

COVID-19 Ethics Framework

Provincial COVID-19 Ethics Committee

Revised March 8, 2021

Table of Contents

Introduction.....	1
Section 1 – Ethics Framework	2
Patient-Centered Ethics.....	2
Pandemic Ethics.....	2
Principle of Utility	2
Equity	3
Definition of Best Outcome	3
Summary of the Ethics Framework	3
Section 2: System and Process Issues.....	3
Provincial Committee	3
Interdisciplinary Clinical Triage Team (ICTT)	4
Section 3: Guidelines	4
Annotated Bibliography.....	7

List of Tables

Table 1: Priority Status of Patients Admitted to the ICU After Being Assessed.....	4
Table 2: Level of Triage, Trigger, Role of Provincial Committee and Role of ICTT	5

List of Figures

Figure 1: Flow Chart for Allocating Ventilators During the COVID-19 Pandemic.....	6
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Introduction

Many ethical issues have arisen because of the COVID-19 pandemic. For example, there are ethical issues regarding voluntary self-isolation, social distancing, testing, and resource allocation. This document focusses on the specific ethical issue of rationing invasive mechanical ventilation in the unlikely event that there is a surge in cases of infection that overwhelms the health care system. There are three sections: Section 1 presents the Ethics Framework, Section 2 discusses some essential System and Process issues, and Section 3 provides Guidelines for making triage and rationing decisions. It is important to note that this document applies to all patients admitted to the ICU and/or receiving invasive ventilation, not only COVID-19 patients during a pandemic.

Ethics Framework: The primary objective of this document is to save as many lives as possible. This approach requires adopting a public health ethic that focusses on producing good outcomes rather than meeting the needs of individual patients, i.e., promoting the principle of utility. This means that patients with the highest probability of surviving to hospital discharge will be prioritized over other patients who might benefit from treatment but are not expected to achieve that outcome.

Provincial Oversight Committee: Rationing life sustaining interventions in this way is ethically justifiable if, and only if, it is absolutely necessary; in other words, it must be a last resort. It would be unacceptable if, because of a lack of ventilators, a patient in one region of New Brunswick was denied this potentially life saving treatment but there was an available ventilator elsewhere in the province. Therefore, this document establishes a Provincial Oversight Committee that has real-time awareness of ventilator availability throughout the province. This group will have the ability to move patients and/or equipment around the province, it will be responsible for monitoring hospital level rationing decisions for equity, and it will be tasked with regularly re-evaluating the rationing guidelines in this constantly evolving pandemic.

Interdisciplinary Clinical Triage Team (ICTT): If these extreme rationing decisions must be made, they could cause considerable distress among front line health care professionals. Healthcare Administration has an ethical duty to mitigate such emotional trauma and to assume responsibility for these tragic decisions. Therefore, this document establishes Interdisciplinary Clinical Triage Teams (ICTT) in each facility. These teams will be responsible for making the rationing decisions. The treating health care professionals will not be involved in rationing and will focus on providing care within the parameters of their fiduciary duties.

Triage Guidelines: The guideline section of this document should be supplemented by clinical judgment. COVID-19 is a novel virus and, at the time of writing this document, there is a paucity of high-quality scientific evidence. Tempered with clinical judgment, the ICTT has the mandate to triage each patient as appropriately as possible; these guidelines are one of their tools.

Section 1 – Ethics Framework

The COVID-19 Pandemic is expected to create many difficult ethical issues. Of concern within the hospital setting is the ethics of resource allocation. It is possible (although very unlikely) that there will be a surge in the demand for services that is so large that the system will progressively become overrun. One of the most dreaded COVID-19 rationing issues is the allocation of invasive mechanical ventilation (i.e., ventilators).

Currently the regional health authorities have approximately 180 ventilators, and additional ventilators are available in stockpile. Providing ventilator treatment to a patient is complex; the patient is typically sedated and requires careful monitoring in an intensive care unit (ICU). A shortage of trained staff, ICU space, or ventilators could result in the need to make rationing decisions. If it is necessary to ration ventilators, because of an absolute shortage, the patient-centered approach to clinical ethics might not be enough.

Patient-Centered Ethics

Under normal circumstances the healthcare professional and patient relationship is rooted in the best-interest principle; the technical term is a “fiduciary relationship.” The healthcare professional is in a position of power and the patient is considered vulnerable. Therefore, the healthcare professional has the legal and ethical duty to act in the patient’s best interest. For example, most emergency departments will prioritize a critically ill patient over patients who are not as sick. The implicit ethical principle is that the critically ill patient has the greatest need and, therefore, expedited treatment is in their best interest.

Pandemic Ethics

If the objective in a pandemic is to save as many lives as possible, then the patient-centered approach could be counter productive in many situations. When there are limited resources (or an absolute shortage), prioritizing “individual needs” over the “greater good” may not result in saving as many lives as possible. In fact, this approach may contribute to the worst possible outcome, i.e., a situation where resources are provided to patients that are not expected to survive at the expense of those expected to have better outcomes.

Principle of Utility

If the objective is to save as many lives as possible, then it will be necessary to prioritize patients expected to have the best outcome and not necessarily those with the greatest need. This means that it will be necessary to determine: 1) those patients who are so ill that they will probably die even if they receive treatment, 2) those patients who will likely survive even without treatment, and 3) those patients who might survive, but their survival is dependent on receiving treatment. The most consistent interpretation of the principle of utility is to try and save as many people in the third group as possible.

The principle of utility emphasizes the concept of instrumental value. In other words, decisions must attempt to create the most productive outcomes possible. In some circumstances this might include prioritizing certain groups that have higher instrumental value. For example, some

approaches might provide preferential access to health care providers if there is a staff shortage and they are needed to further combat COVID-19.

Equity

The principle of equity refers to the fair distribution of benefits and burdens. Put another way, we should not discriminate against anyone (or any group) simply to facilitate the objective of achieving the greatest utility. Section 15 of the *Canadian Charter of Rights and Freedoms* states:

15. (1) Every individual is equal before and under the law and has the right to the equal protection and equal benefit of the law without discrimination and, in particular, without discrimination based on race, national or ethnic origin, colour, religion, sex, age or mental or physical disability.

Definition of Best Outcome

The best outcome is defined as survival to hospital discharge. In other words, patients with the highest probability of living to be discharged from the hospital will be prioritized. Within the context of allocating ventilators, the rate limiting factor is that there could be more patients requiring invasive ventilation than there are ventilators. Therefore, the goal must be to successfully ameliorate the rate limiting factor, i.e., effectively liberate patients from ventilator support and discharge them from the hospital. Other factors such as age, quality adjusted life years, and stage in the life cycle will not be considered.

Summary of the Ethics Framework

In summary, the objective is to save as many lives as possible. This means that resources will be directed to those who would likely die without treatment, but with treatment they have a good chance of surviving to hospital discharge. In pursuing this objective, we must not discriminate against people based on their race, national or ethnic origin, colour, religion, sex, age or disability.

Section 2: System and Process Issues

Provincial Committee

The Provincial Committee will be responsible for ensuring that the guidelines regarding ventilator rationing decisions are being applied consistently across the province and that the criteria for making these decisions are impartial and up-to-date. This committee should be composed of individuals with the medical, scientific and ethical expertise to competently examine the existing state of knowledge on COVID-19. Furthermore, this committee must have real time knowledge of resource availability in the province.

The Provincial Committee will be responsible for activating this triage protocol and is accountable for the resulting decisions, particularly for the decisions not to admit someone to intensive care, not to provide invasive ventilation, and the decision to withdraw potentially beneficial life sustaining treatment.

Interdisciplinary Clinical Triage Team (ICTT)

The ICTT must have the clinical knowledge to review each case and use the relevant screening tools. This team should consist of a critical care physician, critical care nurse, a respiratory therapist, an ethicist, and someone from hospital administration responsible for allocating beds. Every facility providing invasive ventilation should have at least one ICTT. This team is responsible for communicating with the patient and family.

The ICTT will be responsible for implementing the different triage levels at the direction of the Provincial Committee. It will also be responsible for communicating with the clinical team, the most responsible physician, and the patient/family. The ICTT will address any issues regarding the patient's code status, advanced directive, disagreement with the decision to withhold or withdraw treatment, or any other form of disagreement with the care team or family.

Section 3: Guidelines

There are two steps to the guidelines: assessment and prioritization of ICU patients, and the levels of triage. Table 1 depicts the priority status of patients admitted to the ICU after being assessed and Table 2 illustrates the process for activating the three different Levels of Triage. Figure 1 illustrates the entire process.

Table 1: Priority Status of Patients Admitted to the ICU After Being Assessed

2a. Blue	2b. Yellow	2c. Red
High Probability of in hospital mortality.	Moderate chance of living to be discharged from the hospital.	The best chance of living to be discharged from the hospital.
Given the current lack of knowledge regarding COVID-19, the Provincial Committee, and representatives from the various ICTTs should begin work studying the best way to screen and access patients admitted to the ICU. The objective is to find scientifically valid and ethically justifiable methods for determining the above-mentioned classifications. This should include clinical judgment and a critical appraisal of the various severity scales and scoring systems used in the ICU for predicting mortality.		

Table 2: Level of Triage, Trigger, Role of Provincial Committee and Role of ICTT

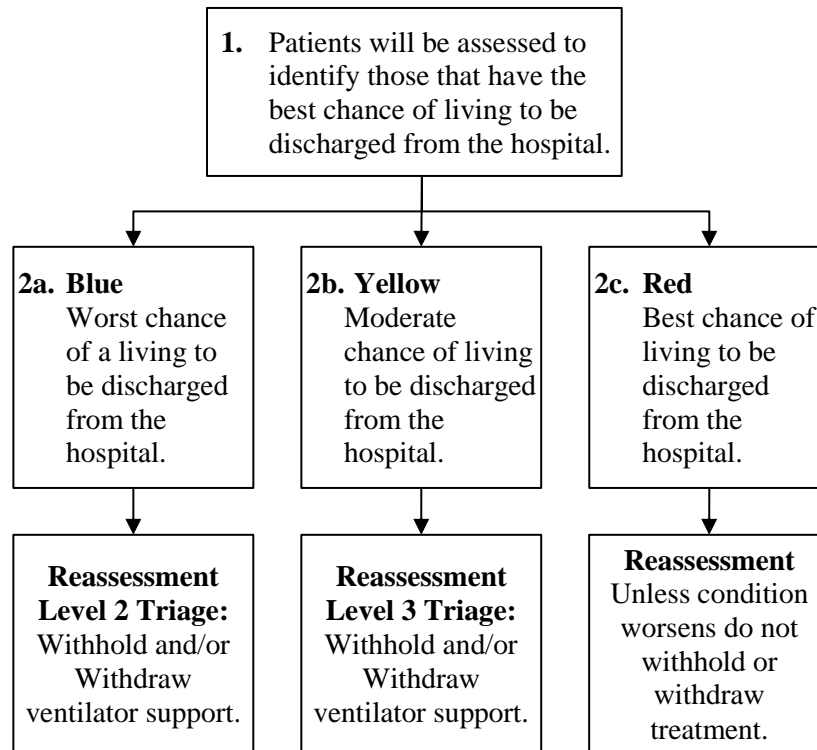
Level of Triage	Trigger	Provincial Committee	ICTT
Level 1	Some, but not all, facilities at 100% capacity	Activate Level 1 Triage	Identify staff, resources, or patients to be moved and coordinate the move.
Level 2	All facilities at 100%	Determine that every ventilator in the province is in use. Activate Level 2 Triage	Identify patients that have the lowest likelihood of living to be discharged from hospital and do not admit to the ICU. If this persists for more than 24 hrs withdraw treatment from patients that have the lowest likelihood of living to be discharged from the hospital. Withhold or Withdraw Treatment from Blue patients (2a).
Level 3	All facilities at 100% for prolonged period.	Activate Level 3 Triage	Repeat Level 2 process but include Yellow patients (2b). Withhold or Withdraw Treatment from Blue patients (2a) and Yellow patients (2b)

Level 1 Triage would be activated when the Provincial Committee detects that they must transfer patients to available resource or have resources transferred to patients. This will occur when the demand for ventilators in some facilities is approaching 100% but other locations are operating at less than 100%.

Level 2 Triage would be activated only after Level 1 has been completely implemented and the Provincial Committee determines that every ventilator in the province is in use. If Yellow patients (2b) or Red patients (2c) require ventilator treatment and Level 1 has been fully implemented, then the Provincial Committee will instruct the local ICTT to stop admitting Blue patients (2a) to the ICU. If the need for this level of triage persists for more than 24 hrs then Blue patients (2a) receiving ventilator support will have it withdrawn.

Level 3 Triage will be activated only after Level 2 has been completely implemented and the Provincial Committee has determined that every ventilator in the province is in use. At this point, if Red patients (2c) require ventilator treatment the Provincial Committee will instruct the ICTT to restrict admission to the ICU of Blue Patients (2a) and Yellow patients (2b). If this level of triage persists for more than 24 hrs then then Yellow patients (2b) receiving ventilator support will have it withdrawn.

Figure 1: Flow Chart for Allocating Ventilators During the COVID-19 Pandemic



2a.b.c. Blue, Yellow and Red Patients

- These are patients admitted to the ICU before this triage protocol is activated or when a Level One triage has been activated by the Provincial Committee.
- All three groups of patients will be provided with the highest standard of care possible given the reality of limited resources.
- The ICTT will be responsible for classifying these patients appropriately based on each patient's probability of living to be discharged from the hospital. The ICTT will also make all decisions about withholding or withdrawing treatment given the Level of Triage that has been activated.

Annotated Bibliography

1. Arentz M, et al. Characteristics and outcomes of 21 critically ill patients with COVID-19 in Washington State. JAMA March 19, 2020
 - This study looked at 21 patients admitted to the ICU in a large Washington hospital. 71% eventually required invasive ventilation. Of all 21 patients: 52.4% died, 38% were chronically critically ill, and 9.5% survived to discharge. Of those receiving invasive mechanical ventilation: 67% died, 24% chronically critically ill, and 9.5% survived to discharge from hospital.
2. America's bioethicists: Government must use federal powers to fight Covid-19. Hastings Center News.
<https://www.thehastingscenter.org/news/americas-bioethicists-government-must-use-federal-powers-to-fight-Covid-19/>
 - This is a March 24, 2020 letter to Congress signed by 1400 bioethicists in the US. They petition Congress to use federal powers to do five things: 1) ensure the manufacture and distribution of needed supplies, 2) commit to payment for COVID-19 care and treatment, 3) provide sick leave for all, 4) protect the vulnerable, and 5) build a comprehensive, trustworthy communication strategy. The following quotation summarizes the sentiments of this petition: "As bioethicists, we have the expertise to offer triage guidance, but our first and immediate obligation is to prevent or dramatically reduce the need for such decisions."
3. Baker M and Fink S. At the Top of the Covid-19 Curve, How Do Hospitals Decide Who Gets Treatment? New York Times, March 31, 2020.
<https://www.nytimes.com/2020/03/31/us/coronavirus-covid-triage-rationing-ventilators.html>
 - This article reviews the triage plans of ten US States: Arizona, Kansas, Louisiana, Maryland, Michigan, New York, Pennsylvania, Tennessee, Utah, and Washington State. The article explains that for most states the first level of triage is to decline admission to the ICU to patients with conditions that are likely to result in near-immediate death even with treatment. Then they focus on short-term and long-term survivability. Some use the Sequential Organ Failure Assessment (SOFA) and others use other scoring systems. The idea is to further triage patients by pre-existing health conditions that might limit survivability. It explains common color coding systems, e.g., red, orange and yellow. Finally, it discusses withdrawing ventilator support from patients who are getting worse despite being on a ventilator.
4. Berlinger N., et al., Ethical framework for health care institutions responding to Novel Coronavirous SARS-CoV-2 (COVID-19) Guidelines for institutional ethics services responding to COVID-19 Managing Uncertainty, Safeguarding Communities, Guiding Practice. The Hastings Centre, March 16, 2020.
<https://www.thehastingscenter.org/ethicalframeworkcovid19/>

- The focus of this paper is on shifting the foundation of health care delivery from a patient centered perspective to a public health/utilitarian perspective. The public health perspective focusses on delivering care in a manner that produces the best outcomes for the greatest number of patients. The paper provides suggestions for making ethical decisions in a pandemic situation. [Everyone is encouraged to read this paper.]
5. Cheney C. 4 Ethical dilemmas for healthcare organizations during the COVID-19 pandemic. March 18, 2020.
<https://www.healthleadersmedia.com/clinical-care/4-ethical-dilemmas-healthcare-organizations-during-covid-19-pandemic>
- The four issues this paper looks at are: 1) treatment, 2) testing, 3) healthcare workers, and 4) vaccines. Like most documents, it advocates for the principle of utility in a pandemic situation.
6. Emanuel E., Phillips J., and Persad G. How the Coronavirus may force doctors to decide who can live and who dies. New York Times.
<https://www.nytimes.com/2020/03/12/opinion/coronavirus-hospital-shortage.html>
- This article starts from the premise that shortages of medical staff and equipment during the COVID-19 pandemic is not theoretical. They argue that the guiding principle should be to save as many people as possible by prioritizing those that are the most likely to benefit. Next, priority should be given to first responders. Finally, if a treatment or vaccine becomes available, they should be provided to those at the highest risk and in the most need. They explicitly reject the first-come-first-served model.
7. Ferreira FL, Bota DP, Bross A, Melot C, Vincent JL. Special evaluation of the SOFA score to predict outcome in critically ill patients. JAMA. 2001;286:1754-1758.
- This article studies different permutations of SOFA scores. It looks at the initial score, the changes in score over 48 hours, the average score and the maximum score. In general, an initial SOFA score up to 9 predicted mortality in less than 33% and a score over 11 predicted a mortality rate of 95%. Likewise, regardless of the initial SOFA score, if the score increased over 48 hours the mortality rate increased to 50%, if it stayed the same the mortality rate was between 27%-35%, and if it improved the mortality rate was less than 27%. The relevant quotations are provided:
 - “As expected, the initial SOFA score was significantly related to vital status. An initial SOFA score up to 9 predicted a mortality of less than 33% while an initial SOFA score of greater than 11 predicted a mortality rate of 95%.”
 - “Regardless of initial score, the mortality rate was 50% or higher when the score increased, 27%-35% when it did not change, and less than 27% when it decreased.”

8. Hick JL, Hanfling D, Wynia MK, Pavia AT. Duty to plan: health care, crisis standards of care, and Novel Coronavirus SARS-CoV-2. Perspectives, National Academy of Medicine, March 5, 2020.

<https://nam.edu/duty-to-plan-health-care-crisis-standards-of-care-and-novel-coronavirus-sars-cov-2/>

- This article focusses on the Crisis Standards of Care (CSC), which were developed after the experience with SARS, H1N1, Ebola, and Hurricane Maria. The idea is to maximize emergency preparedness in hopes that they system will be utilized so efficiently that tragic decisions are minimized. I quote from the paper:

“The primary aim of CSC planning is not to provide a process to make triage decisions such as withholding or reallocating potentially lifesaving resources from one person or group to another who might benefit more. The aim is to have processes in place to manage resources well enough to avoid those situations.” (p.3)

This article provides suggestions for optimizing staff, PPE, outpatient services, hospital services, alternate systems of care, etc.

9. Jones D. History in a crisis – Lessons for Covid-19. NEJM, March 24, 2020.

<https://www.nejm.org/doi/full/10.1056/NEJMp2004361>

- This article is a brief survey of epidemics in recent history. The objective is to identify common errors that should be avoided in Covid-19. The most important insight of this paper is that epidemics “reveal what really matters to a population and whom they truly value.” The author asks why China shut down its economy because of Covid but many more people die every day from smoking. A common feature of most epidemics is the desire to assign responsibility, e.g., China for Covid, immorality for HIV, promiscuity for syphilis, etc. Once blame is laid then the government feels justified in using the states powers of coercion. However, many public health interventions fail to live up to their promise; nevertheless, they are adhered to as a matter of faith. Finally, epidemics frequently claim the lives of front-line professionals.

10. Kipnis K. Triage and Ethics. AMA Journal of Ethics, Virtual Mentor, 2002;4(1)

<https://journalofethics.ama-assn.org/article/triage-and-ethics/2002-01>

- This article summarizes some of the fundamental premises of triage and emergency medicine. In a surge, there could be a pressing need to prioritize prospective patients intending to provide service to those that have the best chance of recovering. The implication is that some patients will not be able to get the service they need because of resource limitations. The disaster triage system categorizes patients into three groups: 1) those that would likely die even with treatment, 2) those that will get better, even without treatment, and 3) those that can get better with treatment but would probably die without it. The triage system tries to identify the third group.

11. Minna Stern, A., and Markel H. Pandemics: The ethics of mandatory and voluntary interventions. The Hastings Center, Bioethics Briefings.
<https://www.thehastingscenter.org/briefingbook/pandemic/>
- Since we do not yet have a vaccine or antiviral medication for COVID-19, the primary public health strategies focus on nonpharmaceutical interventions (NPI), e.g., isolation, quarantine, social distancing, etc. This paper asks two specific questions: 1) “Can communities apply these interventions in a manner that maximizes the common good and minimizes negative social and economic consequences? And 2) “What are the ethical implications of these interventions, particularly when it comes to balancing individual liberties with the need to protect the public’s health?” The paper cautions against the natural tendency for governments to enact mandatory NPI as the severity of a pandemic increases. They argue that NPI should be voluntary as much as possible, evidence based, minimally restrictive, non-discriminatory, and proportionate.
12. Ontario Health. Clinical Triage Protocol for Major Surge in COVID Pandemic. March 28, 2020
- The purpose of this triage protocol is to minimize mortality and morbidity for the overall population, as opposed to the individual patient. The ethical principles are: utility, proportionality, and fairness. There are three triage levels, which get stricter as demand on the system rises. Patient’s must meet one of the inclusion criteria (i.e., need invasive ventilatory support or hypotension) and none of the exclusion criteria in order to be admitted to an Intensive Care Unit. There are 13 categories of exclusion criteria that attempt to exclude those who are likely to die from their critical illness and those who are likely to die soon even if they recover from the critical illness (i.e., within a few months). In a Level 1 triage scenario the objective is to exclude patients that have >80% predicted mortality, Level 2 excludes patients that have >50% predicted mortality and Level 3 excludes those that have >30% predicted mortality.
13. Pan American Health Organization. Ethics guidance on issues raised by the novel coronavirus disease (COVID-19) pandemic
<https://www.paho.org/en/documents/ethics-guidance-issues-raised-novel-coronavirus-disease-covid-19-pandemic>
- This document surveys different ethical issues during a pandemic situation. For example, it talks about the importance of data collection and how this is different than research; it identifies the key ethical principles of equity, responsibility, solidarity and transparency; it covers the duty to communicate with the public during a pandemic; duties to conduct research; and duties of international collaboration during a pandemic.
14. Phua J, et al., Intensive case management of corona virus disease 2019 (COVID-2019): challenges and recommendations. Lancet Respir Med 2020 Published Online April 6, 2020
[https://doi.org/10.1016/S2213-2600\(20\)30161-2](https://doi.org/10.1016/S2213-2600(20)30161-2)
<https://www.thelancet.com/action/showPdf?pii=S2213-2600%2820%2930161-2>

- This paper presents the epidemiology and clinical features of COVID-19, discusses diagnosis in the ICU, and managing respiratory failure. It provides specific recommendations for improving the infrastructure, capacity and staffing of ICUs. It also provides a helpful definition of critical and severe disease in the ICU.
15. Poston JT, Patel BK, Davis AM. Management of critical ill adults with COVID-19. JAMA March 26, 2020
- These guidelines were written by 36 experts in 12 countries. Although there is limited evidence this group extrapolated from what is known regarding MERS and SARS. They provide guidelines for: infection control, hemodynamic support, ventilatory support, and therapy.
16. Powder J. Too many COVID-19 patients, too few ventilators: An ethical framework to guide hospitals.
<https://www.jhsph.edu/covid-19/articles/too-many-covid-19-patients-too-few-ventilators-an-ethical-framework-to-guide-hospitals.html>
- This framework strives to save the most lives, preserve the most life years, prioritize evidence-based decisions, and show compassion to patients that don't receive the ventilator, i.e., non-recipients.
17. Rapsang AG, Shyam DC. Scoring systems in the intensive care unit: A compendium. Indian J Crit Care Med. 2014 Apr;18(4):220-8
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4033855/>
- This article surveys the major ICU severity scales developed over the past 30+ years. The scales reviewed include: APACHE II, SAPS II, MODS, SOFA, LODS, MPM II, ODIN, TRIOS, and GCS. The SOFA score attempts to quantify the severity of illness based on the degree of dysfunction in six organs. These scores are correlated with the probability of dying in the ICU and dying in the hospital. Although it measure multi-organ failure, it does provide some means of calculating the probability of a patient living to be discharged from the hospital.
18. Rosenbaum L. Facing Covid-19 in Italy — Ethics, Logistics, and Therapeutics on the Epidemic's Front Line. NEJM April 2020.
<https://www.nejm.org/doi/full/10.1056/NEJMp2005492>
- This article interviews three Italian physicians about resource allocation in Northern Italy. They explained that in the absence of a clear plan for rationing ventilators, rationing decisions were made “silently” and based primarily on “age.” The reports that participants in a stakeholder consultation in Maryland prioritized the greatest chance of short-term survival as the most important consideration; followed by the best chance of long-term survival because of the absence of coexisting conditions. In addition to these ethical principles they explained the need for three process principles as well: 1) treating clinicians should not make rationing decisions, a team is needed, 2) the team needs state level

oversight to guard against inappropriate inequities, and 3) the rationing criteria should be regularly re-evaluated.

19. Rothstein M. Flattening the curve, then what? Hastings Centre, Bioethics Forum Essay.

<https://www.thehastingscenter.org/flattening-the-curve-then-what/>

- This article argues that the “flattening the curve” strategy is, in reality, a short-term necessity resulting from systemic public health failures in the past. The article uses the experience of Taiwan as an example. I quote:

“By comparison, Taiwan overreacted to the SARS epidemic in 2003, and placed 132,000 people in home quarantine, which identified only 2 cases and caused widespread panic. Determined not to repeat the same mistake, the government rejected indiscriminate quarantine. Instead, it aggressively screened travelers, and promptly instituted widespread testing, contact tracing, and isolation. As a result, despite being 81 miles from mainland China, Taiwan only had 195 cases and 2 deaths from COVID-19 as of March 23, 2020.” On March 26, 2020 Taiwan had 252 cases, 2 deaths and a rate of 11 cases/million population. Canada has about 104/million and the US has 248/million.

20. Surviving Sepsis Campaign: Guidelines on the management of critically ill adults with Coronavirus Disease 2019 (COVID-19)

<https://link.springer.com/content/pdf/10.1007/s00134-020-06022-5.pdf>

- These are recommendations from 36 experts from 12 countries about managing COVID-19 patients in the ICU. It investigates 54 different recommendations as well as the level of evidence for each recommendation.

21. The Commonwealth of Massachusetts Executive Office of Health and Human Services: Crisis Standards of Care planning guidance for the COVID-19 Pandemic

https://d279m997dpfwgl.cloudfront.net/wp/2020/04/CSC_April-7_2020.pdf

- This document presents a process for making triage decisions and explains the underlying ethical principles. Patients that would receive critical care services under normal circumstances are assessed to determine whether they are at risk of imminent death. Those at imminent risk are referred to symptom management and psychosocial support (i.e., palliative care), those not at risk are assessed by the Triage Officer. The Triage Officer, using SOFA, determines if the patient is a high priority, intermediate priority or low priority for critical care services. Patients are then reassessed regularly. The ethical principles in this document are to maximize overall benefit by saving lives but more importantly by maximizing the number of life years saved. Examples of near imminent risk of death are cardiac arrest unresponsive to appropriate ACLS, overwhelming traumatic injuries, massive intracranial bleeds, and intractable shock. (Note: this is a good document except for the explicit age discrimination.)

22. Truog R, Mitchell C, Daley G. The toughest triage – allocating ventilators in a pandemic. The toughest triage – Allocating ventilators in a pandemic

https://www.nejm.org/doi/full/10.1056/NEJMp2005689?query=recirc_curatedRelated_article

- This article looks at the dilemma of withdrawing ventilatory support from patients during the COVID-19 pandemic. Typically, the withdrawing of life-sustaining treatment would happen in collaboration with the patient (and/or family) or it might occur in circumstances where continued treatment is considered futile. During this pandemic, however, the decision to withdraw treatment might be made because of limited resources, which is basically unprecedented in North America. In this situation the authors argue that a triage committee be responsible for making this decision and communicating it to the family. It is imperative that front-line professionals be supported in maintaining their fiduciary duties to their patients.
23. UNESCO International Bioethics Committee and UNESCO World Committee on the Ethics of Scientific Knowledge and Technology. Statement on COVID-19: Ethical considerations from a global perspective (2020).
<https://unesdoc.unesco.org/ark:/48223/pf0000373115>
- This is a joint statement that affirms their respective positions on 11 ethical issues. Of particular note is statement #4, which refers to vulnerable individuals. It cautions that a pandemic might exacerbate the vulnerability of already vulnerable people.
24. U.S. Public Health Service Commissioned Corps: Optimizing ventilator use during COVID-19 Pandemic
<https://www.hhs.gov/sites/default/files/optimizing-ventilator-use-during-covid19-pandemic.pdf>
- This document does not explicitly consider the rationing question but provides practical advice for maximizing ventilator use. There is a consensus statement against using a ventilator to treat more than one patient at a time; however, if this has to be done, it provides instructions.
25. Venkatapuram, S. COVID-19 and the global ethics freefall. Hastings Bioethics Forum, Pandemic Planning.
<https://www.thehastingscenter.org/covid-19-and-the-global-ethics-freefall/>
- This article contrasts the Utilitarian approach to managing a pandemic, such as the methods used by China in Wuhan, with a social justice perspective. To quote the author: “Public health ethics is not primarily or foremostly about the conflict between the interests of the few versus the greater good. It is about how we organize our society, how we relate to one another, to ensure that every individual is able to pursue a good life.” The practical aspect of this paper is the focus on public discourse. Decisions should be transparent and accountable.
26. Vitalité Health Network. Guide to adult critical care triage: SARS-CoV-2 (COVID-19). March 27, 2020

- This document outlines a three-step triage process: 1) eligibility criteria for admission to the ICU, 2) exclusion criteria, and 3) an assessment with the Sequential Organ Failure Assessment tool (SOFA). If a patient meets one of the eligibility criteria and none of the exclusion criteria, the SOFA assessment is used to determine the patient's priority level for critical care: Green means that the patient does not need critical care; Red means the patient had a SOFA score < 7 and is the highest priority for critical care, Yellow is for patients with a SOFA score between 8-11 and is an intermediate priority for critical care, and Blue is the category of patients with a SOFA score > 11 and represents patients who should not be admitted to the ICU or should be discharged if the need arises. The following three tables summarize the Eligibility Criteria, the Exclusion Criteria, and the Priority Levels.