Ethical framework for utilisation of critical care in response to the COVID-19 crisis

V1.2

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Government of JERSEY

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Purpose of the framework

The purpose of this framework is to support the fair and effective use of HCS critical care capacity in the event of exceptional demand. The framework is based on published national guidance and guidance from UK critical care networks developed during previous pandemic planning.

Activation of the framework

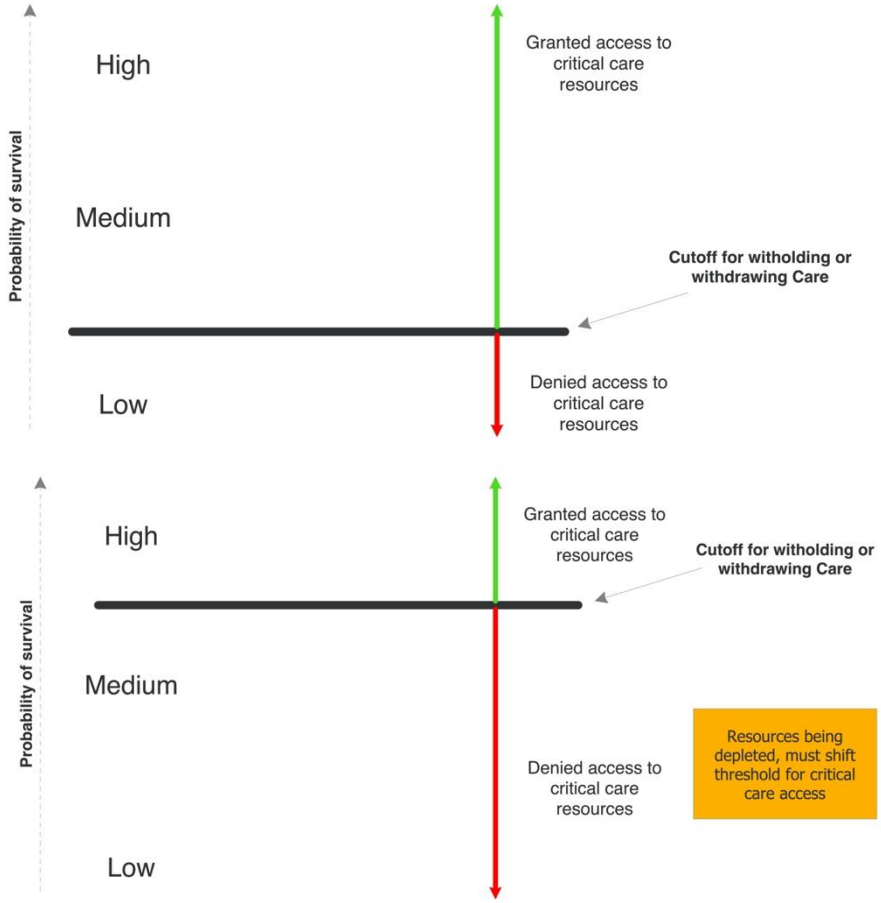
By definition the framework will only be applied in the situation where the pandemic results in large numbers of critically ill patients suffering both from Covid-19 related conditions and other medical conditions unrelated to Covid-19 who may overwhelm available resources despite implementing surge-response strategies. If this occurs, critical care triage, which includes both prioritising patients for care and rationing scarce resources, will be required. At the same time the rest of the health system will be forced to adopt 'crisis standards of care'- models of care that no longer meet the same standards that would be expected outside a pandemic situation.

In this exceptional demand scenario available critical care resources are anticipated not to be sufficient to meet the reasonable needs for medical care of patients, assessed in accordance with standards operating outside the time of a pandemic. It follows that the Health and Community Services will not be able to provide medical care to all patients with ability to benefit. The threshold for access to and continued provision of medical care, and in particular critical care facilities, will therefore have to rise. Decisions on which patients are provided with access to such care or continue to receive such care will need to be made against changing prevailing threshold criteria, depending on the availability of resources. In effect, the HCS system will have to make decisions between patients as to who is and is not provided with access to such services, with serious potential and detrimental consequences for those who are not prioritised, or where care is discontinued.

The choice to set limits on access to treatment is not a discretionary decision, but a necessary response to the overwhelming effects of a pandemic. The question is not whether to set priorities, but how to do so ethically and consistently, rather than basing decisions on individual institutions' approaches or a clinician's intuition in the heat of the moment.

The guiding principle should be that patients with higher clinical likelihood of benefit within a defined timescale have to be given precedence over those with lower levels of likely clinical benefit (Figure 1).

Figure 1: Principle of rationing demand as resource becomes scarce



The framework will be triggered where a clinical assessment is made that the availability of healthcare facilities, and in particular critical care facilities, exceeds the ability of HCS to provide care to those in reasonable need of such facilities, assessed against standards operating outside of the period of a pandemic.

Background

Covid-19 is officially a pandemic. It is a novel infection with serious clinical manifestations, including death, and it has reached at least 124 countries and territories. Although the ultimate course and impact of Covid-19 are uncertain, it is not merely possible but likely that the disease will produce enough severe illness to overwhelm health care infrastructure. Emerging viral pandemics "can place extraordinary and sustained demands on public health and health systems and on providers of essential community services."[1] Such demands will create the need to ration medical equipment and interventions.

[1] Pandemic influenza plan: 2017 update. Washington, DC: Department of Health and Human Services, 2017

Modelling the Covid-19 pandemic is challenging. Of patients infected with Covid-19, early evidence suggests about 15% have severe illness and 5% have critical illness.[2]

Unless the epidemic curve of infected individuals is flattened over a very long period of time the Covid-19 pandemic is likely to cause a shortage of hospital beds, ICU beds, and ventilators. It is also likely to affect the availability of the medical workforce, since doctors and nurses are already becoming ill or are in isolation.

It is likely that Jersey will experience an outbreak and given the finite nature of its critical care and acute medical care facilities (even with additional facilities taken into account), we must be prepared for demand reaching the point where all available resources will be utilised.

The English NHS as yet has not publicly explained how access to intensive care will be determined when there are not sufficient resources to treat everyone. However, the BMA Ethics Committee has published guidance[3] which suggests that decisions should be made as follows:

> *"It is possible we could reach a point where the decisions made in triage will determine whether potentially large numbers of individuals will receive life-saving treatment or not. It is essential therefore that the principles underlying the decisions are systematically applied. In these circumstances it is likely that priority will ordinarily be given to those whose conditions are the most urgent, the least complex, and who are likely to live the longest, thereby maximising overall benefit in terms of reduced mortality and morbidity. Priority decisions will be dependent upon the relationship between the availability of resources and the demand. If serious depletion of resources arises, decisions about which patients should receive treatment will change over the course of the pandemic"*

It is hoped that should the need arise NHSE[4] (not the Royal Colleges or relevant societies) will issue 'authority' to use 'triage by resource' (declining a patient on the basis of capacity rather than the usual triage by likely outcome/benefit). The Intensive Care Society is clear that nobody should triage until everybody triages (which should be a national decision). However, in practice, local decisions in the NHS are already being made about who is granted access to critical care services, and in particular ventilator and CPAP services despite the absence of guidance[5].

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[2] Wu Z, McGoogan JM. Characteristics of and important lessons from the coronavirus disease 2019 (COVID-19) outbreak in China: summary of a report of 72 314 cases from the Chinese Centre for Disease Control and Prevention. JAMA 2020 February 24 (Epub ahead of print).

[3] See https://www.bma.org.uk/media/2226/bma-covid-19-ethics-guidance.pdf

[4] There are reports that the Chief Medical Officer has been keen to publish such guidance but that there is some reluctance on the part of others to do so. The precise position is unclear and thus it is not known whether guidance will be published and, if so, when.

[5] See for example the report at https://www.theguardian.com/society/2020/apr/02/london-hospital-almost-runs-out-oxygen-coronavirus-patients which suggests that rationing is required to ensure that hospital supplies of oxygen do not run out.

Critical care is a networked service on the mainland and until the last bed in the last hospital is occupied, there are always options. Jersey may reach maximum capacity before such guidance has been issued by NHSE and therefore legal and political discussions have pro-actively taken place in preparation for the possible need to institute resource-based triage on island, as well as authorising crisis standards of care in other areas.

These principles apply to access to services in Jersey. Where NHS services are required, requests will be made but decision as to whether access to NHS services will be granted to Jersey patients will be made by NHS staff and are thus outside the scope of this document. However, any tightening of NHS criteria will lead to an increase in demand for patients to be treated in Jersey.

Under normal circumstances, ethical guidance with regards to allocating critical care relates to withholding or withdrawing treatment for an individual in relation to the individual's clinical condition and the individual's (or proxy's) expressed or known wishes, rather than the need to prioritise care owing to serious and on-going lack of resources. There is a need for an explicit description of an ethical basis of decision making at high levels of demand.

Statement of Ethical Principles

In addition to following guiding ethical principles, HCS as a public authority is bound to act in a manner compatible with the European Convention on Human Rights. HCS is mindful of its obligations in this regard, in addition to other applicable international conventions such as the United Nations Convention on the Rights of the Child.

The following principles apply equally to adults and children:

- Every human life[6], regardless of age, gender, race, ethnicity, religion, political affiliation, social or economic status, or disability(physical and mental) is considered equal.

- It is illegal to discriminate against someone because of any of the 'protected characteristics' (age, disability, gender reassignment, marriage and civil partnership, pregnancy and maternity, race, religion or belief, sex, and sexual orientation).

- There is an ethical duty to allocate limited resources (critical care) where they can be of greatest benefit. This means that resources are allocated to ensure the greatest number of lives can be saved.

- There is no ethical difference between withholding and withdrawing access to medical facilities[7].

[6] Article 2 of the EHR Act states "Everyone's right to life shall be protected by law. No one shall be deprived of his life intentionally".
[7] See for example the Royal College of Paediatrics and Child Health Guidance on Withholding and Withdrawing Care for children with life-limiting and life threatening conditions (2004).

- It is unethical to allocate limited healthcare resources to those who cannot realistically be expected to benefit from them.

- The overarching aim is to provide the "most for the most" in situations where resources are scarce.

- All people in Jersey must have equitable access to critical care, determined only by clinical assessment of the benefit to the individual, but with explicit understanding that the threshold will increase as available critical care capacity reduces.

- When it is decided that resources (critical care) are to be allocated preferentially to individuals with lower levels of pre-existing healthcare need, this must be because these individuals have a greater chance of recovering from the illness and benefiting from the allocation of available resources.

- It is the overarching duty of all healthcare professionals to ensure maximum quality of life and to minimize pain and suffering. This duty of care applies regardless of any decision regarding allocation of limited healthcare resources.

- Not being admitted to intensive care does not mean no treatment. Appropriate supportive or end of life care must be available.

- It is difficult to plan for withholding intensive care/restricting access/limiting duration or type of interventions. However, it would be unethical not to plan.

Applying the Principles

All decisions must be reasonable and guided by the principles. There are a number of issues to address to ensure decision making is reasonable:

- The exceptional demand scenario;

- Who should make the decision;

- How the decision should be made (and reviewed);

- How it will be recorded;

- How this process will be quality assured;

- Support structures for clinical staff involved in decision making.

The exceptional demand scenario

In the exceptional demand scenario, the available critical care resource is not sufficient and cannot be provided to all patients with ability to benefit, applying pre-pandemic standards

of healthcare. The threshold for access and/or continued provision of treatment therefore rises. Decisions then need to be made against that higher threshold and in effect therefore between patients. The patient with the higher clinical likelihood of benefit is then given precedence.

Limited time and information in a Covid-19 pandemic make it justifiable to give priority to maximising the number of patients that survive treatment with a reasonable life expectancy and to regard maximizing improvements in length of life as a subordinate aim.

Because maximising benefit is paramount in a pandemic, and there is no ethical distinction between withholding and withdrawing care, removing a patient from a ventilator or an ICU bed to provide it to others in need is also justifiable. Patients should be made aware of this possibility at admission. Undoubtedly, withdrawing ventilators or ICU support from patients who arrived earlier to save those with better prognosis will be extremely psychologically traumatic for clinicians and some may be reluctant to do it. However, many guidelines agree that the decision to withdraw a scarce resource to save others is not an act of killing and does not require the patient's consent. Initially allocating beds and ventilators according to the value of maximizing benefits could help reduce the need for withdrawal.

It is important to recognise that the exceptional demand scenario will be played out across the health system concurrently so similar ethical issues will arise where demand for, for example, acute medical beds exceeds capacity and decisions need to be made how to allocate them.

The National Institute for Health and Care Excellence has produced rapid guidelines for physicians to guide appropriate referral for consideration of critical care[8]-these guidelines are complementary to the critical care triage plans.

Who makes the decision?

As the decision is predicated on ability to benefit from a clinical intervention then only intensive care clinicians can make the decision on access to critical care. This is the usual process, occurring every day when clinicians determine if a patient with specific clinical needs can benefit or not from critical care support. However, in the exceptional demand situation the decision is made against a much higher threshold of ability to benefit.

In the event of a critical care surge that overwhelms capacity, HCS must implement a uniform triage process within the context of crisis standards of care[9].

Critical care should only be rationed when it is clear that the demand for medical resources exceeds the usual ability of the healthcare system to deliver services to meet reasonable needs. A Government-approved decision-making process is needed to provide both clarity

[8] National Institute for Health and Care Excellence. COVID-19 rapid guideline: critical care NICE guideline [NG159] Published date: March 2020.

[9] Christian MD, Sprung CL, King MA, *et al.* Triage: care of the critically ill and injured during pandemics and disasters: CHEST consensus statement. *Chest* 2014; **146**: e61S–74S.

and legitimacy to decisions about which residents will and will not get access to medical services.

The health system will provide oversight for any triage decisions made under their authority via activation of 'Crisis Standards of Care Protocols' which may include triage to ensure they comply with the prescribed process and include appropriate documentation.

Once a triage policy is initiated, a central process to update the triage protocol is required so that as information regarding demand and resource availability changes the most effective allocation of resources can continue to occur.

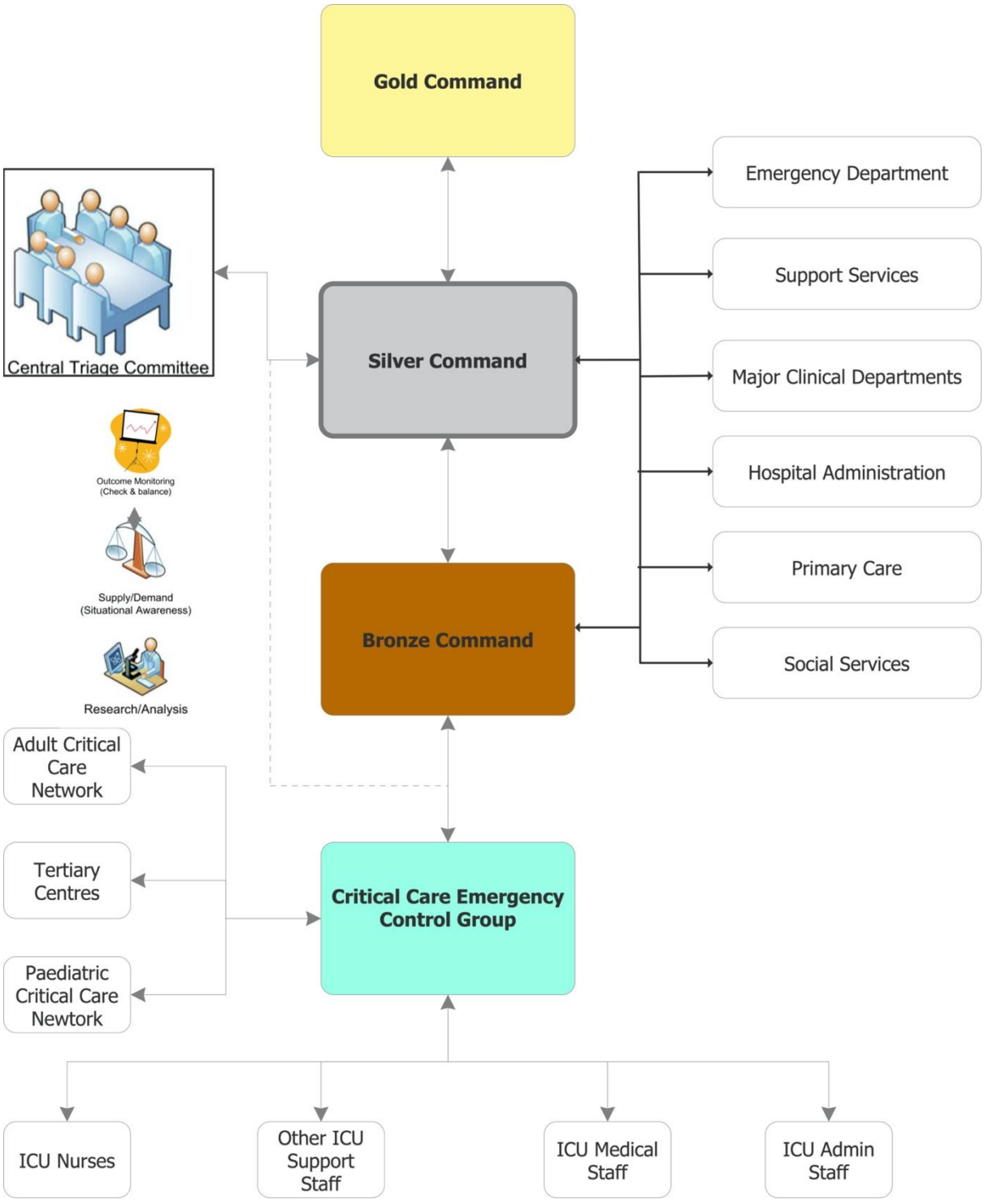
The health system needs to establish in advance a formal legal and systematic structure for triage in order to facilitate effective implementation of triage in the event of an overwhelming disaster.

It is unfair, inefficient, and potentially cruel to leave clinicians to take ad hoc rationing choices during an epidemic without good guidance, support, and protection. It is the duty of responsible government to facilitate the development of crisis standards of care protocols to support clinicians and planners across a spectrum of care, including extreme cases in which clinicians could be forced to choose who lives and who dies.

Whilst it can be expected that clinicians will adhere to the good practice guidelines set out by their relevant professional bodies it is essential that legal protection be afforded to clinicians who may be asked to practice in austere circumstances and beyond the scope of their normal day to day practice.

Figure 2. shows the HCS structures for managing the triage process which are closely aligned to the command and control processes already in place.

Figure 2: Governance of Triage and Crisis Standards of Care Process in the Health and Community Services Department



See Appendix 1 for the terms of reference for the Critical Care Emergency Control Group.

The role of the Central Triage Committee

The anguish that clinicians may experience when asked to withdraw ventilators or other forms of life sustaining treatment for reasons not related to the welfare of their patients should not be underestimated: it may lead to debilitating distress for some clinicians. One strategy for avoiding this tragic outcome is to use a triage committee to buffer clinicians from this potential harm. The Central Triage Committee should be composed of volunteers who are respected clinicians and leaders among their peers and the medical community.

Advantages of this approach are that it allows the physicians and nurses caring for the patients to maintain their traditional roles as fiduciary advocates, including the opportunity to appeal the initial decision of the critical care team when appropriate, although an appeal will not prevent the critical care team decision taking effect. While working together to ensure consistent and unbiased decisions across patient groups, the committee also has the flexibility to consider factors that may be unique to a given situation. As circumstances change and the availability of ventilators or other such scarce resources increases or decreases, the committee can adjust its rationing criteria to produce the fairest outcomes for the overall body of patients in need of services.

Finally, when a hospital is placed in the unavoidable but tragic role of making decisions that may harm some patients, the use of a committee removes the weight of these choices from any one individual, spreading the burden among all members of the committee, whose broader responsibility is to save the most lives.

See Appendix 2 for the terms of reference for the Central Triage Committee.

Decisions will need to be made urgently and frequently out of hours because access to emergency services will not be possible without a committee decision and any delay, of itself, may prejudice the health of the patient.

The following should be in place:

- Decisions not to accept a person for intensive care in an exceptional demand scenario will be made by two Consultants* and the multidisciplinary team, and recorded using the Critical Care Decision Support Form (Appendix 5). Such decisions can then be reviewed by the Central Triage Committee (see quality assurance) to ensure fairness and to protect the individual clinicians.

(* This will usually be the Consultant Anaesthetist/Intensivist receiving the patient, in discussion with a colleague on the unit or in the Critical Care Emergency Control Group. Out of hours or when services are stretched then this discussion may be with the Consultant referring the patient or another identified Consultant.)

- There must be a shared understanding of the ethical principles across HCS.

- Some members of the clinical teams (who are rightly fully focussed on the needs of the person they are caring for) will find decisions on withholding or restricting

treatment to be very difficult. Decision making in relation to access to critical care will need to be supported by all staff and staff will need to be supported in implementing the decisions.

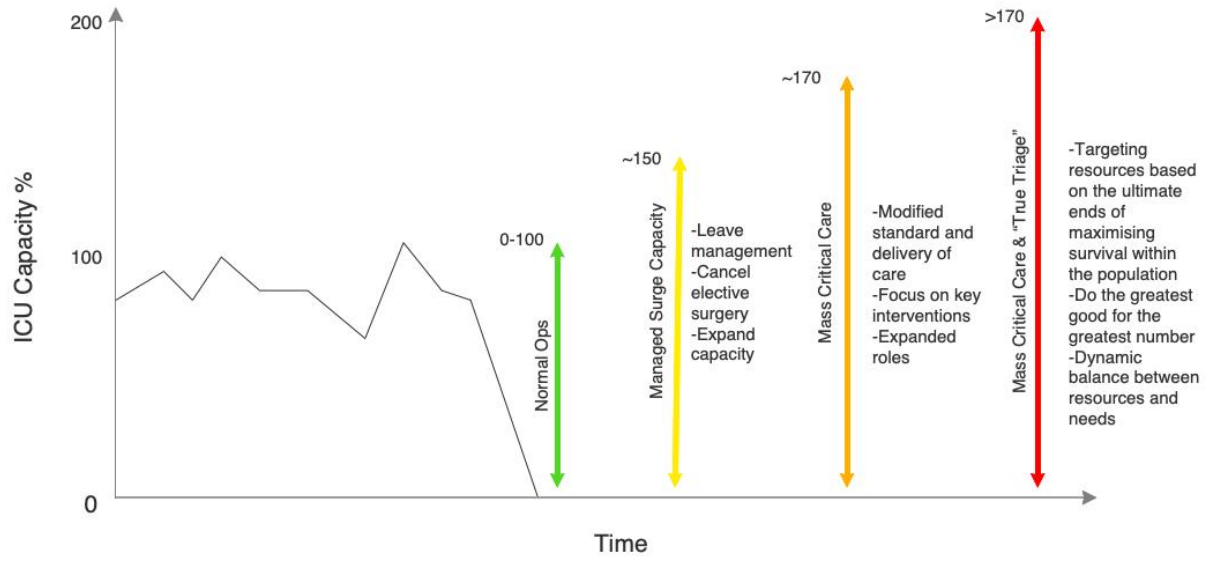
How will decisions be made at clinical level?

Appendix 3 is an algorithm of the decision-making process. The difficulties arise at the final stages:

- Assessing "net benefit" i.e. how to determine who can benefit most clinically from provision of critical care;
- Making a choice when there is no difference in terms of ability to benefit.

In reality the implementation of triage of critical care resources will be a dynamic and phased response (Figure 3).

Figure 3: Phased implementation of critical care triage based on demand-resource imbalance



Due to the current circumstances, the wider critical care network which would be utilised under normal circumstances, cannot be used. Therefore, detailed local plans for HCS critical care resources are in place and a clinical consensus has been reached on the phased response to decreasing ability to meet demand (summary in Appendix 4).

Assessing ability to benefit

- Clinical ability to benefit is the likelihood of recovery to an acceptable quality of life even if at a lower quality than prior to the onset of the condition.

- However, it is essential to take into account that the ability to benefit may well be reduced in an individual with pre-existing clinical conditions and that a person with a pre-existing condition may benefit less from critical care facilities than a person without pre-existing clinical conditions.

- It is the overarching duty of all healthcare professionals to ensure maximum quality of life and to minimize pain and suffering. This duty of care applies regardless of any decision regarding allocation of limited healthcare resources.

- Not being admitted to intensive care does not mean no treatment.

- A number of triage systems have been proposed for use during a pandemic or similar situation (e.g. Sequential Organ Failure Assessment (SOFA) scores), however the use of these remain controversial.

- The clinical evidence to support the use of such triage systems is limited.

- New clinical evidence is emerging, and it may be that subsequent triage systems are more robust.

- There are currently no clinical triage systems for paediatric intensive care.

- Ultimately a clinician needs to defend a decision as being fair, based upon the patient's overall clinical condition and his/her professional judgement at the time, usually after discussion with the clinical team.

- The same approach to capacity to benefit should, as far as possible, be taken for Covid-19 patients and those suffering from other medical conditions.

Making a choice when there is no difference in terms of ability to benefit

The most likely situation is the difficulty in applying the last remaining resource when the individuals are of widely varying age e.g. choice between a 12-year-old and a 64-year-old both with similar disease severity and pre-existing conditions.

There are additional ethical factors which may be considered. There is an ethical argument that proposes that healthcare resources should be redistributed to ensure, in so far as it is possible, that every individual has the opportunity to live for the normal life span in good health. The argument justifies redistributing healthcare away from supporting bonus years, years lived beyond the normal life span, towards meeting the healthcare needs of those who have yet to experience a fair innings.
The ethical approach of 'fair innings' is hugely controversial and there is a right under Article 14 ECHR not to be discriminated against, including on the grounds of age and health status. However, it is likely that a 'fair innings' approach in these challenging and unprecedented circumstances would be considered proportionate (noting that such an

approach should not override clinical ability to benefit) to a legitimate public health objective, such that any impact on the right under Article 14 ECHR would be justifiable.

Finally, when there are large numbers competing on an equal clinical need basis for a single resource, a random allocation process is fairest.

How will this be recorded?

In order to ensure fairness, and protect clinicians, decision making must be recorded in addition to and separately from the individual clinical record for specific patients. NICE has produced guidance which will be adopted by the Critical Care Emergency Control Group (Appendix 5). A line list of all patients where critical care advice is sought is needed with recording of decisions and outcomes.

How will this process be quality assured?

The Critical Care Emergency Control Group will report daily into Bronze and Silver Command Groups who will provide logging of triage decisions and tracking of patient outcomes. Triage decisions are dynamic and based on several factors, including supply and demand of resources and variables predicting patient outcome. Therefore, as information becomes available, flexible systems and processes must be in place to modify existing protocols and guide oversight and research.

Silver command will provide a Central Triage Committee which will issue clear statements supporting ethical and equitable decision making, endorsed through Gold. It will also provide for an appeals mechanism in case of deviation from an approved process (which may be a prospective or retrospective review) or a clinician request for re-evaluation in light of novel or updated clinical information (prospective).

Support structures for clinical staff involved in decision making

Staff involved in decision making and staff implementing these difficult decisions, need access to support. Peer support will be available from the Critical Care Emergency Control Group and professional support from the Silver Command. Bespoke Psychological support will be available from HCS staff and chaplaincy services are available to provide spiritual support if necessary.

Appendix 1: Terms of reference for Critical Care Emergency Control Group

Critical Care Emergency Control Group (CCECG)
MEETING TERMS OF REFERENCE

Purpose

The purpose the Critical Care Emergency Control Group is to provide a coordinated approach to the management and prioritisation of critical care resources. It will lead department and interdepartmental coordination of critical care activity, assess the ongoing dynamic risk profile and ensure effective communication across the workforce. The group will report to, advise, and escalate risk to the silver command group, who will underwrite decision making.

They will:

- Continuously asses and monitor Critical Care preparedness, capacity and continuity plans.
- Assess, monitor and plan daily service delivery within the available resources.
- Provide a forum for shared leadership and decision making.
- Coordinate regular short meetings/team briefs, with the clinical team to discuss operational issues.
- Maintain oversight of the Health & Safety and Wellbeing of the workforce.
- Maintain oversight of ongoing or emerging patient safety issues/trends.
- Ensuring compliance with statutory and regulatory obligations.

Authority

The group is authorised by Silver Command to undertake any activity within its terms of reference.

Responsibilities

The group will:

- Monitor activity from the hospital bed state data to support early identification of potential patients and assess saturation risk.
- Review the critical care occupancy and dependency rates, staff resources and document the day to day dynamic risk profile and grading.
- Monitor availability of essential drugs and equipment, gas supply and PPE.
- Work with the IPAC team to assess isolation capacity, transmission risk from therapies, monitor environmental cleaning, waste management and assessment of the risk profile.
- Monitor staff wellbeing including sickness absence, assess the need for debriefing and TRiM.

- Ensure that there is a process in place to monitor and promote compliance with agreed emergency clinical standards and guidelines.
- Exchange information between key decision makers, stakeholders and care groups
- Provide guidance for ongoing training and education needs of staff.
- Escalate to Silver Command any identified unresolved issues arising that pose significant threats to patient or staff safety and the operation, resources or reputation of HCS

Membership

To include:

- ICU Consultant Staff
- ICU Manager or nominated deputy (Chair)
- Theatre Manager or nominated deputy
- Nurse in Charge of ICU
- AMD Unscheduled Care or nominated deputy

Accountability and Reporting

Accountable to the AMD Unscheduled Care with reporting to Bronze command for operational issues and Silver Command/Critical Care Triage Committee for triage and ethical issues.

Conduct of business and administrative matters

This group shall conduct its meeting in accordance with these Terms of Reference.

The quorum of this meeting is at least 2 ICU consultants and at least 2 senior nursing staff.

The group shall determine the frequency of its meetings, but it is expected that the group shall meet in person at least daily. The Chair may request an extraordinary meeting at any time they consider one to be necessary.

Appendix 2: Terms of reference for Central Triage Committee

Central Triage Committee
TERMS OF REFERENCE

Purpose

The purpose the Central Triage Committee Group, is to provide a governance structure surrounding fair allocation of resources, ensuring these are informed by ethical values and recommendations set out in the document 'Ethical Framework for utilisation of critical care for all patients in response to Covid-19 crisis' March 2020.

The triage committee will have no clinical responsibility for the care of the patient and will be a resource and support for clinicians experiencing uncertainty when facing unprecedented crisis conditions.

They will:

- Oversee the decisions made by the critical care team as to which individuals should be granted access to critical care facilities in circumstances where this policy is being operated.
- Record those decisions.
- When called upon to do so by a patient or family, appoint 2 other consultants and one non-clinician to hear an appeal against any such decision, with the appeal committee limiting itself to deciding whether the decision made by the critical care team was one which was reasonably open to the critical care team to make and only changing the decision if it is satisfied that no reasonable critical care team could have come to that decision.
- To undertake reviews of decisions made by the critical care team.
- To operate the systems to seek to ensure, as far as is reasonably practicable, that fair and consistent processes are operated around decision making and to evaluate changes required with variations in resources.
- Provide support, feedback and where necessary critical challenge to clinical decision makers.
- Act as a safeguard to the welfare of key clinical decision makers by spreading the weight of decision making away from one individual.

Authority

The group is authorised by Council of Ministers to undertake any activity within its terms of reference.

Responsibilities

The group will:

- Provide oversight of triage decisions and prescribed process including appropriate documentation.
- Support and contribute to discussion, review and updating of relevant policies and processes.
- Validate procedures to ensure transparency and the ability to maintain public trust in their fairness.
- Ensure that members of the critical care team communicate with relatives
- Ensuring compliance with statutory and regulatory obligations.
- Escalate to Silver Command any identified unresolved issues arising that pose significant threats to patient or staff safety and the operation, resources or reputation of HCS.

Membership

Proposed membership:

- Senior Experienced doctor (not acute medical or intensive care)
- Senior experienced nurse
- Psychiatrist or psychologist
- Political leader
- Lawyer
- Religious leader

It may be necessary for members to have several members from each group in order, should the need arise, to provide cover for decisions for a prolonged period of time over 24 hour periods.

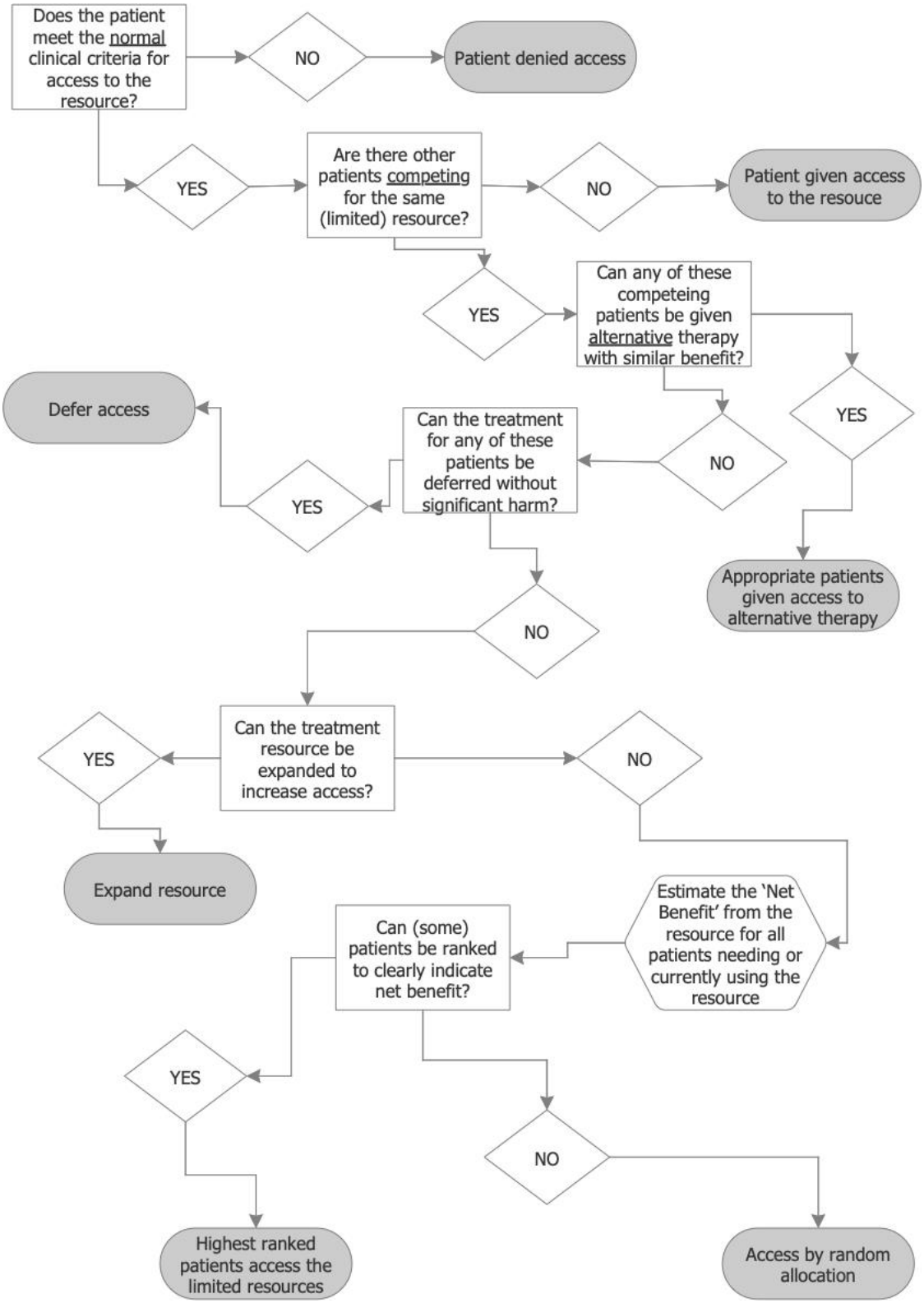
Accountability and Reporting

The Committee will report to HCS Gold and the Council of Ministers.

Conduct of business and administrative matters

This group shall conduct its meeting in accordance with these Terms of Reference.
The quorum of this meeting is at least 4 members.
The group shall determine the frequency of its meetings but it is expected that the group shall meet at least daily. The Chair may request an extraordinary meeting at any time they consider one to be necessary.

Appendix 3: Decision Making Algorithm[10]



[10] Ardagh M. Criteria for prioritising access to healthcare resources in New Zealand during an influenza pandemic or at other times of overwhelming demand. *NZMJ* 2006; **119**: 1243.

Appendix 4: Operational Protocol for Crisis Standards of Critical Care (Covid-19)

Summary

- Should demand for critical care exceed supply then triage of patients will occur
- The decision to ration critical care will be made at system level
- Decisions will not seek to differentiate between Covid-19 patients and other patients.
- Our triage system is based on inclusion and exclusion criteria
- All patients not excluded, and meeting inclusion criteria should be considered for critical care
- Critical care will be withdrawn in those patients who fail a 'trial of care' after reassessment in 72 hours or develop an exclusion criteria
- Exclusion criteria may be modified using physiological scoring systems and/or disease specific criteria, the evidence base for these is week and as such this will be a system level decision
- Should triage fail to address the demand-resource imbalance then specific therapies may need to be withheld for all patients e.g. renal replacement therapy-this will also be a system level decision.

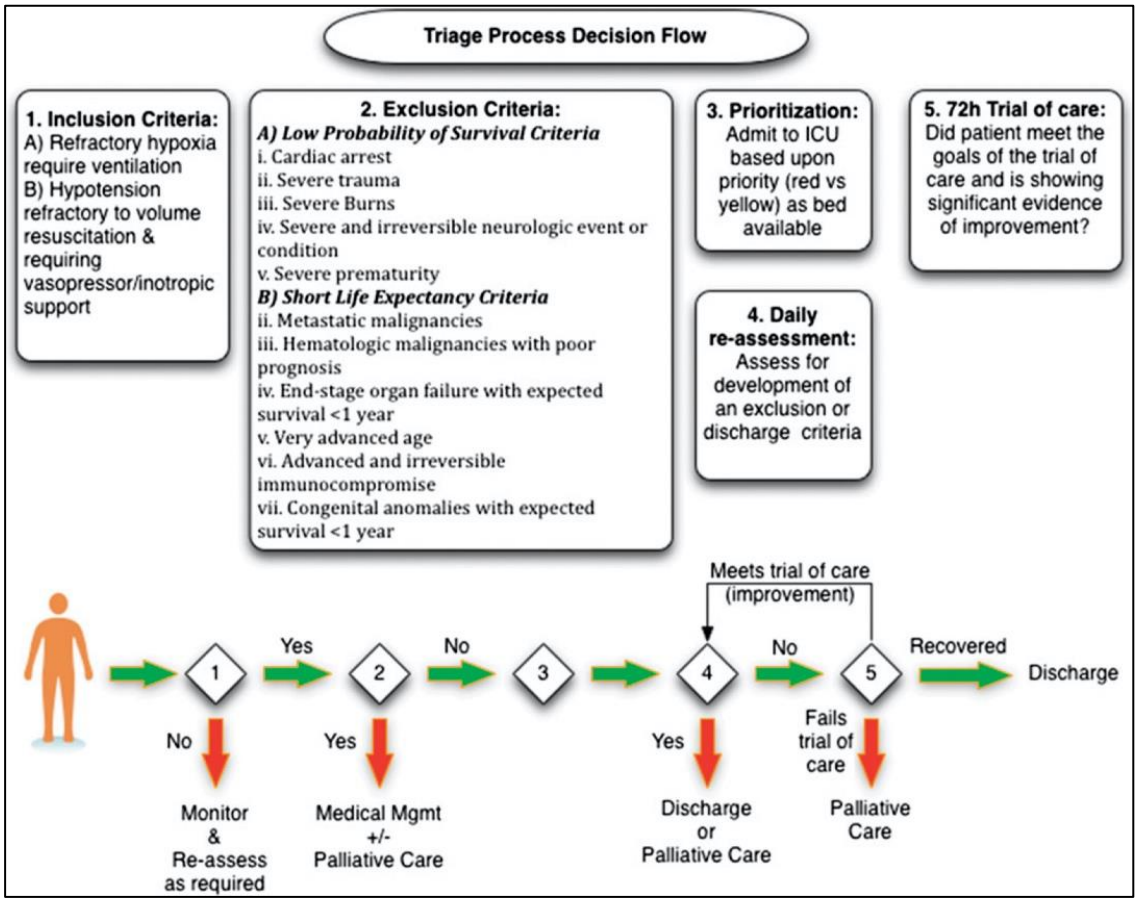
Pandemics may result in large numbers of critically ill patients who may overwhelm available resources despite implementing surge-response strategies. If this occurs, critical care triage, which includes both prioritising patients for care and rationing scarce resources, will be required.

The goal of intensive care is generally considered to be more than survival to hospital discharge, and most would consider that survival for some reasonable length of time in the community is required for a good outcome. Clearly, this duration will be affected by premorbid conditions that severely limit life expectancy. To achieve the greatest benefits from the resources used, it is important to consider a patient's incremental increase in survival in the context of his or her predicted critical care resource consumption.

Currently there are no reliable scoring systems which can reliably predict ICU mortality such that they would be ethical to exclude admission to ICU. There is no evidence base on which to base recommendations on a system of triage for use in pandemic situations. Observational data from the current Covid-19 pandemic suggests risk factors that predict poor outcome but as yet there is no validated scoring system that could be applied to this disease.

The decision to ration critical care should not be made unilaterally at an institutional level because individual teams do not possess the situational awareness in isolation to operationally or ethically justify such a decision. Similarly, the decision to cease triage should occur in a graduated and coordinated manner by altering the prioritisation criteria and exclusion thresholds as resources become available.

A CHEST consensus statement (1) provides guidance on the principles that should be applied in these circumstances based on excluding patients who
can be reliably predicted to have a mortality > 90% and those who have a life expectancy of less than 1 year.



This protocol assumes that normal standards of critical care are deployed for a patient who is admitted, including seeking tertiary referral e.g. ECMO where appropriate. It is recognised however that tertiary provider may themselves employing crisis standards of care. Using this system each patient's condition is reassessed after a suitable time period by the critical care team. If at that point the patient meets the criteria for exclusion from ICU, consideration should be given to withdrawal of therapy. Worsening organ dysfunction in the first 48 hours of a critical care stay is predictive of increased mortality (2).

Should the supply-demand imbalance worsen, then the exclusion criteria will need to be modified. An admission Sequential Organ Failure Assessment (SOFA) score of >11 has been suggested as a tool for predicting significant mortality (3–6), however some studies have demonstrated conflicting evidence regarding mortality rates associated with this threshold (3, 7, 8). Disease specific predictors of mortality could also be employed (such as age > 60, D-Dimer, Co-morbidities) (9–11) however the evidence for their use is absent currently but may emerge as more is learned about the disease. Any decision to modify exclusion criteria should be made at the institutional level via the Central Triage Committee.

Should circumstances deteriorate further then it may be necessary to limit the use of therapies that require extraordinarily expensive equipment or consume extensive staff or hospital resources such as renal replacement therapy. Any such decision to deviate from standard care should be made at institutional level.

Any international or UK guidance that emerges will be considered and reflected in the dynamic changes in the critical care process under the supervision of silver.

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Appendix 5: Critical Care Decision Support Form

Health and Community Services

TO BE COMPLETED BY ICU TEAM

Reproduced from NICE COVID -19 rapid guideline: critical care

Affix Patient Sticker Here	**Hospital Admission Date:** **Date of Assessment:** **Time of Assessment:** **Assessment Number:** *(for repeat assessments)*

Critical Care: Decision Support Form

This form can be used to guide and record the decision-making process regarding the critical care support that a critically ill patient should receive. It is designed to support best practice in decision making.

Evidence: Clinical

(factors in patient's acute condition and long term health relevant to decision about escalating treatment)

Evidence: Ability to recover from this critical illness based on evidence

(e.g.: functional reserve, trajectory of illness, exercise capacity, dependence, self-reported QoL, frailty score)

Evidence: Patient Values and Wishes

(what is important to the patient with regard to their treatment and the potential out-comes? Please note capacity law and advanced decision to refuse treatment (if available). If no information is available please say why.

Please document this source of information: (patient, family or someone close to patient, advance care plan etc)

Balancing burdens and benefits of escalating treatment (based on the evidence in section one)

Benefits of intensive escalation of treatment for this patient (what good may be achieved and what harms avoided? How likely is this?)

Burdens of intensive escalation of treatment for this patient (what harms are likely to occur due to escalating care)

Recommended Treatment

(summary of goals and focus of care, and actual therapy patient is to receive)

Can this care safely be delivered outside ICU/HDU?	**Arrangements for ongoing care/review**
☐ Care required can only be delivered on ICU/HDU	☐ Patient will be admitted to ICU/HDU
☐ Care required can be delivered outside ICU/HDU and resources are available to do this safely	☐ Patient to stay on ward with ongoing ICU or critical care outreach review.
☐ Care required could be delivered outside but ICU/HDU	☐ Patient to say on ward if patients condition changes.

Individuals Contributing to Decision Making

Patient: (please state if no involvement and reason for this): _____

Person Close to Patient: _____

Name: _____

Relationship to Patient: _____

Nature of Involvement: _____

ICU Team

Name: _____ **Signature:** _____

Role: _____ **GMC Number:** _____

Referring Team

Name: _____ **Signature:** _____

Further Information Available – see notes entry dated: _____