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Ethics in the Time of Coronavirus: Recommendations in the COVID-19 Pandemic

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> *"When I entered this profession, I did it because it was particularly difficult for a workman's son like myself. And then I had to see people die. I saw that I could never get hardened to it."*
>
> Dr Rieux in Camus' *The Plague*[1]

Healthcare organizations across the nation are responding rapidly to the numerous medical, social, and legal challenges forced by the COVID-19 pandemic, in many cases altering what is considered standard of care in order to provide the best care to the most patients in the defining public health crisis of our time.[2] The urgency with which our practice decisions and organizational protocols are being reconfigured necessarily infuses considerable uncertainty into patient care and leads to sizeable variation in treatment. Being instructed to "just do the best you can," while understandable in the current situation, is a suboptimal alternative to carefully considered and systematically enacted guidelines for action.[3]

An ethically sound framework has been outlined in the Hastings Center's 3-tiered approach to a pandemic; namely, the duty to plan, the duty to safeguard, and the duty to guide.[4] Furthermore, the landmarks proposed by the American College of Surgeons of transparency, advocacy, and commitment to support all those affected directly or indirectly clarify a way forward.[5] With these concepts in mind, we examine and provide recommendations for several of the most pressing ethical challenges of the novel coronavirus (COVID-19) pandemic.

METHODS

COVID-19 is an infectious disease pandemic that is spreading more rapidly than our healthcare resources can handle. The ethical issues of the pandemic, therefore, represent an intersection of the ethical problems of a contagious and highly morbid disease with the ethical concepts widely used in directing allocation of scarce resources. We use the HIV/AIDS pandemic (which is a well-studied pandemic for which an ethical consensus gradually formed by the 1990s[6]) and the ethical reasoning for organ allocation in solid organ transplantation (which is also readily accepted and well considered) as the reference points for our ethical exploration. For each ethical issue, we summarize the accepted standard in the relevant comparisons using the above model; examine the similarities or differences with the COVID-19 with these points of reference; and present our recommendations for ethical action.

Ethical analysis

As communities around the globe combat the COVID-19 pandemic, many challenging ethical, social, and legal questions have arisen. These ethical dilemmas are forcing decision makers, and all of society, to re-examine the fundamental assumptions and foundations of our current healthcare system.[7]

1. What are the professional responsibilities of healthcare workers in treating patients with this virus, given the demonstrated high risk of being infected as they care for them? Do providers have the right to refuse to treat a COVID-19 positive patient, or do they have a professional duty to treat the patient, no matter how high the personal risk?

During the HIV/AIDS pandemic, this issue was thoroughly analyzed. Some used virtue-based ethical theories to justify expecting physicians to practice in spite of personal risk.[8] Others countered that physicians should not be expected to expose themselves to risk that approaches suicide.[9] Physicians do sign up for some degree of risk, evident in our training and affirmed in our codes of professional conduct.[10] Is there a reasonable limit to these assumed risks?

There is some degree of inherent risk when providing care to any patient. There was little ethical support for refusing to treat HIV patients during the pandemic solely based on the diagnosis. By comparison, we do have reliable ways to protect ourselves from contracting this

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disease as we care for COVID-19-positive patients. Proper personal protective gear does an acceptable job of preventing exposure and limiting spread.[11] However, reports are flooding the media documenting that many institutions do not have enough personal protective gear to appropriately protect their staff and healthcare professionals, which changes the ethical dynamic. We must keep in mind that certain populations (such as those over 60 years of age), providers with underlying chronic conditions, and pregnant caregivers are more vulnerable to the effects of COVID-19.[12] These clinicians represent vulnerable subsets among us who are risking more by caring for patients when they lack appropriate protective gear.

Recommendation: When appropriate protective gear is available, we consider it a professional clinician's ethical duty to provide care for COVID-19 positive patients. We also recommend that the duty to care for COVID-19 positive patients also applies to trainees. By entering the learned profession of medicine, residents should understand that they thereby assume the binding ethical obligations of all its members. Given the risk of spread without appropriate protective equipment, we recommend that each provider use individual judgment to assess their degree of personal risk when caring for a COVID-19 positive patient. As more data emerge regarding relevant risks, new standards should be assessed and implemented. All healthcare workers must be thoroughly trained in universal precautions.

2. How is prioritizing patient confidentiality being challenged by the COVID-19 pandemic? How should we report positive cases to the public and to hospital staff members?

A consensus formed during the HIV pandemic that physicians have an ethical duty to maintain patient confidentiality, but that duty may be overridden by the need to protect others at risk by association.[13] During the HIV/AIDS pandemic, a change in public perception emerged about the importance of reporting as increasingly compelling data became available regarding the benefits of early prevention and treatment. As these benefits became more apparent, support for clarifying exceptions to protecting patient confidentiality increased in order to warn third parties with exposure to the disease.[14] Although physicians have an ethical duty to protect patient confidentiality, this responsibility can be superseded by a duty to protect other members of society known to be at risk.

Maintaining the privacy of COVID-19 positive patients becomes an ethical dilemma when doing so causes harm to other members of society. The key difference between the current COVID-19 pandemic and the HIV/AIDS pandemic is that no prejudicial stigma is associated with a positive COVID-19 test and, therefore, breaking the seal of confidentiality is not as problematic as it was in the early days of HIV/AIDS. This difference should make decisions to inform the public of COVID-19 positive patients less ethically challenging.

Recommendation: We encourage hospitals to warn its providers of the COVID-19 positive status of patients in order to protect the already challenged staff. Furthermore, we recommend that COVID-19 positive patients who can disclose their condition to those contacts they may have put at risk should be given the opportunity to inform these contacts. Ultimately, given the high morbidity and mortality rates and the degree of contagiousness of COVID-19, confidentiality must be limited by public health interests. It is also crucial that physicians and hospital systems report positive cases to public agencies so that data can be accurately tabulated and analyzed in order to inform treatment decisions and resource allocation.

3. Which members of the population should be screened and tested for COVID-19 when available tests are limited?

Screening and testing represent an ethical dilemma as long as the number of tests is limited and the sensitivity and specificity of the tests are suboptimal. Who should be screened and, of those screened, who should be screened first? Ethical discussion about screening for HIV evolved as the screening tests improved and the stigma associated with the disease diminished.[15] Initially, high-risk populations were screened first; there was no medical justification to screen everyone. As HIV became more normalized and early detection offered survival benefits, screening became more prevalent.

While HIV screening practices can be extrapolated to the COVID-19 pandemic to some extent, there are clear differences. We do not fully understand how COVID-19 spreads, leaving us without a good sense of who will most benefit from screening. Additionally, the number of available tests is still limited. To obtain more reliable results, we will need to test each person multiple times.

Recommendation: Patients with symptoms should be tested because early diagnosis and supportive treatment are in their best interest and because most of the spread is thought to result from actively symptomatic patients. As more tests and tests with better detection rates become available, we also recommend screening asymptomatic healthcare workers in order to avoid inadvertent infection of the already high-risk patients with whom they interact. Finally, as tests evolve and become widely available, we recommend universal screening to limit exposure by quarantining potentially infected individuals.

4. How do we allocate scarce resources such as ICU beds, ventilators, and certain medication?

Much attention is being given to the allocation of scarce resources during the present pandemic. Numerous approaches and guidelines are now available to hospitals and providers. It is helpful to divide decisions about the allocation of scarce resources into 2 distinct categories: allocation of clearly finite resources and allocation of nonfinite resources.

Solid organ transplantation offers insight into and guidelines for decisions about the allocation of finite resources.[16] Utilitarian reasoning focuses allocation decisions on ensuring optimal conditions for maximizing the survival of the organ itself and thereby, the recipient. These guidelines are grounded by quantifiable outcomes. The social worth and the completeness of the recipient's life do not enter the equation because organs are allocated according to a strict protocol. This decision-making process is universally accepted and is regulated by tight oversight.[17]

Nonfinite scarce resources, on the other hand, are resources that may be in short supply, but that can be resupplied (at times by redirecting funds from other, competing public interests such as education).[18] Once we commit to transplanting an organ into a patient, we do not then retrieve it when a more "deserving" patient presents. However, with the allocation of nonfinite scarce resources, a ventilator, for example, may be assigned to, but later removed from, a patient depending on the relative demand at any given time.[19]

These important distinctions between the allocation of clearly finite resources such as organs and the allocation of nonfinite scarce resources that may be reassigned, present discrete ethical challenges. Several strategies have been suggested as ethical justification for the allocation of nonfinite scarce resources: eg treating all patients equally, giving preference to the worst-off patients, using a first come first served format, maximizing total benefits, or rewarding social usefulness.[20] During the COVID-19 pandemic, resources of relative scarcity include ICU beds, ventilators, and access to testing.[21] Washington University in St Louis, the University of Pittsburgh, and the State of New York have all developed models for assigning scores to patients, based on age and comorbidities, to direct the allocation of these scarce resources to individual patients.

An additional feature of the current pandemic is society's collective support for conserving scarce resources. Although generally laudable, the attempt to conserve may become misguided. We have seen providers who, stemming from a well-intentioned attempt to save scarce resources, often overlook the practice guidelines that normally inform our medical decisions. For example, for a patient without active cardiac disease, whose hemoglobin is greater than 7g/dL, no blood transfusion is indicated whether we are trying to conserve resources or not. Guidelines that recommend not transfusing blood above this threshold are based on well-structured studies and show significant increase in morbidity and mortality when not followed. And yet, in our experience, clinicians refer to conservation of resources rather than to beneficence as their reason for current practice.

Recommendation: First, we recommend that treatment decisions for COVID-19 and non-COVID-19 patients be evaluated first on medical merit before considering matters of resource allocation. Following already established standards of care should conserve resources. Second, we recommend that the adopted protocol for allocating nonfinite scarce resources should be followed systematically, with full transparency and with creative efforts to mitigate the loss experienced by patients to whom limited resources are not directed. Third, we recommend that protocols be regularly reviewed in order to accommodate the needed changes in response to our growing knowledge of COVID-19.

5. What ethical concerns are created by relaxing FDA rules associated with research and by relaxing criteria for certification into the medical field?

During the HIV/AIDS pandemic, government authorities were pressured to grant exceptions to the strict regulations for human-subject research.[22-24] Advocates argued that potential treatment agents should be exempt from the established requirements in order to possibly save more lives. FDA regulations were eventually modified to fast track drugs that showed promise in treating HIV.

As the COVID-19 pandemic unfolds, researchers are working fervently to identify potential treatments and vaccines against the disease under relaxed regulations and at times with permission to forego established steps in the process. Similarly, state and local requirements for credentialing healthcare providers have been curtailed to increase the number of providers entering the workforce. Not surprisingly, unusual alternate remedies have claimed the lives of patients based on information disseminated through nonscientific sources.

Recommendation: We recommend that no therapy or prevention should be promoted that has not been approved by the FDA. Although the process of such approval may be expedited based on critical need, a process grounded in solid science must be maintained. Similarly, although credentialing guidelines may shift with

growing need, we recommend that the process must maintain public trust. Transparency is paramount.

6. How should we address end-of-life issues, including do not resuscitate orders and goals of care discussions?

Data from the HIV/AIDS pandemic revealed that only 50% of patients had discussed end-of-life care with their physician.[25] This observation along with the initially exceedingly high mortality rate during the HIV/AIDS pandemic contributed to what has now become standard practice, namely, addressing goals of care with patients early in their hospitalization and public advocacy for the expectation that everyone, regardless of age or health status, should have written advance directives. Multiple scientific articles have shown the benefit to our system, as well as to individual patients and families, when goals of care are addressed by the medical team on admission to the ICU and then frequently revisited.[26]

The concept of shared decision making is particularly relevant to goals of care discussion. In shared decision making, treatment plans are developed to which patients contribute their subjective values and goals and providers contribute their professional and scientific expertise.[27] Hence, in shared decision making, only interventions for which the expected outcome aligns with the patient's personal values and preferences are implemented. However strongly an outcome may be desired by a patient, if that outcome is extremely unlikely to be achieved, we call that intervention medically nonbeneficial. As with observing guidelines of transfusion thresholds established as standards of care, and in order to abide by the ethical obligation of nonmaleficence, medically nonbeneficial treatments should not be offered to patients, whether we are in the midst of a pandemic or not.

Much attention has recently been directed to whether we should perform CPR on COVID-19 positive patients.[28] This is a question that touches upon the concepts of futility, resource allocation, and provider safety. Current data suggest that at least 20% of patients intubated secondary to COVID-19 may recover, thereby making CPR a non-uniformly futile act.[29]

Recommendation: We recommend a stepwise approach to the question of end-of life issues in COVID-19 patients. First, in line with standard of care, one must address the likely medical benefit of resuscitation to the patient and offer CPR only if the particular clinical scenario suggests a medically defined benefit. Second, providers should be required to perform CPR only if adequate protective equipment is available to them; however, if protective gear is available, then the duty to perform CPR should strictly be dictated by its likely medical benefit. Finally, the question of allocation of resources should be considered separately from the CPR question and should follow the algorithms outlined above for allocation of scarce nonfinite resources in general. When CPR is deemed to be medically nonbeneficial, this decision must be promptly communicated to the patient and the patient's family. Palliative measures should be offered without delay.

DISCUSSION

The COVID-19 pandemic is swiftly reshaping our medical and societal priorities. Some ethical obligations stand unchanged. Our commitment to transparency, to advocacy, and to honoring human life remains deeply rooted. We must be vigilant in our ongoing reconsideration of prioritizing the one or the many, individual patient autonomy or public health. Our triaging decisions should change in correspondence with the dynamic availability of scarce resources. As our social distancing eventually diminishes, our ability to honor individual patient preferences should inversely expand. Frequent reassessment of our methods of triage is therefore a must, and newly learned lessons from our caregivers on the front lines should be incorporated into our evolving methodology.

The US has long embraced an ethos of individual liberty epitomized by New Hampshire's state motto "Live free or die." But as our society has changed suddenly from the most extreme version of patient-directed medicine to a society that assigns over-riding priority to the health of the community, the truth about our public health is more complex than we had previously been willing to admit. Exponential population growth coupled with social interdependence and unlimited movements, along with our significantly increased longevity and access to life-prolonging technologies, have fundamentally redefined the limits of any one person's claims on our society's means. As providers, any intervention that we perform on a patient affects not just that patient but every other potential patient as well. It is no longer "Live free or die"; rather, it is "Live free with consequences to the lives of others." As the pandemic rages and we struggle to keep up, perhaps we may find some instruction on how to care for our shared wealth of individual and societal health.

CONCLUSIONS

The COVID-19 pandemic is filled with uncertainty and uncharted territory. Despite being in the early stages of the medical, societal, and legal challenges of this crisis, lessons from both the HIV/AIDS pandemic and the models for allocation of scarce resources practiced most widely in organ transplantation may inform our ethical approach to

the most pressing challenges of our time. The obligations of transparency, advocacy, and response to change define our stepwise recommendations.

Author Contributions

Study conception and design: Kramer, Kopar
Acquisition of data: Kramer, Brown, Kopar
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Drafting of manuscript: Kramer, Brown, Kopar
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