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Ethics in disaster, mass casualty care, and critical care

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ABSTRACT

The primary ethical principle guiding general medical practice is autonomy. However, in mass casualty (MASCAL) or disaster scenarios, the principles of beneficence and justice become of foremost concern. Despite multiple reviews, publications, and training courses available to prepare for a MASCAL incident, a minority of physicians and healthcare providers are abreast of these. In this review, we describe several MASCAL scenarios and their associated ethical, moral, and medicolegal quandaries in attempts to curb potential future misadventures.

INTRODUCTION

A mass casualty (MASCAL) incident is one that exceeds the available resources at a facility or healthcare system. It generally requires a paradigm shift from individual to population-based ethics. Providers must transition from offering the highest standard of care to each individual patient to focusing on measures that will provide the greatest benefit for the community at large. Creating a framework for management of these ensures for fewer failures in disaster response. The American College of Surgeons (ACS) acknowledges that surgeons often play an important role in disaster response and encourages all surgeons "to obtain an appropriate level of education and training in the unique principles and practice of disaster and mass casualty management, and to serve as role models in this field."[1] Furthermore, the ACS has created a Disaster Management and Emergency Preparedness (DMEP) course to address this.

When hospitals experience a "surge" in volume or a disaster scenario, (SOC) may change. Generally, providers function with conventional SOC, in which optimal care and resources are provided to the individual patient. Contingency standards are those in which care to the individual patient is adjusted but remains equivalent. Crisis SOC require major adjustments of care. The Institute of Medicine has published on Crisis Standards of Care and that there is a change in fundamental healthcare operations and levels of care provided to patients in these situations.[2] It occurs over a sustained period of time, is made necessary by an either pervasive or catastrophic event, and is generally acknowledged formally by a governmental entity.[3]

In preparation for a MASCAL scenario, it is imperative to consider ethical principles. Usually, physician decision-making is guided by three tenets: ethical, moral, and legal ideologies. These are defined below.[4]

- **Ethics**: Values and reasoning that direct an individual's behavior in his or her activities, particularly used in reference to professional conduct. In the 1979 textbook entitled *Principles of Biomedical Ethics*, Beauchamp and Childress defined the four guiding principles of medical ethics: autonomy, beneficence, non-maleficence, and justice.
- **Morals**: Standards of behaviors and beliefs concerning what is and is not acceptable, particularly used in reference to personal conduct. Morals are often based on an authority, such as the Bible.
- **Standard of care (legal)**: The care that an ordinary, prudent professional with the same training and experience in good standing in the same or similar community would practice under given conditions. An "average" standard does not apply because in that case at least half of any group of practitioners would not qualify.
- **Standard of care (medical)**: Appropriate treatment based on scientific evidence or widely accepted guidelines and collaboration between medical and/or psychological professionals involved in the treatment of a given condition. Note that pro bono (free) or emergency bystander care (ie, "good Samaritan care") is not exempt from these requirements.

Furthermore, medical ethics are governed by four principles: beneficence, non-maleficence, autonomy, and justice.[5]

- **Autonomy**: Each patient has the right to make their own decisions based on their own beliefs and values.
- **Beneficence**: We have a duty to refrain from maltreatment, minimize harm, and promote good toward patients.
- **Justice**: All patients have a right to be treated fairly and equally by others.
- **Non-maleficence**: Obligation of a physician not to harm the patient.

The primary ethical principle in standard medical practice is autonomy. However, in MASCAL or disaster scenarios, the principles of beneficence and justice become of foremost concern. Despite multiple reviews, publications, and training courses available to prepare for a MASCAL, a minority of physicians and healthcare providers are abreast of these. In this review, we describe several MASCAL scenarios and their associated ethical, moral, and medicolegal quandaries in attempts to curb potential future misadventures.[6]

Inherent in the discussion of ethics in MASCAL care is the decision to prepare for a potential disaster. We suggest that trauma surgeons and healthcare

teams invest in disaster management preparation to mitigate casualties and operational issues as an ethical imperative.

Scenario 1: Personal risk/responsibility

Review of the last several years of the severe acute respiratory syndrome coronavirus 2 (COVID-19) pandemic has raised issues that warrant discussion. Hospitals and healthcare systems continue to be fraught with the repercussions of the pandemic, including staffing and supply chain shortages. Healthcare providers were faced with challenging decisions, and many felt the burden of moral distress in caring for patients.

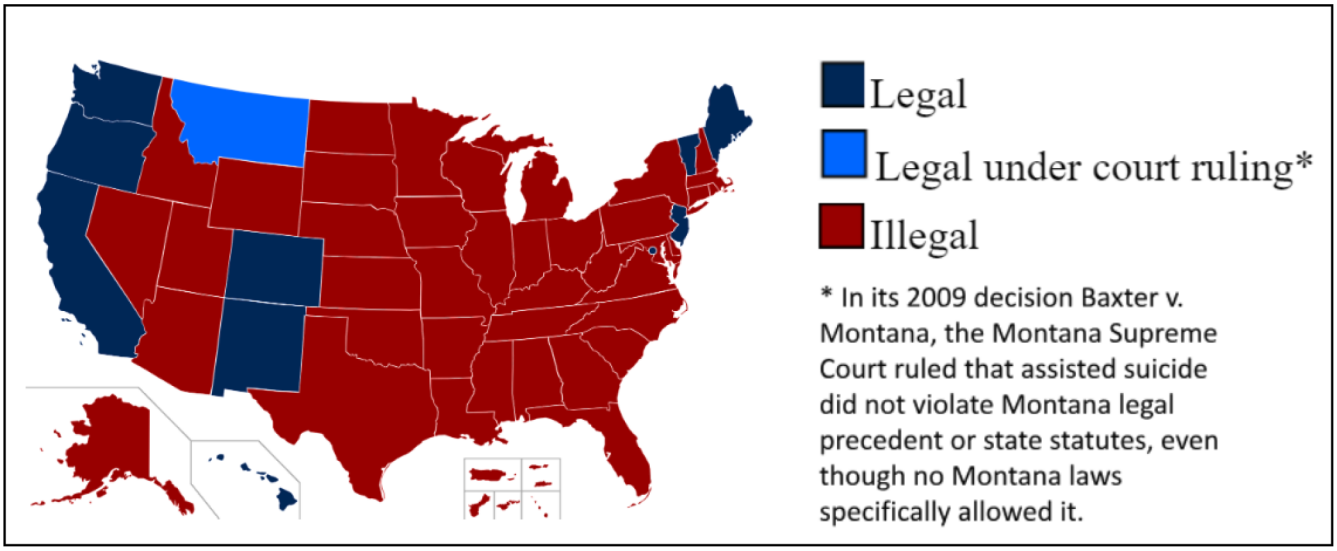
As it relates to ethics, several questions arose. To what extent does the physician's duty to treat outweigh that individual's autonomy. What protections are afforded to older physicians, those with comorbidities, or with ailing family members. Overwhelmingly, physicians chose to rise to the occasion and contribute in times of need. However, several professional organizations created management recommendations for professional conduct during the pandemic that, in retrospect, are arguable. The American Medical Association published in its Code of Ethics that physicians are obliged to provide urgent medical care during disasters, "even in the face of greater than usual risks to the physicians' safety, health, or life." The American Heart Association recommended that medical personnel should NOT delay chest compressions nor defibrillation to don appropriate personal protective equipment regardless of the COVID-19 status of the patient. Physicians, however, are a finite resource, and the care of future patients is commensurate with the protection of physician well-being. This bodes the question, how does one balance the ideas of beneficence and non-maleficence to the patient with physician autonomy and safety? One must consider preservation of healthcare providers as a limited resource in contrast to patient well-being. Interestingly, the ACS itself does not comment on the obligation to report for duty, particularly if it puts the life of the surgeon at risk, although the DMEP course emphasizes that the health and safety of disaster responders must be prioritized despite a potential delay in clinical care.

Scenario 2: Obligations of healthcare providers to risk personal injury/illness

Increasing gun violence has necessitated a need for field hemorrhage control, as evidenced by the ACS "Stop the Bleed" campaign. Surgeons are well-equipped to provide care and hemorrhage control, whether in the hospital or in the field. To what end does professional obligation warrant intervention? The conflict between patient autonomy and provider well-being became particularly evident during the 2017 MASCAL shooting in Las Vegas, during which time medical personnel were present as members of the audience. Basic life support tenets require one to ensure scene safety prior to administering medical intervention. For the case in which a shooting terminates but a perpetrator has not been secured, should surgeons or providers commence medical treatment, as advised by several professional societies, or is personal safety paramount? This applies to any active shooter scenario. Several national organizations hold varying opinions. The Federal Emergency Management Agency allows physicians to conduct a personal risk assessment at the time of inquiry. The Joint Commission advocates for personal survival. The Department of Homeland Security and the American Medical Association (AMA) advocate for a patient-first strategy, and the American College of Emergency Physicians as well as the American Association for Emergency Medicine make no recommendations. This is a point of personal imperative and one in which algorithms have not been developed to balance the safety of medical personnel with patient beneficence.

Scenario 3: Cyberattacks as a novel disaster scenario

Medical care has become increasingly dependent on technology, with hospital systems worldwide utilizing electronic record databases leaving facilities vulnerable to exposure. Cybersecurity has become such a priority that a National Cybersecurity Strategy was released in early 2023.[7] Despite encryption, data security, and high-level information management, health systems remain a target for bad actors who wish to capitalize



Source: Wikimedia Commons. A Map of the Legality of Physician Assisted Suicide in the United States. April 12, 2018. Accessed January 22, 2023. https://commons.wikimedia.org/wiki/File:Legality_of_Assisted_Suicide_in_the_US.svg.

Figure 1 State laws regarding medical aid in dying (MAiD) in the USA. Illustration of the state-specific regulations with respect to MAiD. Legal to undergo MAiD in nine states and the DC. The Montana Supreme Court ruled in favor of MAiD despite no state law to that effect. It is illegal in the remaining states.

Box 1 Indications for palliative care consult in UC San Diego SICU[21 22]

⇒ Family request.
⇒ Futility considered or declared by Surgical Intensive Care Unit (SICU) team.
⇒ Family disagreement with team, advance directive, or each other lasting >7 days.
⇒ Death expected during same SICU stay.
⇒ SICU stay >1 month.
⇒ A diagnosis with median survival <6 months or patient with metastatic malignancy.
⇒ >3 SICU admissions during same hospitalization.
⇒ Glasgow Coma Scale score <8 for >1 week in a patient >75 years old.
⇒ Glasgow Outcome Scale score <3 (ie, persistent vegetative state).
⇒ Multisystem organ failure >3 systems.

Source: Doucet J, et al. UC San Diego Trauma Handbook. May 10, 2021. https://surgery.ucsd.edu/_files/trauma-burn/ucsd-trauma-handbook-5-1.pdf [accessed January 22, 2023].

from access to protected health information, leading to substantial financial costs and personal loss. These agents may be well-funded and supported by foreign governments. The average expense incurred per cyberattack approximates $11 million for a hospital system, with a total annual expenditure of $25 billion, nationally.[8] Breach of cybersecurity by malicious software may cripple a healthcare facility, debilitating an organization's technical infrastructure and prevent the entity from accessing its own data. These breaches may disrupt time-sensitive care and routine hospital function for weeks to months. In 2022 alone, 707 infractions were noted in healthcare, with an estimated 52 million patient files compromised.

In the past, cyberattacks have required hospitals to halt certain operations and divert care to surrounding facilities or systems. Prevention of widespread collapse of infrastructure requires integration of private and public sector agents. Health systems must adequately maintain backup hardware systems, with ability to resume partial function as able. Cybersecurity incident response plans should be implemented to ensure healthcare facilities are able to manage ransomware attacks. The Cybersecurity and Infrastructure Security Agency suggests mechanisms to mitigate personal and institutional risks.[7 9]

Scenario 4: Transfusion restrictions and "futility" in medical disaster response

A contemporary resurgence of blood transfusion for those in hemorrhagic shock has resulted in increased demands for blood donation and maintained blood products as scarce resources. In times of crises, this already precious resource becomes even more scarce, requiring rationing. This was somewhat apparent during the COVID-19 pandemic, and shortages must be considered during a disaster or MASCAL. In fact, the American Red Cross declared its first ever blood crisis in early 2022. With critical shortages, transfusion limits should be considered.

The term "futility" or perhaps better called "non-beneficial care" is often clinically invoked when a seriously ill patient has a low likelihood of a meaningful recovery. What defines recovery and what the goals of care vary from patient to patient. The dictionary definition of the term "futile" is "incapable of producing any result; ineffective; useless; not successful". Doctors cannot "force" patients to follow their advice, but equally, doctors can refuse to administer treatment that they think is not in the patient's best interest. The care which will not improve symptoms or restore health may be non-beneficial. There is no obligation to "do everything" if that will not restore the patient's health or reduce symptoms. Hospitals may have futility or non-beneficial care protocols when patients have reached a stage where aggressive care is thought futile or non-beneficial by their physician.

Futility must be rapidly assessed in the setting of a disaster. Several questions arise when considering blood transfusions. Which patients warrant transfusion? Certainly, those considered expectant or moribund would be excluded. Does injury pattern matter? Do physicians/surgeons or government officials warrant increased resources over others? Is advanced age considered a contraindication for transfusion despite injury pattern, and does this same standard apply to clinicians and government officials? Emerging literature may support increased transfusion limits, although this must be taken into context with the ongoing inadequacy of resources that occurs during a MASCAL.

In addition to transfusion, we should consider the utility of aggressive interventions such as resuscitative thoracotomy (RT). In routine care, RT has been recommended for use in penetrating trauma patients who arrest within 15 min of presentation to the hospital and rarely in blunt trauma patients. RT may additionally be considered for educational purposes or in the event of organ procurement. In times of disaster, however, surgeon and physical resources remain critical. Recommendations outlined in the Joint Trauma System Clinical Practice Guideline reject the use of RT during a multiple or MASCAL event, in attempts to preserve these resources. The case for RT use in MASCAL is perhaps negligible, if an indication exists at all, but one could consider specific scenarios in which a patient may benefit, including a young patient with a singular penetrating wound to the chest who appears to be in periarrest, or a patient with exsanguinating extremity or junctional hemorrhage who also remains in periarrest. If RT is undertaken in the multiple or MASCAL setting, there should be a clear and rapid determination of potential survivability with immediate termination of efforts if return of spontaneous circulation is not achieved. There should also be a strict limitation on the use of blood products in these patients, again with immediate termination of transfusion unless rapid return of a perfusing rhythm is obtained and the patient is felt to have survivable injuries. In any event, the decision to perform RT should not be taken lightly, and performing this under disaster conditions may lead to demise of other salvageable patients.

Scenario 5: Palliative care versus euthanasia

Palliative care in its simplest definition focuses on the prevention and relief of suffering. Palliative care medicine uses an interdisciplinary team approach to focus on patients with life-limiting medical conditions with high symptom burden. The palliative care approach is a holistic one that focuses on the patient's experience. Among the difficulties of a MASCAL scenario is the management of patients who may qualify for palliation. In addition to those expectant from the results of acute injury, several vulnerable populations may fall within the scope of symptomatic treatment. These include patients with pre-existing hospice or palliative care requirements, patients previously dependent on the healthcare system (extracorporeal life support (ECLS) or ventilator-dependent), prior life-threatening or terminal conditions, and those with advanced disease housed in long-term

Box 2 UC San Diego guide for talking with SICU families

- ⇒ Communicate regularly, using family meetings prophylactically. Beware of family members who are non-participants. Involve the staff, especially the nurse.
- ⇒ Listen, listen, listen—for family understanding, affect, and how they make decisions. Establish trust. Acknowledge emotions. Avoid jargon. Lecture less and let the family guide you to further topics.
- ⇒ Provide psychosocial and spiritual support. Offer hope, not false hope. Bad news is a shock. Use support from the team. Culture and religion play key roles.
- ⇒ Inform family regularly about goals of care and how we know if goals are met.
- ⇒ Convey uncertainty; avoid false certainty.
- ⇒ Describe treatment as a "therapeutic time trial" aimed at specific short-term goals.
- ⇒ "Care" always continues, but treatments may be withdrawn or withheld. (We never "withdraw care", we stop non-beneficial treatments.)
- ⇒ Do not ask the family to decide about each diagnostic or treatment option; ask them what the patient would want and allow them to concur with a plan consistent with patient values.

Source: Doucet J, et al. UC San Diego Trauma Handbook. May 10, 2021. https://surgery.ucsd.edu/_files/trauma-burn/ucsd-trauma-handbook-5-1.pdf [accessed January 22, 2023].

facilities. Management of this vulnerable group falls secondary to the management of salvageable patients; however, these individuals should ideally be cohorted to an alternate area of care and, resources permitting, be provided therapies for symptom relief.

Although some consider palliation a luxury during a MASCAL, others argue that it is a necessity. To account for this group, a MASCAL plan should consider an alternate care area in which palliation may occur. Success is dependent on the availability of personnel and additional resources including medications. Often, providers may exercise skills outside of their general area of expertise but should have some knowledge of analgesics and anxiolytic dosing and titration. Pain and shortness of breath are two of the most likely symptoms requiring intervention. Efforts to provide palliation have been described in several prior events, including Hurricane Katrina and the earthquake affecting Haiti. In Haiti, proponents of palliative care advocated for cohorting of patients and administration of analgesics, and that not doing so would cause undue suffering. Dissidents argued that this would expend valuable resources.[10]

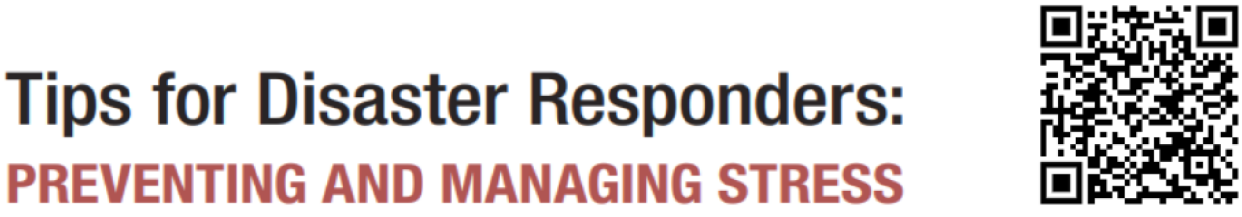
In Hurricane Katrina, providers with knowledge of analgesics and anxiolytics were assigned to a group of expectant patients. Retrospective review of this care brought to light several questions. In fact, whistleblowers argued that homicide rather than palliation had occurred in some instances. Clinicians were then charged with homicide in a historic precedent. Prosecutors argued that supratherapeutic doses of analgesics or anxiolytics were used in providing euthanasia to patients, resulting in their deaths. Although the charges were expunged, this highlighted an important conversation about the limits of practice within a MASCAL.[11] Palliation is appropriate insofar as it provides comfort but does not hasten death.[12] What those providers considered appropriate management came to be viewed as euthanasia by reviewers. The idea of criminalization of physician decisions during a MASCAL will inevitably result in reluctance of participation and may have dire results. However, patient protections must continue despite altered SOC, and prosecution may ensue if malpractice is suspected. However, transgressions like this may be assuaged with preparation and planning.

Medical aid in dying (MAiD)

On the other hand, in some US states (figure 1) and Canada, physicians and other providers are permitted to prescribe a lethal dose of medication as MAiD to patients if their suffering cannot be relieved under conditions that they consider acceptable. These scenarios often seemingly represent a direct conflict between the ethical principles of patient autonomy and provider beneficence, but both of these principles can be honored with appropriate evaluation, counseling, and performance of MAiD in select cases. Informed consent must be obtained requiring that one understands their medical diagnosis and prognosis, and available treatments including palliative care. However, how to evaluate suffering in social, mental, and physical domains is unclear, and clear guidelines on the medical determination of suffering are lacking.[13] In many hospitals, intensivists and palliative care physicians have refused to offer or participate in MAiD for intensive care unit (ICU) patients due to this uncertainty as well as the potential adverse medicolegal actions from participating in MAiD. Most MAiD procedures occur at the patient's home and not in ICU or hospital settings.

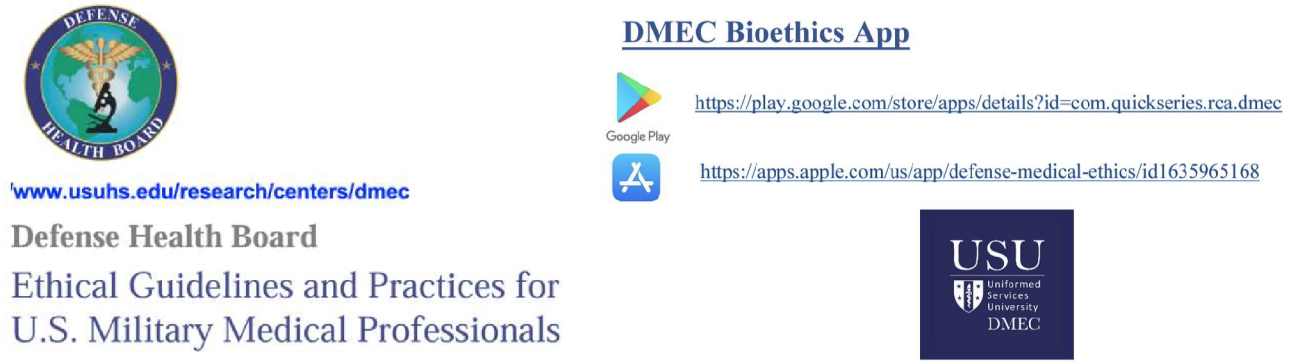
Scenario 6: Ethical dilemmas in the ICU

There is overlap between ethical issues in the ICU and concepts previously discussed, including futility, palliation, and withdrawal of life-sustaining measures. The following is a departure from discussion about acute crises to a broader consideration



Source: Substance Abuse and Mental Health Services Administration. Disaster Preparedness, Response, and Recovery. August 19, 2022. Accessed November 10, 2023. https://www.samhsa.gov/disaster-preparedness.

Figure 2 Mental health resources for disaster responders. Depiction of Substance Abuse and Mental Health Services Administration mental health resource guide for disaster responders. The QR code provides a link to the phone application which provides pre-deployment, in-the-field, post-deployment support. It can be downloaded prior to a disaster in the event of limited internet services.



Source: Defense health Board. Ethical Guidelines and Practices for U.S. Military Medical Professionals. March 3, 2015. Accessed November 20, 2023. https://www.health.mil/Reference-Center/Reports/2015/03/03/Ethical-Guidelines-and-Practices-for-US-Military-Medical-Professionals

Figure 3 Disaster and bioethics resources for US military medical professionals. This resource provides specific recommendations for military medical professionals to assist in balancing obligations as military officials with their obligations to patients.

of ethics in the long-term intensive care setting. The topic of providing palliative care to patients requiring ICU-level care is a timely topic that has engaged the interest of both the medical profession and the lay public. Recent data suggest that more than 20% of Americans who die each year (approximately 500,000 people annually) die in, or shortly after, ICU care. In addition, there are approximately 100,000 ICU survivors each year who suffer chronic and severe symptoms. The role of palliative care in the ICU is not only to provide symptom management at life's end but also to help align the patient's goals and values with the clinical realities and to provide guidance and support for both patients and families. Most would agree that patients and families often desire both active treatment and concurrent relief of symptoms.[14 15]

Palliative care teams have begun to participate as integrated team members or in consultative roles in the ICU. Both the integrated and the consultative functions have advantages and disadvantages and should not be considered mutually exclusive. The consultative role provided by a palliative care service can provide expert skills using an interdisciplinary team, and provide continuity and transitions during and after ICU discharge. This type of model, however, may require increases in staffing. Indications for consultation are delineated in box 1. Integrated models assign the palliative care role to members of the critical care team, which may require fewer staff, although some additional training may be desirable.

One of the most significant barriers to providing palliative care in the ICU is the lack of understanding among patients, families, and clinicians as to the role of palliative care in the ICU. Too often, the perception of palliative care is a narrow one that views palliative care as synonymous with hospice care or "giving up." When palliative care is seen as only providing end-of-life care and comfort care for patients, opportunities are missed to improve communication, clarify goals of care, and improve symptoms and quality of life. An important ICU protocol is to document the ICU patient's "Goals of Care" or "Advanced Care Planning" note if the anticipated length of stay is greater than 1 day. This is a reimbursable activity under Medicare and so there is no reasonable reason that this cannot be accomplished for any significant ICU patient stay. Careful review and documentation of any advanced directives or practitioner order for life-sustaining treatment should also be completed.

Effective communication with patients, their families, and care providers is an essential component of ethical and palliative care in the ICU. The ICU can be a very scary place for patients and families. Many families have never experienced a critically ill family member, and the initial interaction with their seriously ill and injured family member who appears entangled in tubes, catheters, and machines can be unsettling. This communication is a key critical care skill. Box 2 provides a guide on how to best navigate these conversations. In the case of true medical futility, in which the patient and/or family does not want to adopt a palliative approach to care, these protocols will require palliative and ethics consultations and possibly legal action prior to adoption of comfort-based care only.

Social and spiritual support should be offered to patients and families and is part of the care and communication bundle previously mentioned. Bereavement is a normal process, and it is imperative for clinicians to recognize that adoption of comfort care measures by the patient and family may take some time, with all of the Kubler Ross stages of grief needing to be processed. Chaplains and community spiritual leaders can help the patient and family come to terms with their grief.

Do not resuscitate (DNR) orders/withdrawal of life-sustaining treatments

Despite the arsenal of advanced, life-prolonging therapies commonly available in the ICU, patients or their surrogate decision makers may decide that such therapies are no longer concordant with their goals of care. Patients have the right to refuse therapy or request that it be discontinued, and that neither of these is akin to physician aid in dying or euthanasia. However, how patients live and die with or without such interventions can vary, and this point must be discussed. It should be pointed out that the ultimate goal of a patient and family conference is not only to establish a DNR status or to obtain a withdrawal of aggressive care but to define the patient's values and goals and align this in a shared mental model with the care team.

Brain death

Although death by neurological criteria has been accepted as death medically for over 40 years, legal variance exists throughout the states, especially regarding religious accommodations and in pregnancy. The need to obtain informed consent from surrogate decision makers prior to brain death testing remains uncertain, and there is no guideline regarding obtaining ancillary testing despite recent efforts. Not all religions and cultures accept brain death, which was largely developed as a concept to allow for organ donation. A recent survey of

adult and pediatric neurologists found that at least half have requests from family members to extend medical care to those who have met criteria for the diagnosis of brain death. In states such as California, the patient's body becomes the property of the next-of-kin at brain death, and hospitals must continue life support measures for a period of "reasonable accommodation" for the family. New Jersey is the only state that allows declaration of death solely on cardiorespiratory criteria if personal religious beliefs do not recognize brain death. There, a patient may not be declared dead legally even after meeting brain death criteria medically. These differences in state law are well illustrated in the 2013 Jahi McMath case, a patient who was ruled to be legally dead in California but was treated as living under New Jersey law and was kept on life support measures there for years. Since the McMath case, lawsuits have arisen where families have sued to have the brain dead patient moved to New Jersey or other countries, such as Guatemala, where brain death criteria are not as strictly observed.[16] As it relates to a MASCAL incident, the maintenance of brain dead patients for the sake of organ procurement would be ill-advised and contingent on the resources available to ensure success of transplantation. A true MASCAL incident would lead one to provide care for salvageable patients who do not require such heroic measures. Preparation and algorithms for management can be drafted in pre-emption of MASCAL events, to ensure appropriate and equitable care, should such an event arise.

Rationing care/ethical decision-making in rationing of care/disasters

The allocation of ventilators, ICU bed allocation, and ECLS becomes critical in the event of long-term crises. The recent COVID-19 pandemic severely stressed critical care units in many parts of the world and led to concerns that ventilators may need to be rationed given resource limitations. Many jurisdictions and systems developed protocols for the fair distribution of limited ventilator resources.[17] However, actual withdrawal of ventilator support in otherwise salvageable patients appears to have been rare in the US pandemic. Rationing of medical care in the situation of widespread shortage in resource limitations is using the principle of Justice on a broader scale than the individual patient. Physicians should not make hasty justice-based determinations at the bedside unless a system-wide protocol has been adopted and medical and public health authorities have determined that such rationing is necessary to maintain a population-based standard of care. This decision should be created by a team of individuals who are not participating in direct clinical care and have used an objective measure of resource allocation, as was conducted during the COVID-19 pandemic with the utilization of the Sequential Organ Failure Assessment (SOFA) score for ventilator appropriation.

Scenario 7: post-event actions and wellness

In the midst of COVID-19, healthcare workers were championed as heroes. However, this is a misnomer, forgetting the struggles that workers endured and continue to endure. Rates of physician burnout vary widely in the literature, ranging up to 80%. Unfortunately, there is no singular definition of "burnout" and no accepted screening mechanism. Perhaps a better characterization is moral distress, which can ensue after any one of the following situations[18]:

- Circumstances that contradict one's moral beliefs and expectations.
- Having to make decisions that affect the survival of others or where all options will lead to a negative outcome.
- An act of commission (performing something that goes against one's beliefs).
- An act of omission (failing to do something in line with one's beliefs).
- Experiencing betrayal by trusted others.

A review presented at the American Association for the Surgery of Trauma meeting in 2017 by leaders experienced with MASCAL events noted significant physical and emotional stress that came from caring for patients during crisis scenarios. In instances in which the hospital staff were separated from their families and unable to return home, care providers faced additional stressors. The need to maintain a fresh team to assume clinical duties meant forcing staff to sleep, eat, and rest even when they may be motivated to keep working. This fact held true for team leaders, including the panelists themselves, who found it difficult but necessary to designate and adhere to personal time limits and to delegate leadership responsibilities to others. Finally, ensuring the health and safety of personnel meant starting infectious disease testing and prophylaxis as necessary as needle sticks and exposure to blood and body fluids were ubiquitous. The group encouraged early psychological counseling for all staff who participated in caring for patients during the mass casualty incident (MCI).[19]

The Substance Abuse and Mental Health Services Administration, which is run through the Department of Health and Human Services, provides resources to survivors and healthcare professionals (figure 2). They provide an around-the-clock technical assistance center. The website offers support for responders dealing with disasters and includes techniques about sleep hygiene, eating habits, avoidance of substance use, and encouragement of physical activity, humor, and spiritual practice. Mindfulness techniques are also available. Compassion fatigue is also discussed. Recommendations are provided on how and when to return to work. An application available to healthcare workers is available on their website with guidance on when to seek further professional assistance.[20]

The Department of Defense Medical Ethics Center also provides multiple resources including a downloadable pdf of Ethical Guidelines and Practices and a smartphone app with access to publications, guidelines, videos, and other resources (figure 3).

Leaders should encourage rest and recovery among healthcare providers and offer resources to maintain the health and well-being of their staff.

CONCLUSIONS

MASCAL and ICU scenarios are intense medical settings where patients receive life-saving, complex care. However, even with the best medical efforts, situations will arise when ethical, moral, and medicolegal decisions must be made. High complexity critical and MASCAL care plans must include provisions to deal with these ethical challenges and adopt effective decision-making as required.

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