SRATT's evaluation of whether the SRAP was appropriately followed.
- Reviewing triage decisions for appropriateness and consistency.
- Updating the SRAP when necessary.

The relevant chiefs of the pediatric and adult ICUs, as well as the pediatric and adult emergency departments, should serve as Triage Officers (TOs). TOs (or designees) should work with the hospital CMO to apply the SRAP and make determinations regarding critical care treatment for all affected patients. To the extent possible, TOs (or designees) should not be involved in both triage and patient care simultaneously.

Triage decisions should be made in accordance with the SRAP and applied consistently and objectively to all patients. Appropriate technology should be used to augment clinical assessment. Technology to be used has to be non-complex, accessible, and designed for maximal impact with minimal need for transport or breach of infection control measures and easy to maintain.

Triage decisions for each patient should be reassessed at least every 24 hours. The degree of scarce resource allocation through triage is determined by the

supply-demand imbalance and should be proportionate to the expected shortfall in resources.

3. Scarce Resource Allocation Protocol (SRAP)

The SRAP is based on the best available scientific evidence and is consistent with the following ethical guidelines:

- Triage decisions should be made primarily on the likelihood of net clinical benefit as determined by expected incremental increase in short-term and long-term survival. Patients most likely to survive to discharge from the hospital and to live longest in the community after discharge are given priority.
- Triage decisions may also take into account patients' anticipated quality of life and the resources required to achieve incremental survival. Patients who are expected to survive with minimal quality of life or who will require a disproportionate amount of resources to survive are given lower priority.
- If patients have similar expected incremental increases in survival, priority should be given to those whose quality-adjusted life years are greater in number.
- Patients should be triaged according to this protocol regardless of the cause of their need for critical care, ability to pay, or role in the community.

When the SRAP is active, patients should be eligible for critical care according to the inclusion and exclusion criteria described in the Utah Model. This scoring system for assessing expected incremental increase in survival should be used to support clinical judgment in making triage decisions.

In the absence of an exact, evidence-based scoring system for likelihood of COVID-19 survival, the Sequential Organ-Failure Assessment (SOFA/pSOFA) scoring system (or similar) should be used to determine patient severity of illness and expected mortality.

Additionally, clinicians may use a known scoring system (such as the PRISM III or APACHE II) to aid in assessment.

Patients who are not, for whatever reason, candidates for life-sustaining treatments should be provided adequate comfort care and symptom management. Patients receiving comfort care should not be admitted to the ICU, and palliative care clinicians (or, where reasonable, staff trained in comfort care) should direct the care of such patients, if feasible.

It is clinically inappropriate to attempt cardiopulmonary resuscitation (CPR) or intubation on patients who have not been offered concurrent life-sustaining medical treatment.

If a clinician has appealed the Triage Officers' decision not to offer critical care, that patient should receive comfort care on a time-limited basis until the appeal has been reviewed by the SCATT.

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APPENDIX C: SCARCE RESOURCE ALLOCATION TRIAGE TEAM QUICK GUIDE

1. Purpose

History indicates that there are times when demand for healthcare exceeds the ability of health systems to supply it.[1] In such circumstances, "triage standards of care" are ethically justified to allocate healthcare resources according to broadly consequentialist reasoning, meaning that a shift from focusing on the individual autonomy of patients to the overall public good is warranted.[2]

The novel COVID-19 pandemic[3] has caused sufficient crises in other countries[4] to indicate that it may impact the U.S. healthcare system such that in some localities a shift from normal standard of care to a triage standard of care may be necessary.

A Scarce Resource Allocation Triage Team (SRATT) should therefore be created for the purpose of developing and implementing ethical methods for allocating scarce healthcare resources and supporting healthcare professionals in a crisis circumstance.

2. SRATT Operations Procedures

The SRATT should be a subcommittee of the COVID-19 Clinical Planning and Education Workgroup, with direct relationships to Incident Command. The SRATT has two basic functions:

1. To develop guidance for ethically allocating scarce healthcare resources and supporting healthcare professionals in a crisis circumstance.
2. To implement allocation methods, making choices to provide, withhold, or withdraw scarce resources from patients in a crisis.

When developing guidance and supporting healthcare professionals, **the SRATT requires a quorum to operate, defined as one third of all primary or secondary members**, as described below. (Allowance will be made to replace SRATT members if needed in the event of illness or to maintain a quorum.) In this function, which is anticipated to occur prior to (and potentially during) implementing triage standards of care, the SRATT meets regularly to work on developing and agreeing upon the ethical framework for decision making, clinical algorithms for triage, educational materials and methods, and other business as needs arise. All SRATT business of this nature may be performed remotely, including any voting required to ratify committee actions.

When making allocation decisions, the SRATT operates in smaller groups, called decision making teams (DMTs) of at least two individuals, preferably three, one of whom must always be a physician. As long as circumstances allow it, preference should be to staff SRATT-DMTs solely by physicians.

Allocation decisions are decisions to provide or withhold a resource (e.g., a hospital bed, ventilator, etc.) to or from a patient when resources are scarce, meaning that the volume of patients in need of the resource is far greater than the amount of the resource available. **Allocation decisions are made by the SRATT, in smaller groups, using guidelines endorsed by the SRATT and approved institutionally, not by individual healthcare professionals at the bedside.** In this way, frontline healthcare providers are spared the moral burden of having to make allocation decisions.

In the event the hospital anticipates a surge of patients to such an extent that triage standards of care are likely to be implemented and allocation decisions likely to be necessary, the SRATT Chair (hospital CMO or designee) should designate one or more members of the SRATT to:

- Group members into sets of three to form decision making teams (DMTs).
- Coordinate an on-call schedule for DMTs, such that they are available 24 hours a day, 7 days a week.
- Identify a communication method for decision making teams, such as WebPaging.
- Determine and communicate how leaders and frontline providers will communicate with DMTs.
- Regularly attend Incident Command meetings.
- Report to the Incident Commander (or designee) on the actions of the SRATT.
- Collaborate with facilities, as necessary, regarding the operations of their SRATTs or similar bodies.
- Collaborate with geographically nearby facilities regarding the operations of their SRATTs or similar bodies, including the ethical frameworks and clinical standards upon which their decisions are being made.

In the event healthcare organizations experience a surge of patients to such an extent that triage standards of care are implemented, and allocation decisions must be made, the SRATT Chair (or designee) should:

- Notify decision making teams of their position in the on-call schedule, the duration over which the on-call schedule is in force, and the expectations of each team.
- Procure explicit written authorization from the Incident Commander (or designee) to implement allocation decision making as described in this document.
- Request additional staff from hospital leadership to support the functioning of DMTs.
- Implement a regularly occurring operations huddle for the SRATT, which may be virtual.
- Identify operational indicators to determine when triage standards of care are likely to be suspended.

In the event the SRATT's decision making teams are implemented, the SRATT Chair shall schedule a mandatory debrief for all SRATT members no later than 48 hours after the conclusion of the last DMT's work, which may be virtual.

3. Membership

Academic literature[6] and allocation plans from other jurisdictions[7] state that SRATTs should be multidisciplinary bodies. The membership of the SRATT should necessarily be fluid in the setting of a crisis. The following roles (and more, if necessary) should be filled to the extent possible. For each role, a primary and secondary member is identified by leaders to be approved by the Incident Commander (or designee), as appropriate.

- **Chair:** This individual should be the hospital CMO (or designee)
- **Critical Care Representative:** This individual must be a physician with expertise in critical care, pulmonology, or internal medicine.
- **Trauma Representative:** This individual must be a physician with expertise in trauma surgery.
- **Infection Control Representative:** This individual must be either a physician or other employee with expertise in infection control and/or infectious diseases.
- **Emergency Medicine Representative:** This individual must be a physician with expertise in emergency medicine.
- **Hospital Medicine Representative:** This individual must be a physician with expertise in internal medicine or hospital medicine.
- **Nursing Leadership Representative:** This individual must be a nursing manager, with a preference for expertise in critical care nursing.
- **Respiratory Care Representative:** This individual must have expertise in respiratory therapy.
- **Palliative Care Representative:** This individual must be a physician with expertise in palliative care.
- **Clinical Ethics Representative:** This individual must have expertise in clinical bioethics.
- **Pharmacy Representative:** This individual must have expertise in clinical pharmacy, preferably with expertise in operations and utilization.
- **Social Work Representative:** This individual must have expertise in social work.
- **Spiritual Services Representative:** This individual must have expertise in multi-faith, non-sectarian spiritual care in healthcare settings.
- **Community Representative:** This individual must be an Ethics Advisory Committee community member.

If the volume of allocation decisions and related work is high, the primary and secondary members should be required to rotate to the best of their availability. Members may fill a primary and secondary role but neither two primary nor two secondary roles.

4. Ethical Framework

Academic literature,[8] emergency preparedness plans from Massachusetts and other jurisdictions,[9] and professional society guidelines[10] all agree that ethical allocation of scarce resources in crisis conditions should be supported by an explicit ethical framework. The SRATT is responsible for developing, vetting, and approving the ethical framework that supports its work prior to the implementation of allocation decision making.

An ethical framework supports the SRATTs structure, function, and operations. In times of crisis, allocation decisions rest on the principles of minimizing mortality: allocation decisions aim to minimize overall mortality by finding the right balance between overtriage and undertriage. Ethical allocation decisions are also based upon the principle of harm reduction; a duty to care; principles of justice, fairness, and equity; transparency; proportionality; and other principles as delineated in the *Guidelines* above.

Policies already under effect across healthcare organizations will be helpful in supporting ethical medical decision making under normal and surge conditions prior to the implementation of triage standards of care. These include:

- Healthcare Decisions: Consent and Refusal of Treatment.
- Non-Beneficial and/or Harmful Treatments.
- Organizational Ethics.
- Palliative Sedation Therapy.

5. Clinical Algorithms

Allocation decisions made by the SRATT should be supported by clinical algorithms that are vetted and approved by appropriate subject matter experts. The SRATT is responsible for vetting these algorithms in as timely a manner as possible based on anticipated need.

6. Educational Materials

As needed, the SRATT should develop educational materials for leaders, frontline healthcare providers, staff, and other stakeholders explaining allocation decision making in a crisis setting, including the ethical framework and clinical algorithms that support decision making. Educational materials must be vetted and approved by the Incident Commander (or designee). Approved educational materials should become appendices to this document.

7. Personnel

Work by additional personnel may be needed to be included to meet the above goals, such as a project manager, quality analyst, or Public Affairs. The SRATT Chair (or

designee) may request temporary personnel assignments from Incident Command as needed.

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APPENDIX D: SCARCE RESOURCE ALLOCATION TRIAGE TEAM DISCIPLINARY MEMBERSHIP ROSTER AND DECISION MAKING TEAMS

Role	Name	Primary or Secondary
Chair		Primary
Vice Chair		Secondary
Critical Care Representative		Primary
Critical Care Representative		Secondary
Trauma Representative		Primary
Trauma Representative		Secondary
Surgery 1 Representative		Primary
Surgery 1 Representative		Secondary
Surgery 2 Representative		Primary
Surgery 2 Representative		Secondary
Surgery 3 Representative		Primary
Surgery 3 Representative		Secondary
Surgery 4 Representative		Primary
Surgery 4 Representative		Secondary
Surgery 5 Representative		Primary

Surgery 5 Representative		Secondary
Surgery 6 Representative		Primary
Surgery 6 Representative		Secondary
Infection Control Representative		Primary
Infection Control Representative		Secondary
Endocrinology Representative		Primary
Endocrinology Representative		Secondary
Gastroenterology Representative		Primary
Gastroenterology Representative		Secondary
Emergency Medicine Representative		Primary
Emergency Medicine Representative		Secondary
Hospital Medicine Representative		Primary
Hospital Medicine Representative		Secondary
Nursing Leadership Representative		Primary
Nursing Leadership Representative		Secondary

Bedside Nursing Representative		Primary
Bedside Nursing Representative		Secondary
Respiratory Care Representative		Primary
Respiratory Care Representative		Secondary
Behavioral Health Representative		Primary
Behavioral Health Representative		Secondary
Heart and Vascular Representative		Primary
Heart and Vascular Representative		Secondary
Hematology/Oncology Representative		Primary
Hematology/Oncology Representative		Secondary
Neurology Representative		Primary
Neurology Representative		Secondary
Palliative Care Representative		Primary
Palliative Care Representative		Secondary
Clinical Ethics Representative		Primary

Clinical Ethics Representative		Secondary
Pharmacy Representative		Primary
Pharmacy Representative		Secondary
Risk Management Representative		Primary
Risk Management Representative		Secondary
Social Work Representative		Primary
Social Work Representative		Secondary
Spiritual Services Representative		Primary
Spiritual Services Representative		Secondary
Patient Relations Representative		Primary
Patient Relations Representative		Secondary
Community Hospitals Representative		Primary
Community Hospitals Representative		Secondary
Community Representative		Primary
Community Representative		Secondary

DMT1: Surgery 1, Infection Control, Nursing Leadership

DMT2: Surgery 2, Endocrinology, Pharmacy

DMT3: Surgery 3, Gastroenterology, Social Work

DMT4: Surgery 4, Hospital Medicine, Spiritual Services

DMT5: Surgery 5, Behavioral Health, Patient Relations

DMT6: Surgery 6, Heart and Vascular, Bedside Nursing

DMT7: Hematology/Oncology, Neurology, Risk Management

DMT8: Palliative Care, Community Hospitals, Clinical Ethics

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APPENDIX E: POLICY ON ALLOCATION OF SCARCE CRITICAL RESOURCES DURING A PUBLIC HEALTH EMERGENCY

Executive Summary

This document provides guidance to organizational leadership and frontline healthcare professionals for the triage of critically ill patients when a public health emergency creates demand for critical care resources (e.g., ventilators, critical care beds, etc.) that outstrips available supply. It distinguishes two phases of response to crisis conditions, *surge*, which is a time for preparation that precedes actual crisis, and *crisis*, when a regional-level authority has declared an emergency.

The allocation framework under both conditions is grounded in ethical obligations that include the duty to care, duty to steward resources, distributive and procedural justice, reciprocity, and transparency (Section 1). It is consistent with existing public health ethics frameworks[1] and recommendations for how to allocate scarce critical care resources during a public health emergency.[2] From this ethical framework, a structure for supporting scarce resource allocation triage teams (Section 2) and a fair decision making process follow (Section 3). The process is designed to be attentive to the traumas likely to follow from widespread allocation decision making across healthcare organizations, and especially for frontline providers, decision makers, and patients (Section 4), including scripting for communicating allocation decisions with loved ones (Section 5) and a mechanism for allowing stakeholders to appeal allocation decisions (Section 6).

1. Ethical Framework

It is imperative that the teams who take on the awesome task of allocating scarce critical care resources are supported by an explicit and comprehensive ethical framework. Healthcare organization's approach should rest on these principles:

Duty to Care

Healthcare professionals have a duty to care, even at personal risk. This includes a commitment to delivering the best care possible given the available resources. In a crisis, every patient should receive compassionate care, whether aimed at maximizing survival or supporting a dignified death.

Duty to Steward Resources

In crisis, all resources are potentially scarce, and all clinicians have a duty to protect them. All resources should be carefully allocated according to their known scarcity, likelihood of renewal, and the extent to which they can be replaced or reused.

Distributive and Procedural Justice

A system of allocation during crisis must be applied consistently and broadly, to maximize the chances of fairness and minimize the influence of biases such as ageism, sexism, racism, or ableism. Allocation decisions should seek to support access to care for all, regardless of their insurance status, and especially the most vulnerable or those who suffer disproportionately.

Reciprocity

Healthcare professionals, by virtue of the healing relationships they support through their work, may be justly given preference for scarce critical care resources under some circumstances.

Transparency

To the extent practically feasible, allocation plans should be communicated as efficiently, widely, and comprehensively as possible across the health system and moral community, inclusive of government agencies, nearby healthcare facilities, staff, patients, and other stakeholders. Such transparency is likely to minimize actual and vicarious trauma to patients, loved ones, staff, and members of the public after the crisis has abated.

2. Creation of Scarce Resource Allocation Triage Teams

Facilities across healthcare organizations have different levels of care, bed sizes, staffing, and leadership cultures. In real time, the need to triage will arise and present itself differently for these reasons. This section provides guidance on how to create local scarce resource allocation triage teams (SRATT) during surge conditions that ensures a single approach across the enterprise, while also allowing for tailored local implementation during crisis conditions. **It is important to emphasize that patients' treating physicians should not make allocation decisions**; **a triage team with expertise and training in the allocation framework should make allocation decisions**. The separation of the triage role from the clinical role is intended to ensure quality decision making, enhance objectivity, avoid conflicts of commitments, and minimize moral trauma and distress.

Scarce Resource Allocation Triage Teams (SRATT)

The SRATT has two basic functions:

1. To develop guidance for ethically allocating scarce healthcare resources and supporting healthcare professionals in a crisis circumstance.
2. To implement allocation methods, making choices to provide, withhold, or withdraw scarce resources from patients in a crisis.

When developing guidance and supporting healthcare professionals, **the SRATT requires a quorum to operate, defined as one third of all primary or secondary members**, as described below. In this function, which is anticipated to occur prior to (and potentially during) implementing triage standards of care, the SRATT meets regularly to work on developing and agreeing upon the ethical framework for decision making, clinical algorithms for triage, educational materials and methods, and other business as needs arise. All SRATT business of this nature may be performed remotely, including any voting required to ratify committee actions.

When making allocation decisions, the SRATT operates in smaller groups, called decision making teams (DMTs) of at least two individuals, preferably three, one of whom must always be a physician. As long as circumstances allow it, preference should be to staff SRATT-DMTs solely by physicians.

Allocation decisions are decisions to provide or withhold a resource (e.g., a hospital bed, ventilator, etc.) to or from a patient when resources are scarce, meaning that the volume of patients in need of the resource is far greater than the amount of the resource available. **Allocation decisions are made by the SRATT, in smaller groups, using guidelines endorsed by the SRATT and approved institutionally, not by individual healthcare professionals at the bedside.** In this way, frontline healthcare providers are spared the moral burden of having to make allocation decisions.

In the event the hospital anticipates a surge of patients to such an extent that triage standards of care are likely to be implemented and allocation decisions likely to be necessary, the SRATT Chair (hospital CMO or designee) should designate one or more members of the SRATT to:

- Group members into sets of three to form decision making teams (DMTs).
- Coordinate an on-call schedule for DMTs, such that they are available 24 hours a day, 7 days a week.
- Identify a communication method for decision making teams, such as WebPaging.
- Determine and communicate how leaders and frontline providers will communicate with DMTs.
- Regularly attend Incident Command meetings.
- Report to the Incident Commander (or designee) on the actions of the SRATT.
- Collaborate with facilities, as necessary, regarding the operations of their SRATTs or similar bodies.
- Collaborate with geographically nearby facilities regarding the operations of their SRATTs or similar bodies, including the ethical frameworks and clinical standards upon which their decisions are being made.
- Agree upon a framework at least 24 hours in advance so that triage physicians can make informed decisions.

In the event that healthcare organizations experience a surge of patients to such an extent that triage standards of care are implemented, and allocation decisions must be made, the SRATT Chair (or designee) should:

- Notify decision making teams of their position in the on-call schedule, the duration over which the on-call schedule is in force, and the expectations of each team.
- Procure explicit written authorization from the Incident Commander (or designee) to implement allocation decision making as described in this document.
- Request additional staff from hospital leadership to support the functioning of DMTs.
- Implement a regularly occurring, mandatory operations huddle for the full SRATT, which may be virtual.
- Identify operational indicators to determine when triage standards of care are likely to be suspended.

In the event the SRATT's decision making teams are implemented, the SRATT Chair shall schedule a mandatory debrief for all SRATT members no later than 48 hours after the conclusion of the last DMT's work, which may be virtual.

Executive Support

Local senior leaders, including physicians, are responsible for appointing members of DMTs, preferably no later than during surge conditions. A roster of approved triage committee members should be maintained that is large enough to ensure that they will always be available on short notice; that team members work in shifts lasting no longer than 13 hours; that team members will have sufficient rest periods between shifts; and that the rationale for all allocation decisions is comprehensively documented in the medical record and in ways that facilitate rapid, real-time reporting as described herein. Senior leadership should provide the triage team with support staff to collect, analyze, and distribute information about the team's work. The support staff member must be allocated appropriate time and provided with appropriate computer and IT support to maintain updated databases of patient priority levels and scarce resource usage (total numbers, location, and type). **Leadership can reformat the guidance given here to the extent necessary to rapidly get approval by local policy making mechanisms, including making minor revisions or adding addenda to further specify workflows aligned with local conditions.**

Triage Mechanism

During crisis conditions, the triage team should use an explicit allocation framework to determine priority scores of all patients eligible to receive scarce critical care resources. For patients already being supported by a scarce resource, the evaluation should include reassessment to evaluate for clinical improvement or worsening at pre-specified intervals. The triage officer should review the comprehensive list of priority

scores for all patients and should communicate with the clinical teams immediately after a decision is made regarding allocation or reallocation of a critical care resource.

Quality Assessment, Oversight, and Reporting

As widespread acute care triage would be novel , if this policy is implemented and DMTs perform allocation decision making in multiple institutions over a prolonged time period, Incident Command is responsible for rapidly developing and deploying a method of tracking the implementation of this policy, defining and describing quality performance of DMTs, and longitudinally analyzing their performance. Under such a scenario, Incident Command is responsible for allocating a quality analyst or individual with equivalent capabilities, to be overseen by the local CMO, to process the data emerging from local triage team activities, so that it can be regularly reported to Incident Command for the purposes of oversight.

3. Allocation Process for Scarce Critical Care Resources

Under crisis conditions only, a clinical assessment algorithm is coupled with a decision-making process to produce an allocation framework for making initial triage decisions for patients who present with illnesses that typically require critical care resources. **The framework must be applied to all patients presenting with critical illness, not simply those with the disease or disorders that arise from the public health emergency.** This process involves several steps, detailed below:

A. Calculating each patient's priority score based on the multi-principle allocation framework.
B. Assigning each patient to a priority group (Red, Green, Yellow, or Blue).
C. Determining, on a daily basis, how many priority groups will receive access to critical care interventions.
D. Deciding, as needed, which patients will receive access to critical care resources in the setting of a tie within a priority group receiving daily priority.

In many crisis conditions, first responders and bedside clinicians should perform the immediate stabilization of any patient in need of critical care, as they would under normal circumstances. Along with stabilization, temporary ventilatory support may be offered to allow the triage officer to assess the patient for critical resource allocation. **Every effort should be made to complete the initial triage assessment within 90 minutes of the recognition of the need for critical care resources.**

Under some crisis conditions, the duty to care may be offset by other duties, such as the duty to steward resources like personal protective equipment. Under these conditions, it may be appropriate to issue a directive across a facility to attempt immediate stabilization, as one would under normal conditions, but to limit escalation of emergency care such that no cardiopulmonary resuscitation be performed upon patients who would receive it under normal circumstances in an emergency department. Whether such conditions exist should be determined by senior hospital leaders, including

physicians and senior vice presidents, in collaboration with the triage team. If this scenario were to be put into effect, this policy would be communicated in a transparent manner to stakeholders as it would be a departure from non-crisis standard of care.

Step 1: Priority Score Calculation

During crisis conditions, patients who are more likely to survive with intensive care are prioritized over patients who are less likely to survive with intensive care using an **MPS Score**. Patients who do not have serious comorbid illness are given priority over those who have illnesses that limit their life expectancy. As summarized in Table 1, the sequential organ failure assessment (SOFA/pSOFA) score is used to characterize patients' prognosis for hospital survival. The presence of life-limiting comorbid conditions is also used to characterize patients' longer-term prognosis. Points are assigned according to the patient's (p)SOFA score (range from 2 to 4 points); and the presence of comorbid conditions (2 points for major life-limiting comorbidities, 4 points for severely life-limiting comorbidities (Table 2)). These points are then added together to produce a total priority score, which ranges from 2 to 8. Lower scores indicate higher likelihood to benefit from critical care; **priority should be given to those with lower scores**.

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Table 1. Multi-Principle Strategy to Allocate Critical Care/Ventilators During a Public Health Emergency

Purpose	Clinical Assessment	MPS Point Scoring System*			
		1	**2**	**3**	**4**
Prognosis for Hospital Survival	(p)SOFA	<6	6-9	10-12	>12
	MPS (p)SOFA Score				
Prognosis for Long Term Survival	Assessment of Comorbidities	None	1 Major Comorbidity	>1 Major Comorbidity	Indicator for Mortality within One Year
	MPS Comorbidity Score				
	MPS Total				

(p)SOFA = (pediatric)Sequential Organ Failure Assessment
* Patients with the lowest cumulative score are prioritized for receiving scarce critical care resources during crisis conditions.

Prognostication under normal circumstances is difficult. However, under crisis conditions, it is likely that physicians will be able to more accurately prognosticate about a patients' long term chances of term survival with meaningful recovery, because the generalized resource scarcity entails that fewer people are likely to receive adequate healthcare to recover under crisis conditions than under normal conditions. Therefore, during crisis, more people will be likely to have a lower chance of long term survival than in normal conditions. Yet prognostication requires discernment and clinical judgment. The following examples of major comorbid conditions and indicators of morbidity within one year used to score patients in Step 1 should be adapted to local conditions by DMTs using the best available evidence.[3]

Table 2. Examples of Major Comorbidities and Indicators of Morbidity Within One Year Used for Scoring

Examples of Major Comorbidities (associated with significantly decreased long-term survival)	Examples of Severely Life Limiting Comorbidities (associated with survival < 1 year)
○ Moderate Alzheimer's disease or related dementia ○ Malignancy with a < 10 year expected survival ○ New York Heart Association (NYHA) Class III heart failure ○ Moderately severe chronic lung disease (e.g., COPD, IPF) ○ End stage renal disease ○ Severe, inoperable multivessel CAD ○ Progressive neurologic or neuromuscular disease with significant disability ○ Severe or progressive metabolic disorder ○ Cirrhosis with history of decompensation ○ End-stage renal disease in patients < 75	○ Severe Alzheimer's disease or related dementia ○ Metastatic cancer receiving only palliative treatments ○ New York Heart Association (NYHA) Class IV heart failure ○ Severe chronic lung disease with FEV1 < 25% predicted, TLC < 60% predicted, or baseline PaO2 < 55mm Hg ○ Cirrhosis with MELD score ≥20 ○ Unwitnessed cardiac arrest with delayed or no cardiopulmonary resuscitation ○ Known severe chromosomal abnormality or genetic syndrome, such as trisomy 13 or 18 ○ End stage/ severe neurologic or neuromuscular disease (SMA type 1 or similar) ○ End stage pulmonary hypertension

DMTs are expected to evaluate, revise, and circulate their lists of major comorbidities and indicators of morbidity within one year during their operations and regular report outs at the local and regional levels.

Step 2: Assign Patients to Color-Coded Priority Groups

Once a patient's MPS Score is calculated using the system described in Table 1, each patient is assigned to a color-coded triage priority group (Table 3). This must be noted clearly in the medical record by the attending physician. Using these priority groups enables DMTs to create operationally clear priority groups to receive critical care resources, according to their MPS score. For example, individuals in the red group have the best chance to benefit from critical care interventions and should therefore receive priority over all other groups in crisis conditions. The orange group has intermediate priority and should receive critical care resources if there are available resources after all patients in the red group have been allocated critical care resources. The yellow group has lowest priority and should receive critical care resources if there are available resources after all patients in the red and orange groups have been allocated critical care resources.

It is important to note that all patients should be eligible to receive critical care beds and services regardless of their priority score. The availability of critical care resources should determine how many eligible patients will receive critical care. Patients who are not allocated critical care, mechanical ventilation, or both should receive medical care that includes intensive symptom management and psychosocial support. They should also be reassessed at least daily to determine if changes in resource availability or

their clinical status warrant provision of critical care services. Where available, specialist palliative care teams should be available for consultation. Where palliative care specialists are not available, the treating clinical teams should provide primary palliative care.

Table 3. Color-Coded Priority Groups Based on Multi-Principle Scoring (MPS)

Priority Assignments Based on MPS System to Assign Priority Category	
Level of Priority and Code Color	**Priority Score from MPS System**
RED **Highest Priority for Scarce Resource** **(Immediate Need for Critical Interventions)**	**Priority Score 2-4**
GREEN **High Priority for Scarce Resource** **(No Immediate Need for Critical Interventions)**	**Priority Score 2-4**
YELLOW **Low Priority for Scarce Resource** **(Continued Medical Management)**	**Priority Score 5-6**
BLUE **Lowest Priority for Scarce Resource** **(Comfort Care)**	**Priority Score 7-8**

The daily operations of DMTs should include reconciling the amount of available scarce critical care resources with recent trends in the volume of patients who present that are likely to need assessment for critical care. Each day that allocation decisions are anticipated, a member of the DMT should produce an easily readable grid diagram to indicate which MPS-tiers are likely to receive scarce critical care resources, so that hospital and physician leaders are able to communicate with appropriate staff which MPS groups are unlikely to receive critical care resources. Yet, this communication must not supersede decision making by the DMTs, as described herein.

Step 3: Reassessment

Under crisis conditions, the triage team should receive periodic reassessments of patients who are receiving critical care services by the patient's attending physician, in order to determine whether it is appropriate to reallocate scarce critical care resources to a patient in a higher priority MPS group. The ethical justification for such reassessment is that, in a public health emergency when there are not enough critical care resources for

all, the goal of maximizing population outcomes would be jeopardized if patients who were determined to be unlikely to survive were allowed indefinite use of scarce critical care services. In addition, periodic reassessments lessen the chance that arbitrary considerations, such as when an individual develops critical illness, unduly affect patients' access to treatment.

All patients who are allocated critical care services should be allowed a therapeutic trial of a duration to be determined by the clinical characteristics of the disease. The decision about trial duration should ideally be made as early in the public health emergency as possible, when data becomes available about the natural history of the disease. The trial duration should be modified as appropriate as subsequent relevant data emerges.

Periodic reassessments of patients receiving critical care resources should involve re-calculating (p)SOFA score, assessing changes in the patient's clinical trajectory, and documenting this in the medical record. Patients showing improvement should continue to receive their allocated critical care resources until the next assessment. If there are patients in the queue for critical care services, then patients who, upon reassessment, show substantial clinical deterioration as evidenced by worsening (p)SOFA scores or overall clinical judgment, then the triage team should determine whether it is appropriate to reallocate the scarce resources they are receiving. Although patients should generally be given the full duration of a trial, if patients experience a precipitous decline (e.g., refractory shock and disseminated intravascular coagulation) or a highly morbid complication (e.g., massive stroke) that portends a very poor prognosis, the triage team may make a decision before the completion of the specified trial length that the patient is no longer eligible for critical care treatment.

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

4. Additional Considerations

While allocation decision making is not unprecedented, its widespread implementation across civil society would be. Therefore, it is impossible to predict what other ethical or clinical considerations would warrant consideration in the event triage in such a scenario. The following additional considerations, as well as others not specified here, should be considered to guide allocation decision making in the event of a widespread, prolonged, public health emergency. In the event that any of these additional considerations are appealed to as reasons for making allocation decisions, they should be explicitly documented, recorded, and integrated into the normal reporting by triage committees described above.

Resolving "Ties" Between Patients Within MPS Groups

In the event of "ties" in priority scores between patients and not enough critical care resources for all patients with the lowest priority score, careful and critical analysis by the SRATT Chair (or designee) should be performed. To aid in the process of these

determinations, **supplemental metrics (i.e., scoring systems) should be introduced** that take into consideration the following.

- **Likelihood of** long-term net clinical **benefit**.
- Quality-adjusted **life years** (QALY).
- **Urgency** of need.
- **Duration** of benefit.
- Long-term **quality of life.**
- **Availability of resources** required to secure long-term benefit.

Categorical Exclusion Criteria

A central feature of this allocation framework is that it avoids the use of categorical exclusion criteria to indicate individuals who should not have access to critical care services under any circumstances during a public health emergency. Categorical exclusion may be interpreted by the public that some groups are "not worth saving," leading to perceptions of unfairness. In a public health emergency, public trust will be essential to ensure compliance with restrictive measures. Thus, an allocation system should make clear that all individuals are "worth saving." One way to do this is to keep all patients who would receive mechanical ventilation during routine clinical circumstances eligible but allow the availability of ventilators to determine how many eligible patients receive it.

It should be noted that there are some conditions that lead to immediate or near-immediate death despite aggressive therapy such that during routine clinical circumstances clinicians do not provide critical care services (e.g., cardiac arrest unresponsive to appropriate ACLS, overwhelming traumatic injuries, massive intracranial bleeds, intractable shock). During a public health emergency, the duty to care and duty to steward resources align in underscoring physicians' obligations to make clinical judgments about the appropriateness of critical care use, based on the same criteria one would apply during normal clinical practice. Similarly, during crisis conditions, the duty to care, duty to steward resources, and commitment to procedural justice also align in support of physicians' obligations to appropriately respond to loved ones' requests for potentially inappropriate treatment, which may include refusing such requests after a fair procedure for responding to them has been implemented.[4-8]

Reciprocity: Prioritizing Those Who are Central to the Public Health Response

Individuals who perform tasks that are vital to the public health response, including all those whose work directly supports the provision of acute care to others, should be given heightened priority. This category should be broadly construed to include those individuals who play a critical role in the chain of treating patients and maintaining societal order. The specifics of how to operationalize this consideration should depend on the exact nature of the public health emergency. Options include subtracting points from the priority score for these individuals or using it as a tiebreaker criterion.

5. Communicating Allocation Decisions

Although the authority for allocation decisions rests with the SRATT, there are several potential strategies to communicate allocation decisions to patients and families. Upon identifying that a facility is likely to experience surge conditions, it is incumbent upon Incident Command to support the local CMO in developing and distributing scripting to support appropriate communication by SRATT members that fits each of the following envisioned communication scenarios.

The triage officer (TO) or delegated SRATT member should first inform the affected patient's attending physician about the allocation decision prior to collaboratively determining the best approach to inform the individual patient and family. Options for who should communicate the decision include (1) a designated member of the SRATT, a TO, the local CMO, or a combination thereof should communicate triage decisions to patients and families of patients who are not, for whatever reason, candidates for life-sustaining medical treatments.

The best approach will likely depend on a variety of local factors, including the dynamics of the individual physician-patient-family relationship and the preferences of the attending physician. In general, communications about allocation decisions should explain the severity of the patient's condition in an emotionally supportive way, explain the implications of those facts in terms of the allocation decision, and explain the palliative therapies available for the patient. It should also be emphasized that the allocation decision was not made by the attending physician but is instead one that arose from the extraordinary emergency circumstances and reflected a public health decision. It may also be appropriate to explain the medical factors that informed the decision, as well as the factors that were not relevant (e.g., race, ethnicity, insurance status, perceptions of social worth, immigration status, etc.). Palliative care clinicians, social workers, and chaplains should be made available to provide ongoing emotional support to the patient and family.

During surge conditions, in anticipation of a crisis requiring widespread triage, personnel should be allocated by appropriate leaders at the regional or system level to develop communication for dissemination across all spans and layers, including appropriately to stakeholders outside of the healthcare organization, such as governmental agencies, the media, and the public. These efforts cannot be the responsibility of members of local DMTs, as they will be preparing for the work of making allocation decisions.

6. Appeals Process for Allocation Decisions

In the event a patient's loved one or healthcare professional challenges individual allocation decisions, an appeals mechanism is required to resolve such disputes. On practical grounds, different appeals mechanisms are needed for the initial decision to allocate a scarce resource among individuals, none of whom are currently using the resource, and the decision to withdraw a scarce resource from a patient who is clinically deteriorating.

For the initial allocation decision, it is recommended that the only permissible appeals are those based on a claim that an error was made by the triage team in the calculation of the priority score. The process of evaluating the appeal should consist of the triage team verifying the accuracy of the priority score calculation by recalculating the score.

Decisions to withdraw a scarce critical care resource from a patient who is already receiving it may cause heightened moral concern and also depend on more clinical judgment than initial allocation decisions. Therefore, a more robust appeal process should be implemented for them, so long as the conditions of allocation decision making permit doing so. If appeals take up sufficient time that they impede other awaiting allocation decisions, then they should be limited only to verifying that the priority scoring was accurately calculated by recalculating the score. Time permitting, the more robust appeals process includes:

A. The appeal should be immediately brought to the SRATT.
B. The individuals who are appealing the allocation decision should explain their disagreement with the decision. An appeal may not be brought based on an objection to the overall allocation framework.
C. The SRATT Chair (or designee) should explain the grounds for the allocation decision that was made.
D. The appeals process must occur quickly enough that the appeals process does not harm patients who are in the queue for the scarce resource. If this is untenable, simple verification priority scoring should be offered.
E. An independent subgroup of the SRATT, removed from the original calculation, should recalculate the score so as to preclude bias.
F. The decision of the SRATT subgroup should be final.
G. Periodically, the SRATT should retrospectively assess whether the review process is consistent with effective, fair, and timely application of the allocation framework.

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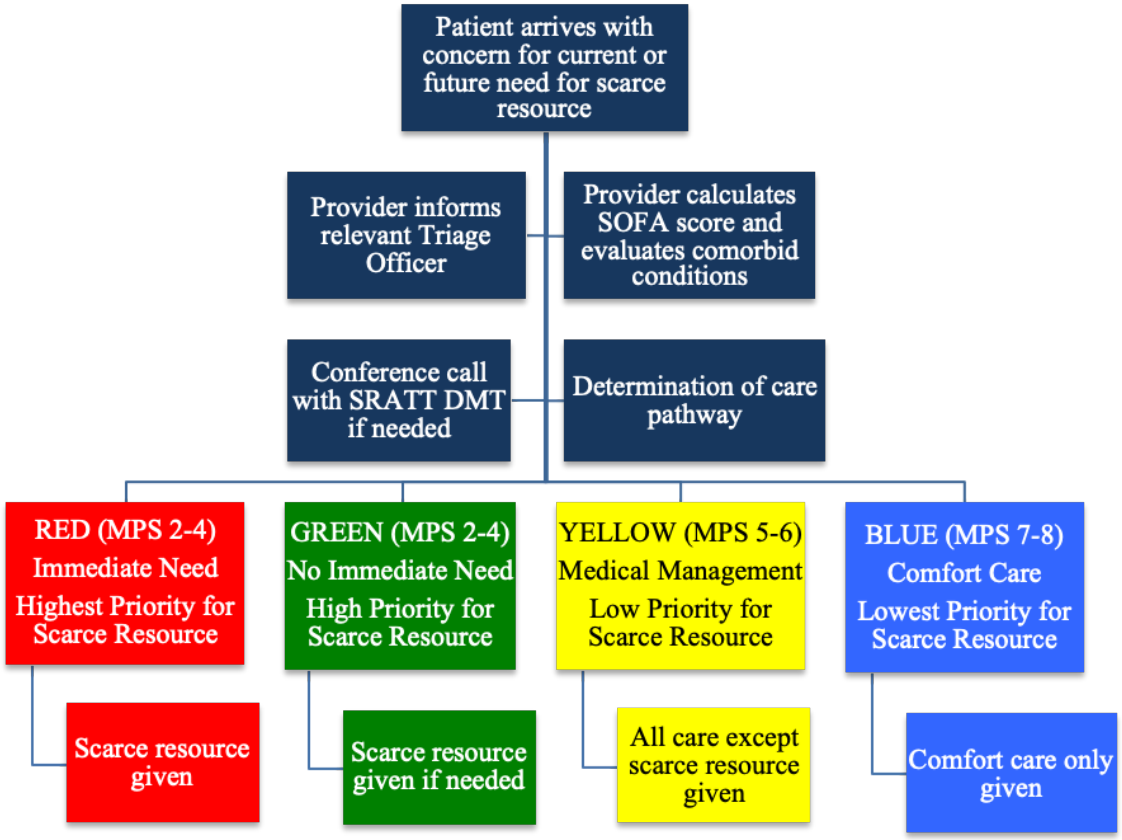
APPENDIX F: SCARCE RESOURCE ALLOCATION PROTOCOL TRIAGE ALGORITHMS

Algorithm 1: Initial Triage Determination of Allocation of Scarce Resources



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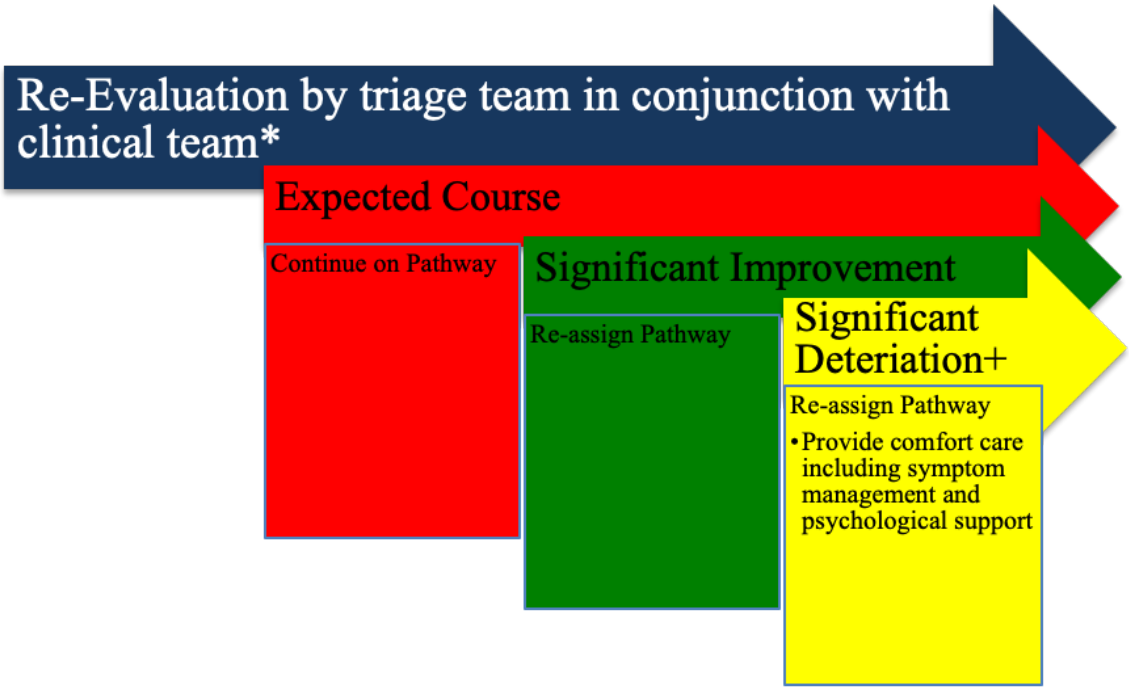
Algorithm 2: Re-evaluation of All Patients

This will include patients already receiving critical care prior to activation of the allocation framework.



*The appropriate time period for reassessment should depend on the patient's specific circumstances; suggested at least every 24 hours, but there may be circumstances that warrant more rapid reassessment or a longer trial of critical care prior to reassessment

+Significant deterioration should be determined based on a combination of clinical judgment and (p)SOFA score.

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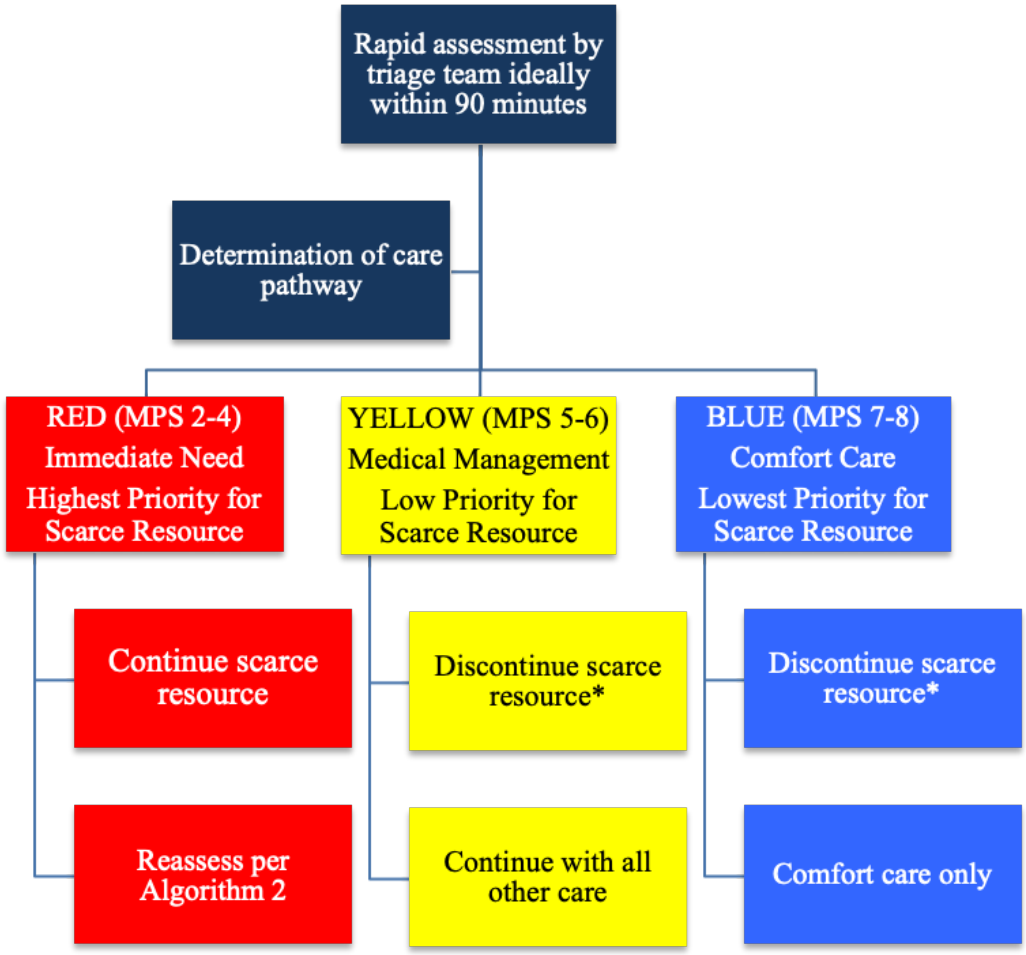
Algorithm 3: Rapid reassessment of patients emergently triaged to critical care after initiation of allocation framework

This algorithm applies to situations in which patients do not receive a triage score before being triaged to critical care (e.g., patients intubated in the field, patients emergently intubated in the emergency department, patients with no information in the electronic medical record, trauma patients stabilized in the ED prior to ability to triage).



*While providing intensive symptom management and psychosocial support.

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