



National Ethics Advisory Committee

Kāhui Matatika o te Motu

Ethical Framework for Resource Allocation in Times of Scarcity

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National Ethics Advisory Committee – Kāhui Matatika o te Motu

The National Ethics Advisory Committee – Kāhui Matatika o te Motu (NEAC) is an independent advisor to the Minister of Health (the Minister). The members of NEAC are appointed by the Minister and bring expertise in ethics, health and disability research, health service provision and leadership, public health, epidemiology, law, Māori health and consumer advocacy.

NEAC published *Getting Through Together: Ethical values for a pandemic* in 2007 (NEAC 2007). *Ethical Framework for Resource Allocation in Times of Scarcity* builds on the work of *Getting Through Together*.

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Introduction

As a result of COVID-19, we are experiencing an increasing demand on our health care system and its resources. Clinical professionals and public health officials are likely to have to make decisions about situations they have never experienced before. This framework has been developed to help clinicians, nurses, hospital administrators and public health policy makers optimise distribution and prioritisation of vital resources in times of scarcity.

NEAC emphasises that the document is best used to identify important ethical principles, highlight ethical tensions and support robust decision-making; it is not a set of rules and does not consider all potentially scarce resources or all potential decisions.

NEAC note that this document is in response to the COVID-19 pandemic. NEAC intend to develop this document to be more generally applicable to pandemics as part of their wider work program, which involves updating '*Getting Through Together: Ethical values for a pandemic*'.

Key features of the COVID-19 virus

The virus can spread from person to person through:

- close contact with an infectious person (including in the 48 hours before that infectious person exhibits symptoms of their infection)
- contact with droplets from an infected person's cough or sneeze
- touching objects or surfaces (such as doorknobs or tables) that have droplets from an infected person and then touching your mouth or face (Australian Government Department of Health 2020).

COVID-19 is a new disease, so there is no existing population immunity. This means that COVID-19 can spread widely and quickly.

Symptoms of COVID-19 can range from mild illness to acute respiratory distress syndrome (ARDS). Some people will recover easily, others may get very sick very quickly, and some will die.

Te Tiriti o Waitangi

Te Tiriti o Waitangi / the Treaty of Waitangi (Te Tiriti) is one of the major sources of New Zealand's constitution. Te Tiriti creates a basis for civil government encompassing all New Zealanders. The Government continues to respond to its obligations to honour Te Tiriti. Te Tiriti mandates that Māori participate in equal partnership with the Government. To this end, Māori must have protection and receive acknowledgement of their rights and interests within their shared citizenship.

The New Zealand health and disability system has a responsibility to contribute to meeting the Crown's obligations under Te Tiriti. As an independent advisor to the Minister, this ethical framework supports the New Zealand health and disability system in meeting its obligations under Te Tiriti by drawing on the principles of Te Tiriti as articulated by the courts and the Waitangi Tribunal and considering their implications for resource allocation decisions.

Supporting the New Zealand health and disability system to meet its obligations under Te Tiriti is necessary if we are to ensure iwi, hapū, whānau and Māori communities are active partners in preventing, mitigating and managing the impacts of a pandemic or public health emergency on whānau, hapū, iwi and Māori communities (Ministry of Health 2020).

A focus on equity

Pandemics and other public health emergencies often have the biggest impact on marginalised communities. Pandemics highlight and exacerbate already existing inequities within the health system. For this reason, NEAC provides ethical guidance and notes the importance of considering equity in resource allocation. Equity recognises that different people with different levels of advantage require different approaches and resources to achieve equitable health outcomes.

Increasing risk through unequal distribution and exposure to the determinants of health

This framework recognises that every person is of equal moral worth. However, significant health inequalities exist among different groups of New Zealanders. This difference in health status between groups is influenced by socioeconomic factors and compounded by structural inequities, such as racism and discrimination. Structural inequities systematically disadvantage individuals and groups based on ethnicity and social positioning (ie, age, gender, ability). This results in the unequal distribution of power and resources and differentiated access and exposure to the acknowledged determinants of health. Research persistently shows that Māori, Pacific peoples and people from lower socioeconomic demographics experience worse health and die younger than other New Zealanders (Ministry of Health 2020).

Disabled people are of equal value and have the same rights as all other New Zealanders. Yet an underlying, pervasive and often unquestioned devaluing of disabled people exists called 'ableism'. When ableism intersects with ageism and/or racism, it can compound discrimination and specific human rights violations, deprioritisation in access to resources and poorer-quality health services.

Māori, Pacific peoples and disabled people, older people, people with intellectual and psychosocial impairments and those with chronic health

conditions, co-morbidities, dependence on ventilators and compromised immunity face are even more vulnerable during the COVID-19 pandemic.

These factors are particularly relevant when allocating clinical resources during a pandemic.

Indigenous health inequities in New Zealand

Māori experience higher rates of infectious diseases than other New Zealanders (Ballantyne 2020). For COVID-19, older people and individuals with underlying conditions are at increased risk of severe infection. Māori as a population have higher rates of chronic conditions and comorbidities and are therefore more likely to develop severe COVID-19 as a result of contracting SARS-CoV-2 infection. In addition, Māori often have more people living in their households, which places more people at risk from exposure to infectious diseases – but conversely, more people in the household stand to benefit from preventative actions.

Human rights

This framework is underpinned by all people's right to good health, including access to necessary resources, as expressed in article 25 and

the preamble of the Universal Declaration of Human Rights (United Nations 1948).¹ Human dignity is the ultimate foundation of all human rights and fundamental freedoms.

¹ Article 25 reads: 'Everyone has the right to a standard of living adequate for the health and well-being of [themselves and their] family, including ...medical care ...'. And, in the declaration's preamble the General Assembly of the United Nations proclaims that: '... every individual and every organ of

society ...shall strive ... by progressive measures, national and international, to secure their universal and effective recognition.'

Ethical principles

Introduction

This section sets out four resource allocation principles and four Te Tiriti principles (tables 1 and 2 respectively).

This framework does not prioritise the principles ethically or conceptually. However, the two sets of principles do have one important common ground: they highlight the important factors, particularly for Māori, that must be considered when allocating scarce resources. Importantly, the way they are applied will vary depending on the resource being considered, the level of scarcity and the context (clinical or public health).

Tensions between the principles

NEAC holds that having multiple principles reflecting a plurality of values is the best basis of ethical decision-making. It may be that in some circumstances different principles can be followed at the same time. For example, in some elective surgeries, prioritising those with most need and achieving the most benefit might be considered in tandem to achieve the best result. But in a pandemic (as with many other contexts), values and principles can conflict.

For example, with COVID-19, it may not be possible to achieve equity and to benefit the most people possible. As an example, in the case of intensive care unit (ICU) beds or ventilators, the decision might be made to treat those with fewer comorbidities first because this is predicted to be the best way of saving as many lives as possible. Yet, doing so may undermine equity if some groups (such as Māori or disabled people) tend to have more comorbidities than other groups to start with.

From a theoretical position, NEAC's approach fits with the idea that the different and sometimes inconsistent values and principles of ethics are *prima facie*. This means that wherever they are relevant, they are significant, but a particular value or principle may sometimes have to be sacrificed to realise another value or principle, judged of greater weight or significance in the circumstances. From a psychological standpoint, people will often feel a variety of values pulling them in different directions, experiencing internally the ethical dilemmas described later in this framework around the three examples of intensive care unit allocation, personal protective equipment allocation and vaccine allocation.

The three examples show the tensions that exist between values and principles when making difficult decisions. NEAC believes that good decision-making involves recognising, rather than ignoring, these tensions.

Table 1: Resource allocation principles

The resource allocation principles chosen reflect the important considerations that are made when prioritising scarce resources. They are in tension and must be considered in light of each resource allocation decision.

Resource allocation principle	Application to resource allocation
All people are equally deserving of care	<ul style="list-style-type: none"> Each person affected by the COVID-19 pandemic in New Zealand deserves equal respect and consideration. Resources should not be distributed arbitrarily or withheld on the basis of individual or group characteristics that are irrelevant to the clinical prognosis, for example, including: 'race, colour, sex, language, religion, political or other opinion, national or social origin, property, birth or other status such as disability, age, marital and family status, sexual orientation and gender identity, health status, place of residence, economic and social situation' (United Nations Committee on Economic, Social and Cultural Rights. 2009).² There must be sufficient evidence to demonstrate that these factors are predictive of prognosis if they are to be used in allocation decisions. Fair allocation should aim to avoid a first-come, first-served bias.
Getting the most from the resources	<ul style="list-style-type: none"> Resources required for the COVID-19 pandemic response must be managed responsibly. In the context of a health emergency, we should aim to allocate resources efficiently and maximise the clinical benefits. There are several competing interpretations of how best to measure clinical benefit, for example: to maximise lives saved, to maximise life years saved (eg, by prioritising the young to maximise length of lives saved), to maximise the cost-effective use of resources and to prioritise essential workers (such as health care staff) so they can continue to serve and protect the public.

² Note also that under the New Zealand Health and Disability Commissioner (Code of Health and Disability Services Consumers' Rights) Regulations 1996, right 2, every health consumer has the right to be free from discrimination. See: www.hdc.org.nz/your-rights/about-the-code/code-of-health-and-disability-services-consumers-rights/

Resource allocation principle	Application to resource allocation
Prioritising the people most in need	<ul style="list-style-type: none"> • There are competing interpretations of how to measure need – the sickest, the most disadvantaged or marginalised, those at greatest risk of harm or those subjected to previous injustices. • Prioritising those in need will sometimes align with and sometimes conflict with prioritising those who can most benefit from health resources. • One option is to give priority to individuals or groups in greatest need in order to restore them to an appropriate health threshold³
Achieving Equity	<ul style="list-style-type: none"> • 'In Aotearoa New Zealand, people have differences in health that are not only avoidable but unfair and unjust. Equity recognises different people with different levels of advantage require different approaches and resources to get equitable health outcomes' (Ministry of Health nd). • An equity approach would consider how resources can be allocated to mitigate the adverse consequences of pandemic response measures and avoid or minimise growth in inequity deriving from those measures. • It is likely to be difficult to ameliorate existing inequity during a public health crisis, however, all efforts must be made to ensure equity is at the forefront of decision-making. • The COVID-19 pandemic shed light on existing social fault lines and provided momentum to address entrenched inequity after the acute emergency had passed.

³ The World Health Organization stated in the *Rio Political Declaration on Social Determinants of Health* (WHO 2011) that people have the right to 'the highest attainable standard of health'. The highest attainable standard of health is a reflection of the standard of health enjoyed in the most socially advantaged group within a society. This indicates a level of health that is biologically attainable and the minimum standard for what should be possible for everyone in that society. See *Achieving Equity in Health Outcomes* (Ministry of Health 2018) for more information.

Table 2: Te Tiriti o Waitangi principles

The principles of Te Tiriti o Waitangi, as articulated by the Courts and the Waitangi Tribunal, provide the framework for how our health and disability system ought to meet its obligations under Te Tiriti in its day-to-day work. The Waitangi Tribunal's 2019 Hauora report recommends a set of principles for the primary health care system that are applicable to the wider health and disability system and are applied to resource allocation principles in table 2 below (Waitangi Tribunal 2019, pages 163–64).

Te Tiriti o Waitangi principles as set out in the <i>Hauora</i> report	Te Tiriti o Waitangi principles' application to the primary health care system	Te Tiriti o Waitangi principles' application to resource allocation
The guarantee of tino rangatiratanga, which provides for Māori self-determination and mana motuhake in the design, delivery and monitoring of primary health care.	Tino rangatiratanga requires clinicians, hospital administrators and public health policy makers to provide for Māori self-determination.	In a resource allocation setting, this means that Māori are key decision makers in the design, delivery, prioritisation and monitoring of health and disability services and the response to pandemics or public health emergencies.
The principle of options, which requires the Crown to provide for and properly resource kaupapa Māori primary health services. Furthermore, the Crown is obliged to ensure that all primary health care services are provided in a culturally appropriate way that recognises and supports the expression of hauora Māori models of care.	Options , which requires clinicians, hospital administrators and public health policy makers to provide for and properly resource kaupapa Māori health and disability services in response to a pandemic or public health emergency.	In a resource allocation setting, this means that the health and disability system is agile in adapting and responding to the pandemic resource needs of kaupapa Māori health and disability services to be able to serve Māori communities.
The principle of active protection, which requires the Crown to act, to the fullest extent	Active protection , which requires clinicians, hospital administrators and public health	This requires the clinicians, hospital administrators and public health policy makers to prioritise

Te Tiriti o Waitangi principles as set out in the <i>Hauora</i> report	Te Tiriti o Waitangi principles' application to the primary health care system	Te Tiriti o Waitangi principles' application to resource allocation
<p>practicable, to achieve equitable health outcomes for Māori.</p> <p>This includes ensuring that the Crown, its agents and its Treaty partner are well informed about the extent, and nature, of both Māori health outcomes and efforts to achieve Māori health equity.</p>	<p>policy makers to act, to the fullest extent practicable, to protect Māori health and achieve equitable health outcomes for Māori in response to a pandemic or public health emergency.</p>	<p>resources to actively protect the health of the Māori population and implement approaches to equip whānau, hapū, iwi and Māori communities with the resources to undertake and respond to public health measures to prevent and/or manage the spread and transmission of disease among their people.</p>
<p>The principle of partnership, which requires the Crown and Māori to work in partnership in the governance, design, delivery, and monitoring of primary health services. Māori must be co-designers, with the Crown, of the primary health system for Māori.</p>	<p>Partnership, which requires the clinicians, hospital administrators and public health policy makers and Māori to work in partnership in the governance, design, delivery and monitoring of the response to a pandemic or public health emergency. This contributes to a shared responsibility for achieving health equity for Māori.</p>	<p>In a resource allocation setting, this means that the health and disability system works alongside Māori leaders to enable a coordinated and united response to a pandemic or public health emergency whereby Māori have the resources to govern, design, deliver, manage and monitor a response and the impacts on Māori communities.</p>

Allocation of resources

Resources

When we don't have enough of a particular resource to meet demand, we must decide the best way to distribute that supply of resource to ensure the most effective results. Resource allocation is the mechanism we use to do this.

This framework applies to extreme measures intended to be implemented only in the worst-case scenario, in which adequate resources are not available. The application of principles and the relative weighting of different principles may differ between emergency and non-emergency situations. For example, a novel COVID-19 vaccine would still need to meet safety and efficacy standards; but it may be ethical to endorse a wide-spread immunisation programme without long-term outcome data.⁴

Ethical resource allocation should not be limited to clinical resources. There are many different kinds of resources that may become scarce

during a pandemic. Each resource has a different risk/benefit profile and may be rationed or prioritised using a different weighting of the principles, for example, a clinical or medical context in the case of ventilators or a public health context in the case of personal protective equipment.

Support services are an additional category of essential pandemic resources and, if allocated well, they can be useful in mitigating risk for individuals and communities.

This framework could be applied to a variety of resources. Some options are listed below.⁵

Clinical resources

Treatment has burdens and benefits; the decision to allocate a clinical resource is complex and requires assessment of futility/appropriateness of medical intervention, the patient's best interests, the patient's autonomy and the principles of resource allocation. Clinical resources include access to:

- ICU
- ventilators

⁴ For example, the New Zealand Health and Disability Commissioner (Code of Health and Disability Services Consumers' Rights) Regulations 1996, right 4, states that every health consumer has the right to services of an appropriate standard. (See: www.hdc.org.nz/your-rights/about-the-code/code-of-health-and-disability-services-consumers-rights/) However, what is 'appropriate' will be interpreted differently depending on context and the resources available.

⁵ The options listed expand on those discussed in *Sydney Health Ethics: An Ethics Framework for Making Resource Allocation Decisions within Clinical Care: Responding to COVID-19* (University of Sydney 2020).

- palliative care
- medications.

Public health resources

These are clearly valuable goods, typically with minimal risks or downsides. They include:

- personal protective equipment (PPE)
- diagnostics
- clinical expertise
- vaccines.

Support service resources

These are measures that can increase access to services and mitigate adverse impact. They include:

- carers visitation rights (allocating PPE to support this)
- accessible communication (public and patient)
- supported decision-making tools and services
- financial support for home careers
- interpreters
- social workers

- health navigators
- health and disability advocates
- rehabilitation support (given the growing evidence of disabilities associated with critical COVID-19 e.g. Post-Intensive Care Syndrome cases).

Making decisions

The decision-making process

Good decision-making processes confer legitimacy on the final decisions, even when disagreement persists, and may help to resolve ongoing disagreement. They may also help ensure that decisions include comprehensive consideration of relevant issues.

Pandemic planning decisions should be clearly consistent and underpinned by ethical values. A good decision-making process fosters public trust and goodwill towards institutions such as hospitals, leading to greater acceptance and satisfaction and fewer complaints. Such processes identify values recognised in Māori tikanga or kawa (protocol or ceremonial actions) alongside other values.

It has been suggested that ‘due process requirements are inherently important because fair hearings affirm the dignity of the person’ (Bayer 2007 p. 266). Good decision-making processes may be necessary in

order to show respect for people and ensure procedural fairness. As such, they may also reflect the value of tika, in the sense of acting in a way that is just and proper. Māori tikanga and mātauranga Māori may need to be considered in the context of challenging other values not just sitting alongside those values.

A wide range of views can be present when considering ethical issues, and it is common to have a lack of consensus about which values and principles are the most important on which to base a decision. This is another reason why we need to develop acceptable, fair processes.

Establishing a decision-making group⁶

NEAC recommends that a decision-making group be established in appropriate health services institutions at both the national and local level, as necessary. Each institution will need to consider the kind of membership for their decision-making group that will work best for them. Each group should include the perspectives of their particular institution's patients, Māori, disabled people, clinicians, ethicists, legal and any other relevant stakeholders who will be impacted by the decisions the group will be making. The group should:

- frequently re-evaluate their allocation criteria since the application of ethical frameworks should be a fluid process that moves back and forth along a continuum contingent on available resources and as the understanding of the spread, pathophysiology, treatment and outcomes of COVID-19 infection evolves
- determine the best way of communicating clearly and consistently to appropriate personnel about when crisis level allocation or re-allocation is and is not in effect
- take into account Te Tiriti articles and principles and their application to resource allocation
- consider plans for ensuring staff safety, maintaining clinician-to-patient ratios, training additional personnel, supporting organisational resiliency and providing support resources for staff (child care, payment, sick leave, etc.)
- ensure appropriate communication with patients, the local community and the broader general public about plans for scarce resource allocation
- maintain communication links between local and national responses.

⁶ The recommendations in this section are based on information from *Ethical Framework and Recommendations for COVID-19 Resources Allocation When Scarcity is Anticipated* (University of Virginia Health System Ethics Committee 2020)

In the clinical context, a key aim is to separate care and advocacy for a particular patient from the allocation decisions. This provides a level of detachment from the immediate clinical needs of each patient, better ensuring a clear and defensible decision-making process around resource allocation, thereby reducing the opportunities for accusations of bias. It also has the advantage of protecting those clinicians caring directly for patients from some of the direct stress and anxiety of being the decision-makers about allocation.

In the public health context, establishing a group allows transparency and clear communication between the national and local levels. It also ensures a clearer path to engaging with local communities.

General allocation guidance

Should COVID-19 patients be prioritised over patients without COVID-19 in resource allocation?

NEAC agrees with *Sydney Health Ethics: An Ethics Framework for Making Resource Allocation Decisions within Clinical Care: Responding to COVID-19* that there are no ethically defensible grounds to prioritise

an infected patient over any patient who is not infected (University of Sydney 2020).

How will resource allocation impact electives and routine health care?

If resources, such as clinical expertise, become scarce, it may be necessary to prioritise responding to the pandemic over non-essential interventions (elective surgeries, cancer screening) that can be postponed. However, such a decision could have significant health impacts for individuals and should not be taken lightly. The decision is grounded in two interrelated justifications. The first is to reduce the spread of COVID-19. The second is to prepare for a potential swell of COVID-19 patients.

Postponing non-essential interventions necessarily involves a trade-off between the harm caused by postponing routine care and the potential harm of health systems being overwhelmed. Decisions relating to postponing non-essential interventions, need to be continually reassessed. National instructions to prohibit non-essential services may cause harm if they are applied to organisations in regions that do not have a high risk of COVID. The decision-making group needs to make its decisions based on local and or regional data.

The group also needs to give explicit consideration to the implications of tikanga and mātauranga Māori, including involving tikanga experts in the

discussion, when making decisions about standards of care in times of crisis.

Should the standard of care for patients change in an epidemic?

Patients should receive the best available care during a pandemic. However, the range of options for what is ‘best’ could well change as a result of the constraints imposed by a pandemic. For example, patients may not be allowed to have visitors (especially when PPE is scarce). This will be necessary to protect staff and other patients and reduce the risk of transmission from and to visitors.

This could mean that some patients become seriously ill and die without the usual support of relatives and friends. This will inevitably cause distress to all parties. Access to other modes of communication, such as phone and video calls, should be provided where possible. It is important that all organisations inform the public about any changes to standards of care before such changes are introduced (University of Sydney 2020).

Where patients who are not infected are discharged earlier because of the concerns of a pandemic, those patients should receive more extensive continuing care at home to ensure they are not disadvantaged (University of Sydney 2020). This could be achieved through increased telehealth services, and should only occur when clinically appropriate.

How will data be collected and shared?

Data sharing between different institutions is critical in effective resource allocation. For example, there may be opportunities for district health boards (DHBs) to share resources, depending on the extent of impact of COVID-19 in each region. It will be important to ensure that adequate care standards are in place to protect privacy and maintain confidential communications – crisis standards of care do not weaken the fundamental obligation to protect the privacy and confidentiality of patients.

Collecting high-quality ethnicity and disability data for monitoring is fundamentally important. Data collection and sharing enables the response measures and allocation decisions to be monitored and tailored to respond promptly and effectively to evidence of inequitable impacts and outcomes.

What are organisations’ obligations?

Organisations must share information, adjust protocols, and balance resources and patient loads across their immediate surrounding region to ensure as consistent a standard of care is maintained as possible. Public health decisions should be transparent.

Example 1: Intensive care unit allocation

Introduction

In order to show fairness and sustain public trust, we need to implement triage guidelines consistently throughout New Zealand. Solidarity requires that resource allocation reflect our common interest in addressing any pandemic; collaborative regional cooperation may require the reallocation of resources between health services based on differential need. Clear and consistent triage guidelines and triage committees can reduce the moral injury and distress frontline health workers can experience during a pandemic.

Current approaches of guidelines for access to ventilators and ICU beds use comorbid conditions, future life expectancy and health and public safety workers' status as the key determinants for prioritisation – all of which disadvantage lower socioeconomic classes, Māori, Pacific peoples and people with disability.

There are several tensions to be considered when allocating resources in the clinical setting, as there is the additional consideration of clinical

appropriateness to take into account, which may limit the ability for equity to be fully realised.

Applying the principles

Prioritising the people most in need

Patients with the most severe disease who are most likely to die or suffer without treatment should be prioritised for ICU access. Often this principle will align with getting the most out of resources because the sickest patients will be most likely to benefit from ICU care. However, some patients will fall below a threshold where they are so sick there is minimal chance of their survival, even with ICU intervention.

Getting the most out of resources

Most critical care triage guidelines prioritise saving lives as the primary ethical value, for example, resources should be allocated to patients with the greatest capacity to benefit from ICU. This is often defined as the likelihood of surviving an ICU admission and for one year following discharge (Bideson 2018). This principle conflicts with the principle of achieving equity of clinical outcomes.

Giving priority to individuals who have the most chance of benefiting from treatment in ICU may achieve the aim of saving the maximum number of lives. But greater ability to benefit is often associated with wider

determinants of health, such as higher socioeconomic status. Socioeconomic status in turn may be systematically distributed to some groups and away from others. As a result, a socioeconomically advantaged group may be more likely to be represented among those individuals selected for ICU. Where reduced ability to benefit by reason of socioeconomic disadvantage is linked to injustice, this results in a tension with the value of equity.

Achieving equity

Given the unequal distribution of comorbidity and multi-morbidity amongst the New Zealand population (for example on the grounds of socioeconomic deprivation and ethnicity), it will be very difficult to avoid unequal outcomes based on demographic factors.

For critically ill COVID-19 patients, the primary consideration should be whether ICU care is in the patient's best interest and what other care may be appropriate, including palliative or supportive care. When ICU space is severely limited, there will be tension between utility (saving the most lives) and equity (ensuring fair outcomes between groups). This tension cannot be resolved via ethical analysis at the stage of admission to ICU, as clinical considerations take precedent at that stage.

All people are equally deserving of care

Disability status or age must not be used as a simple proxy for health status or capacity to benefit. Screening measures, including the quality-adjusted life year (QALY) measure, must be avoided as they are inherently biased against people with disabilities. Triage decisions should be based on assessment of an individual's personal medical history (noting the tendency for medical records to be error-prone).

General considerations

The following considerations have been adapted from Maves et al 2020.

When implemented, triage guidelines must be applied to all current and new patients presenting with critical illness, regardless of the diagnosis of COVID-19 or other illness.

NEAC recommends an independent decision-making group be established to enact a triage plan.

It is important to ensure that patients who do not initially receive critical care resources are still provided with the best supportive care possible and are re-evaluated regularly for consideration of resource allocation as supplies become available.

Patients who are unable to receive invasive mechanical ventilation may be able to receive supplemental oxygen through a non-invasive route as resources permit.

The implementation of early palliative care interventions can provide a better quality of life, less treatment intensity, and no consistent impact on mortality (Maves et al 2020). This offers a strong rationale for carefully integrating symptom management alongside palliative care principles for all patients who are impacted by crisis care.

There is no ethically significant difference between withholding and withdrawing life-sustaining treatment; but health care providers, patients and families often find decisions to withdraw treatment more emotionally and psychologically challenging.

Time trials of ICU may be necessary to manage patients and families' expectations and avoiding prolonged stays in ICU with minimal and decreasing prospects of benefit. Clear criteria and schedules for re-assessing patients on time trials will be necessary.

ICU care may be ethically withdrawn when it is no longer in the patient's best interests (harm of treatment now outweighs the prospect of any benefit). Decisions about the patients' best interests must follow the

process and principles of right 7(4) in the Health and Disability Commissioner (Code of Health and Disability Services Consumers' Rights) Regulations 1996.⁷ Care may also be ethically withdrawn if it is judged to be medically inappropriate because the prospect of benefit falls below a predetermined threshold.

Depending on the demand for care within ICU, estimated length of stay per patient and epidemiological surge projections, hospitals may be justified in keeping some ICU beds empty in order to be prepared to care for subsequent high-priority patients.

Health care should not be denied or limited based on quality of life judgements (Maves et al 2020).

⁷ See: www.hdc.org.nz/your-rights/about-the-code/code-of-health-and-disability-services-consumers-rights/

Table 3: Assessment of the impact of mechanisms suggested in literature to prioritise scarce resources against the resource allocation principles

Mechanisms	All people are equally deserving of care	Getting the most from the resources (population health)	Achieving equity (achieve 'more' equal outcomes)	Prioritising the people most in need
Clinical scoring + prognosis (eg, SOFA score, clinical frailty, co-morbidities)	Assesses all patients by the same standard and therefore ensures consistency. Need to ensure that disability status and age are not used as proxies for capacity to benefit and that QALY assessments are excluded.	Will successfully maximise the most efficient use of resources to minimise population mortality and morbidity.	Will not achieve equitable outcomes between groups because of the unequal distribution of health status amongst the population, including disparities according to ethnicity, disability and socioeconomic status.	In many cases, will result in high priority for the sickest patients; but will exclude the very sickest patients who fall below a threshold where there is minimal chance of survival to ICU discharge (or one year after discharge).
Randomisation / lottery	Gives everyone an equal chance.	Does not ensure the efficient use of resources to maximise benefit.	Should achieve relatively equitable outcomes between patients/groups, at least amongst those who have access to health care and present for triage assessment.	Does not prioritise those with the most need.

Mechanisms	All people are equally deserving of care	Getting the most from the resources (population health)	Achieving equity (achieve 'more' equal outcomes)	Prioritising the people most in need
Priority for health care and frontline workers (eg, cleaners)	Does not treat all patients' equally because it gives priority to some classes of patients based on their employment status and perceived social utility.	Supports population health if: (1) priority access to treatment acts as an incentive for essential frontline workers to continue to work before infection and/or (2) means essential frontline workers recover from critical infection and can resume work. (These assumptions would need to be tested with empirical evidence.)	May support equitable outcomes if we believe that primary health care and frontline workers are fairly entitled to priority access due to the special burdens they have carried on behalf of society.	May prioritise those in greatest need if we interpreted need as those at greatest risk of harm; evidence suggests that health workers and, in some case, frontline workers are at significantly increased risk of contracting a pandemic infection, such as COVID-19.

Example 2: Personal protective equipment allocation

Introduction

COVID-19 is an easily transmissible infectious disease. Personal protective equipment (PPE) is an important component, but only one part, of a system protecting staff and other patients from cross-infection of easily transmissible infectious diseases and can be considered a harm reduction resource since appropriate use significantly reduces risk of viral transmission.

During a pandemic, PPE must be prioritised and allocated based on proportionate and reasoned guidelines. Overuse of PPE is a form of misuse and should be avoided.

Applying the principles

Prioritising the people most in need

Because the principle getting the most from the resources in this case is defined in terms of harm minimisation, this will for the most part align with prioritising the people most in need. For both principles, we should prioritise those at greatest risk (both of infection and risk of severe COVID-19 mortality).

‘Need’ can relate to several distinct criteria. In the case of PPE, these include: the need to reduce the chance of contracting infection by those who take greater risks because of their health care or other roles; the need to protect those who are most likely to contract COVID-19 through contact with carers; the need to preserve the welfare of those who are most affected by COVID-19 (eg, those who are dying and their families).

Another option is to prioritise populations that are particularly impacted by COVID-19.

Getting the most from the resources

Distribution of PPE should minimise infection rates of COVID-19 (and other pathogens) in order to reduce mortality and morbidity from COVID-19 (and other diseases) across the population.

This takes account of the risk of exposure and the risk of infection resulting in severe COVID-19 morbidity or mortality. Some groups may be at high risk of exposure but low risk of severe COVID-19 or vice versa.

Risk of harm to providers contracting COVID-19 within the health care system will vary according to:

- the nature of the clinical encounter, that is, intubation is more dangerous than transporting patients
- the infectious status of the patient, that is, the patient has confirmed, suspected or does not have COVID-19
- other patient characteristics, for example, they are agitated or violent
- other health provider characteristics, for example, comorbidities or age.

When distributing limited PPE to clinicians during a pandemic, an egalitarian approach that treats all clinical roles as equal may not serve the principle of getting the most from the resources.

‘Social worth’ is an interpretation of this principle that may be ethically justified in the unique setting of a pandemic.

This recommendation arose from the recognition that some members of society are critical to a successful response to a pandemic.

Applied to PPE, social worth would require assessment not of how many lives a clinician could save, but of the instrumental value of that clinician in providing patient care, both during and after the pandemic.

Social worth is not typically an acceptable criterion for distributing health care resources and should be invoked only if absolutely necessary and justified in limited circumstances.

Achieving equity

Equity requires that distribution of PPE be prioritised to protect marginalised groups and prevent or improve inequality around the risk of contracting COVID-19 or of suffering from a severe COVID-19 infection. This can be achieved by recognising epistemic authority, that is, listening to marginalised groups regarding what they need and how best to distribute resources – they have valuable and specialist knowledge about their own needs.

Examples include, working with iwi and Māori health groups to ensure the needs of Māori are met and Māori are involved in or control distribution within their communities.

Similarly, it is important to work with consumer and interest groups, for example the Disabled Persons Assembly NZ (DPA), to ensure disabled people are not left behind.

Equity may also require additional provision of PPE to Māori health providers and PPE provision to groups in which Māori and Pacific peoples are more highly represented, for example care home workers.

All people are equally deserving of care

Seniority within the health system or organisational hierarchy is irrelevant to PPE distribution. The only exception would be staff with critical expertise whose absence would disproportionately impact the system's ability to provide adequate treatment. Where this justification is used, the reasoning must be transparent.

PPE should not be diverted from standard clinical use in the treatment of other diseases or conditions (eg, surgery); expect when the risk of exposure and harm from COVID-19 exceeds the risks related to those other applications.

General considerations

The following considerations have been adapted from Bean et al 2020.

If staff are not provided with adequate PPE, their ethical and legal obligations to work in such environments may be weakened (Schuklenk 2020).

Staff have an ethical obligation, based on their obligation to patients and colleagues, to contribute to a safe working environment. This includes the obligation to raise concerns about inadequate PPE. Managers must ensure clear and safe communication channels are available. Staff should not be censured or reprimanded for raising reasonable concerns about PPE supply.

Organisations should implement clear decision-making plans, with regular communication and centralised and coordinated distribution.

As with vaccines, prioritisation of health care workers can be justified on several grounds: because of their increased risk (protect the vulnerable) and their instrumental role in maintaining essential social services (best use of resources) and in recognition of the greater burdens they are carrying on behalf of society before the development of any vaccine (reciprocity).

In order to optimise PPE availability, health systems must coordinate and cooperate to minimise the need for PPE, coordinate supply chain and distribution, and use PPE effectively and appropriately.⁸ This is supported by the ethical value of solidarity.

⁸ For specific guidance, see WHO 2020.

Ensuring effective use of PPE requires appropriate training in infection prevention and control (IPC) to be rolled out in conjunction with PPE.

In order to conserve PPE, visitors should be restricted. Equity requires that exceptions be made for minors or disabled patients who need access to careers and, in some cases, for patients at the end of life. Where visitors are permitted, they should be provided with clear instructions about how to put on and remove PPE and about performing hand hygiene before putting on and after removing PPE. The instructions should be provided under the supervision of a dedicated health care worker.

Telehealth services can also help conserve PPE.

As described above, cancelling non-urgent or elective procedures that require use of PPE can assist in responding to pandemic outbreaks. However, such restrictions should be continually reassessed.

Example 3: Vaccine allocation

Introduction

Safe and effective vaccines are the straightest route to controlling the COVID-19 pandemic. When a vaccine is developed, demand will likely exceed immediate supply and decisions regarding prioritisation will be necessary.

In the case of the COVID-19 pandemic, as there is currently no approved vaccine, this section comments on general ethical principles and priorities for a COVID-19 immunisation programme.

Such a programme must be driven by the science of the vaccine, including vaccine efficacy using both the recommended full schedule and less than the full schedule, course of vaccine administration, contraindication and vaccine safety considerations, vaccine presentation (eg, multi-dose presentation), cost of the vaccine and vaccine supply (whether sufficient quantities can be purchased or produced locally). Immunisation must be based on sound infection control principles developed from the best available immunological, epidemiological and clinical evidence. Pharmacovigilance and surveillance to monitor for

adverse events and effectiveness will be especially important given the anticipated lack of long-term safety and efficacy data.

Applying the principles

Getting the most from the resources

An immunisation programme should aim to maximise the benefit of a vaccine in reducing national mortality and morbidity as a result of COVID-19 and enable the functioning of essential social services.

Prioritising the people most in need

Vaccine allocation could also prioritise people who are the most vulnerable to contracting COVID-19 and/or developing severe COVID-19 disease. Vulnerability depends on both biological and social features.

Priority may be given to individuals with inadequate or limited capacity to respond to the COVID-19 using non-pharmacological public health measures (eg, social distancing, PPE).

Priority may be given to individuals whose work is essential for maintaining health care systems and pandemic response and essential social services.

In relation to vaccination, protecting the most vulnerable and those at highest risk typically aligns with the principle of maximising the population benefit of vaccines.

Some people with underlying health conditions or pre-existing co-morbidities will be vulnerable to developing severe or critical COVID-19 infection and at increased risk of dying or suffering serious and possible long term COVID-19 related morbidity.

Other people will be vulnerable because of their social situation or role, including frontline health workers at high risk exposure to COVID-19 patients and people with less capacity to socially isolate (eg, prisoners or those in residential care facilities).

Achieving equity

Vaccine allocation should avoid remediable differences among groups of people based on social, economic, demographic or geographic factors. An equitable immunisation programme will require:

- recognition of epistemic authority (Vulnerable and marginalised communities have valuable understandings of their own needs)
- allocation of resources to protect and promote the interests of vulnerable or marginalised populations
- funding for equitable access to vaccines, including funding for programmes for Māori to design and deliver vaccine programmes to

their own communities. Affordability and access must not become barriers to widespread vaccine availability.

Vaccine allocation should try to avoid or minimise compounding disadvantage by ensuring those who are not prioritised for access to vaccines receive other essential resources, such as PPE or priority access to health care.

All people are equally deserving of care

All individuals' interests should count equally; and all people should be assessed against the same criteria for access to a vaccine.

From an epidemiological perspective, all individuals living in a geographic area (such as New Zealand) must be considered as part of the immunisation programme, regardless of their immigration status. This includes all non-residents currently living in, or unable to leave, New Zealand.

General considerations

Vaccines are beneficial to individuals and populations.

Efforts to control the COVID-19 pandemic at the national level will only succeed with a coordinated regional and global strategy. New Zealand should participate in and support international conversations about fair vaccine allocation globally.

Vaccination must be voluntary unless mandatory vaccination becomes essential to avoid concrete and serious harm. Efforts to maximise efficient use of resources and save lives may conflict with individual autonomy. Given the enormous economic and social impact of the COVID-19 pandemic and unpresented restrictions on personal liberty, mandatory or incentivised vaccination may be considered for COVID-19. For example, vaccination may be considered a requirement for health providers given their potential role as vectors. The core public health principles of necessity and least infringement require that any restriction on individual liberty must be necessary to achieve the public health goal.

Randomisation or lotteries can help determine distribution of vaccines between individuals or groups that could reasonably be expected to derive equal benefit from the vaccine. Randomisation gives each person an equal chance to benefit. A 'first-come-first-served' approach should be avoided because it prioritises those with greater access to health services, information and/or wealth.

Prioritisation of specific groups for access to a vaccine will require careful public justification and communication to ensure that these groups do not perceive themselves as test subjects or that others perceive them as being unfairly privileged.

Several principles can support specific distribution mechanisms. For example, prioritising health frontline workers can be justified by their

greater risk (protect the vulnerable) and their instrumental role in maintaining essential social services (best use of resources), as well as in recognition of the greater burdens they carried on behalf of society before an effective vaccine was developed (reciprocity).

Bibliography

AMA. 2020. Fair access to limited critical care resources. Ethics: American Medical Association. URL: www.ama-assn.org/delivering-care/ethics/fair-access-limited-critical-care-resources (accessed 27 May 2020).

Australian Government Department of Health. 2020. What you need to know about coronavirus (COVID-19). URL: www.health.gov.au/news/health-alerts/novel-coronavirus-2019-ncov-health-alert/what-you-need-to-know-about-coronavirus-COVID-19 (accessed 27 May 2020).

Ballantyne, Angela, 2020, ICU triage: How many lives or whose lives? URL:<https://blogs.bmj.com/medical-ethics/2020/04/07/icu-triage-how-many-lives-or-whose-lives/>

Bean S, Reel K, Smith MJ, et al. 2020. *Ethical Framework for the Allocation of Personal Protective Equipment (during COVID-19)*. Toronto: University of Toronto. <http://jcb.utoronto.ca/news/documents/Ethical-Framework-for-the-Allocation-of-Personal-Protective-Equipment-2020.pdf> (accessed 27 May 2020).

Biddison ELD, Faden R, Gwon HS, et al. 2018. Too many patients...a framework to guide statewide allocation of scarce mechanical ventilation during disasters." *Chest* 155 (4): 848–54. DOI: <https://doi.org/10.1016/j.chest.2018.09.025> (accessed 27 May 2020).

DeBruin D, Liaschenko J, Marshall M. 2012. Social justice in pandemic preparedness." *American Journal of Public Health* 102 (4): 586–91.

Emanuel EJ, Persad G, Upshur R, et al. 2020. Fair allocation of scarce medical resources in the time of Covid-19. *The New England Journal of Medicine* 382: 2049–55. URL: www.nejm.org/doi/full/10.1056/NEJMs2005114 (accessed 27 May 2020).

Fullinwider R. 2018. Affirmative action. *Stanford Encyclopaedia of Philosophy*. URL: <https://plato.stanford.edu/entries/affirmative-action/> (accessed 21 April 21 2020).

Human Rights Commission. 2020. *Human Rights and Te Tiriti o Waitangi: COVID-19 and Alert Level 4 in Aotearoa New Zealand*. Wellington: Human Rights Commission. URL: www.hrc.co.nz/files/6615/8819/4763/Human_Rights_and_Te_Tiriti_o_Waitangi-_COVID-19_and_Alert_Level_4_FINAL.pdf (accessed 27 May 2020).

Klitzman R. 2020. *How hospitals will decide who lives and who dies in the COVID-19 crisis*. 03 March. (accessed 20 April 2020). URL: <https://thehill.com/opinion/healthcare/490034-how-hospitals-will-decide-who-lives-and-who-dies-in-our-coronavirus-crisis> (accessed 21 April 21 2020).

Mannelli C. 2020. Whose life to save? Scarce resources allocation in the COVID-19 Outbreak. *Journal of Medical Ethics*. URL: <https://jme.bmj.com/content/early/2020/05/20/medethics-2020-106227> (accessed 27 May 2020).

Maves R, Downar J, Dichter J, et al. 2020. Triage of scarce critical care resources in covid-19 an implementation guide for regional allocation: an expert panel report of the task force for mass critical care and the American college of chest physicians *Chest*. DOI:<https://doi.org/10.1016/j.chest.2020.03.063> (accessed 27 May 2020).

- McDougall R, Sheahan L, Ko D. 2020. *Planning for and Managing COVID-19: Ethical Decision-making Tool*. Melbourne: Melbourne School of Population and Global Health, The University of Melbourne. URL: https://mspgh.unimelb.edu.au/__data/assets/pdf_file/0015/3330060/COVID-ethical-tool-McDougall-Sheahan-Ko-v3.pdf (accessed 27 May 2020).
- McMillan J, Hope T, Wilkinson D. 2013. Precision and the rules of prioritization. *Cambridge Quarterly of Healthcare Ethics* 22 (4): 336–45.
- Ministry of Health. nd. Achieving equity. URL: www.health.govt.nz/about-ministry/what-we-do/work-programme-2019-20/achieving-equity (accessed 30 May 2020).
- Ministry of Health. 2018. *Achieving Equity in Health Outcomes: Highlights of important national and international papers*. Wellington: Ministry of Health. URL: www.health.govt.nz/system/files/documents/publications/achieving-equity-in-health-outcomes-important-paper-highlights-nov18_1.pdf (accessed 30 May 2020).
- Ministry of Health. 2020. *Initial Covid-19 Māori Response Action Plan*. Wellington: Ministry of Health. URL: www.health.govt.nz/publication/initial-covid-19-maori-response-action-plan (accessed 27 May 2020).
- Mirzaali M, Parker J. 2020. The moral cost of coronavirus. *Blog: Journal of Medical Ethics*. URL: <https://blogs.bmj.com/medical-ethics/2020/03/16/the-moral-cost-of-coronavirus/> (accessed 21 April 2020).
- NEAC. 2007. *Getting Through Together: Ethical values for a pandemic*. Wellington: Ministry of Health. URL: <https://neac.health.govt.nz/publications-and-resources/neac-publications/getting-through-together-ethical-values-pandemic> (accessed 29 May 2020).
- New York State Task Force on Life and the Law, New York State Department of Health. 2015. *Ventilator Allocation Guidelines*. URL: www.health.ny.gov/regulations/task_force/reports_publications/docs/ventilator_guidelines.pdf (accessed 21 April 2020).
- Public Health Association of New Zealand. 2012. *Te Ture Whakaruruhau: Code of ethical principles for public health in Aotearoa New Zealand*. Wellington: Public Health Association of New Zealand. URL: <https://app.box.com/s/62474kdlaxyq3t406sdck4j67bh6s40e> (accessed 27 May 2020).
- Ribhi Hazin, Public Health Ethics: Theory, Policy, and Practice. Ronald Bayer, Lawrence O Gostin, Bruce Jennings, and Bonnie Steinbeck (eds.), *International Journal of Epidemiology*, Volume 36, Issue 4, August 2007, <https://doi.org/10.1093/ije/dym113>
- Rosenbaum L. 2020. Facing Covid-19 in Italy — ethics, logistics, and therapeutics on the epidemic's front line. *The New England Journal of Medicine* 382: 1873–75. URL: www.nejm.org/doi/full/10.1056/NEJMp2005492 (accessed 27 May 2020).
- Scanlon TM. 2000. *What We Owe to Each Other*. Belknap Press: An Imprint of Harvard University Press.
- Schuklenk U. 2020. Health care professionals are under no ethical obligation to treat COVID-19 patients. *Blog: Journal of Medical Ethics*. URL: <https://blogs.bmj.com/medical-ethics/2020/04/01/health-care-professionals-are-under-no-ethical-obligation-to-treat-COVID-19-patients/> (accessed 27 May 2020).

Thompson AK, Faith K, Gibson JL, et al. 2006. Pandemic influenza preparedness: an ethical framework to guide decision-making. *BMC Medical Ethics* 7, 12. DOI: <https://doi.org/10.1186/1472-6939-7-12> (accessed 27 May 2020).

United Nations. 1948. *Universal Declaration of Human Rights*. URL: www.un.org/en/universal-declaration-human-rights/ (accessed 29 May 2020).

United Nations Committee on Economic, Social and Cultural Rights. 2009. *General Comment No. 20, Non-discrimination in economic, social and cultural rights (art. 2, para. 2 of the International Covenant on Economic, Social and Cultural Rights)*. Geneva: United Nations. URL: <https://digitallibrary.un.org/record/659980?ln=en#record-files-collapse-header> (accessed 30 May 2020).

University of Sydney, the. 2020. *Sydney Health Ethics: An Ethics Framework for Making Resource Allocation Decisions within Clinical Care: Responding to COVID-19*. Version 1, 2nd April. Sydney: The University of Sydney. URL: www.sydney.edu.au/content/dam/corporate/documents/faculty-of-medicine-and-health/research/centres-institutes-groups/she.-clinical-ethics.-resource-allocation-framework.-version-1.-2-april-2020.pdf (accessed 30 May 2020).

University of Virginia Health System Ethics Committee. 2020. *Ethical Framework and Recommendations for COVID-19 Resources Allocation When Scarcity is Anticipated*. URL: <https://med.virginia.edu/biomedical-ethics/wp-content/uploads/sites/129/2020/03/Ethical-Framework-for-Co-vid-19-Resources-Allocation-3.26.20.pdf> (accessed 27 May 2020).

Vieria CM, Franco OH, Restrepo CG, et al. 2020. COVID-19: The forgotten priorities of the pandemic. *Maturitas* 136, 38–41. DOI: <https://doi.org/10.1016/j.maturitas.2020.04.004> (accessed 27 May 2020).

Waitangi Tribunal. 2019. *Hauora: Report on stage one of the Health Services and Outcomes Kaupapa Inquiry*. Wellington: Waitangi Tribunal. URL: https://forms.justice.govt.nz/search/Documents/WT/WT_DOC_152801817/Hauora%20W.pdf (accessed 30 May 2020).

WHO. 2011. *Rio Political Declaration on Social Determinants of Health*. World Conference on Social Determinants of Health, Rio de Janeiro, Brazil, 21 October 2011. World Health Organization.

WHO. 2020. *Rational Use of Personal Protective Equipment for Coronavirus Disease 2019 (COVID-19): Interim guidance*. Geneva: World Health Organization. URL: https://apps.who.int/iris/bitstream/handle/10665/331215/WHO-2019-nCov-IPCPPE_use-2020.1-eng.pdf (accessed 27 May 2020).