

COVID 19: Prioritise Autonomy, Beneficence and Conversations Before Score-based Triage

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Keypoints:

- During the COVID-19 pandemic, overwhelmed healthcare systems use triage scores to ration scarce critical care resources.
- Before applying score-based triage, physicians should discern if the older adult will benefit and also want critical care.
- Discussions to convey clinical information and discern the older person's therapeutic goals are important.
- Conversations aimed at achieving goal-concordant care must become a new clinical norm.

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Abstract: At the start of the COVID-19 pandemic, mounting demand overwhelmed critical care surge capacities, triggering implementation of triage protocols to determine ventilator allocation. Relying on triage scores to ration care, while relieving clinicians from making morally distressing decisions under high situational pressure, distracts clinicians from what is essentially deeply humanistic issues entrenched in this protracted public health crisis. Such an approach will become increasingly untenable as countries flatten their epidemic curves.

Decisions regarding ICU admission are particularly challenging in older people, who are most likely to require critical care, but for whom benefits are most uncertain. Before applying score-based triage, physicians must first discern if older people will benefit from critical care (beneficence) and second, if he wants critical care (autonomy). When deliberating beneficence, physicians should steer away from solely using age-stratified survival probabilities from epidemiological data. Instead, decisions must be based on individualised risk-stratification that encompasses evidence-based predictors of adverse outcomes specific to older adults. Survival will also need to be weighed against burden of treatment, as well as longer-term functional deficits and quality-of-life. By identifying the robust older people who may benefit from critical care, clinicians should proceed to elicit his values and preferences that would determine the treatment most aligned with his best interest. During these dialogues, physicians must truthfully convey the emergent clinical reality, discern the older person's therapeutic goals and discuss the feasibility of achieving them. Given that COVID-19 is here to stay, these conversations aimed at achieving goal-concordant care must become a new clinical norm.

Background

To date, the SARS-CoV-2 pandemic has infected 11 million individuals and caused over 540,000 deaths.¹ At its beginning, mounting healthcare demands threatened to inundate critical care surge capacities. This led to critical care resources being rationed in countries such as Italy, at times based on arbitrary age cut-offs.² Subsequently, score-based rationing protocols were proposed to allocate intensive care unit (ICU) beds swiftly and in a consistent manner while under time and situational pressure. As countries globally flatten their epidemic curves, there may be a short reprieve before lifting of social restrictions leads to successive waves of infection. It is now timely to review the prevailing emphasis on score-based rationing. This approach, rooted in disaster triage, enabled frontline clinicians to avoid challenging conversations in some instances. However, such approaches fail to address the humanistic issues magnified by this crisis, such as those concerning perceived burden of treatment, acceptable quality of life, and antecedent decision-making.

These are particularly pertinent when deliberating ceiling-of-care for older populations. In the United States, individuals aged 65 and above make up 45% of hospitalisations, 53% of ICU admissions and 80% of all deaths from SARS-CoV-2.³ By nature of their physiological vulnerability, older adults are a group likely to require critical care, but for who the benefits of ICU care remain uncertain.

Two questions must be answered before triaging the older people with COVID-19: (1) Will the patient benefit from critical care; and (2) Does the patient want critical care. The first question is founded on the ethical tenet of *beneficence*, whereas the latter is based on respecting patients' *autonomy*. In reality, both questions are closely intertwined. A patient's choice of treatment is a value-based judgment of overall beneficence. It goes beyond a numerical survival probability and encompasses subjective judgment of acceptable quality of life. The answers to both questions can be derived only through

informed and shared decision-making – a process where patients and care-providers openly weigh benefits against burden of critical care, in relation to the patient’s unique values, concerns and social set-up.

Weighing Survival Probability against Burden of Treatment

The UK Intensive Care National Audit and Research Centre (ICNARC) reported SARS-CoV-2 to carry a mortality rate twice as high as that seen in other viral pneumonias (48.6% vs 22%).⁴ Advanced age is associated with more severe disease. Based on data from China, only 1% of individuals in their 20s required hospitalisation, as compared to 11% of those in their 60s and 18% of patients aged above 80.⁵ Similarly, in-hospital mortality is higher at older ages. Amongst 5700 patients from New York City, hospital deaths were reported to be 16% for those aged 60-69; 32% for those aged 70-79; and 54% for those aged 80 and over.⁶ Survival outcomes of the older people remains poor despite critical care. Of 5139 ICU patients in the UK, mortality rates were 40% for patients in their 50s, 55% for those in their 60s and near 65% for patients in their 70s and 80s.⁴

Emerging evidence suggests a close association between greater mortality and overwhelmed healthcare infrastructures. In China, survival rate improves across all age-groups as the point of analysis shifts away from the epicenter at Wuhan.⁷ Similarly, South Korea’s early success at outbreak containment likely contributed to its significantly lower age-adjusted case-fatality than China and Italy.⁸ Nonetheless, current epidemiological evidence shows poor outcomes, particularly for the oldest old.

However, age-stratified epidemiological data should never be indiscriminately extrapolated to individuals in place of bedside risk-stratification. Physicians, advocating for their patient’s best interest, must discern the subgroup of robust older people who may survive if offered critical care. To do so, clinicians will need accurate prognostic tools - unfortunately, none of the COVID-19 triage protocols had

underwent scientific validation. In fact, recent studies have cast serious aspersions over their validity. As an example, several triage standards included the Sequential Organ Failure Assessment (SOFA) score as a measure of multi-organ dysfunction and set arbitrary cut-offs for the purpose of rationing. However, COVID-19 patients presented with predominately isolated respiratory failure leading to low SOFA scores that fell below designated thresholds, rendering these protocols unhelpful.⁹ Perhaps more importantly, current protocols weight their component variables empirically, often with a disproportionate emphasis on chronological age. This is exemplified by NHS's COVID-19 decision-support tool.¹⁰ Under this empirical framework, patients aged seventy and above would only be borderline candidates for ICU care, regardless of physiological reserves. Any further functional deficit or comorbidity would be likely to render them ineligible.

Without a validated triaging tool, critical care may be inequitably allocated according to random chance or on a first-come, first-serve basis. However, stewarding ICU resources based on arbitrary chronological age cut-off is ageist and signals moral indifference towards older people.^{11,12} Age has been too often conflated with frailty, disability and multi-morbidity - which by themselves independently predict adverse outcomes. In particular, the Clinical Frailty Score (CFS) has recently been demonstrated to better predict disease outcome in older patients with COVID-19, than age or comorbidity.¹³ We applaud the inclusion of CFS into the NICE rapid critical care guidelines, but share concerns that non-selective application beyond the older population will disadvantage patients with non-progressive long-term disabilities.¹⁰ Considering the disproportionate morbidity and mortality seen in the infected older patients, there is a pressing need to construct and validate a *multi-component* and *weighted* prognostic index, specific to the critically ill older patients with COVID-19 and ideally incorporating disease-specific indicators for non-COVID-19 conditions, frailty, comorbidity and functional disabilities. Such a tool will be important to inform shared decision-making, but cannot replace these crucial conversations between clinicians, patients and their families.

Putting together the genuine prospects of poorer outcomes, as well as existing challenges in accurate prognostication, physicians must engage older patients in honest discussions, that weigh the likelihood of achieving the quantitative benefit (prolonging survival), against the impact of critical care on the patients' quality of life. Such dialogues must go beyond conveyance of survival probabilities and extend to elucidating patient-centered values that should always play a central role in therapeutic goal-setting.

Anticipating Functional Deficit and Quality of Life Beyond the ICU

ICU survival is often not the fundamental concern for older persons, who may accept greater risks of dying if critical care promises a return to an acceptable level of function, albeit over substantial time. The reverse is equally pertinent.

Qualitative studies consistently report that older adults value cognitive autonomy, functional independence and meaningful engagement in community activities.¹⁴ The subjectivity tied to trade-offs between conflicting goals of longevity and quality of life frequently deters physicians from engaging in such discourses. Yet, no conversation regarding survival probability can be complete without an accompanying discussion regarding the longer-term disabling process consequent to critical illnesses.

Although longer term functional outcomes of COVID-19 are yet unavailable, inferences can be drawn from studies examining older ICU survivors. Moderate worsening of ADLs is common. In a prospective observational study of 309 older adults admitted to a medical ICU, 110 survived to 1-year follow-up. Amongst them, 20% needed assistance in bathing, whereas 10% required help in dressing.¹⁵ Similarly, a randomized trial involving 3036 older ICU survivors (median age 85 years) demonstrated that, despite a systematic strategy to improve enrolment of older patients into ICUs, their 6-month mortality was 45%. Amongst survivors, 64% experienced worsening of function in at least one ADL domain.¹⁶

Deficit in a single ADL may translate to markedly different impact across individuals. Pre-ICU robust older patients are more likely to compensate for milder deficits and are in a better position to regain functional losses over time. Conversely, acquiring the same impairment in a person with existing impairments may precipitate a steep and irreversible loss of ability and quality of life. Contextual factors such as access to rehabilitative services will also be crucial to functional recovery. This will be contingent on individual socio-economic status, as well as the pandemic's disruption to indigenous healthcare infrastructures. Additionally, how functional deficits impact perceived quality of life is heavily coloured by social vulnerability – a broad construct encompassing familial support, living environment, financial affluence, as well as opportunities for community engagement. Considering the complex interplay of biological, psychological and social determinants of quality of life, holistic assessments and value-centered conversations are key to determining the best interest of the patient.

Prioritising Antecedent Discussion on Critical Care

COVID-19 patients typically deteriorate two weeks from the onset of the infection, leaving a critical 5-day period from admission to point of inexorable decline.¹⁷ Beyond this, critically ill patients may no longer be able to engage in meaningful communication. Goals-of-care discussion must be woven into daily consultations during this narrow window of opportunity. Such discussions are rare pre-COVID, and will remain so unless they are prioritized as an indispensable element in the care of all older people, both in pandemic times and after the pandemic has passed.¹⁸ COVID-19 is here to stay, hence goals-of-care discussions cannot remain opportunistic, but must be brought to the forefront as a policy-driven clinical norm. Undoubtedly, there will be impediments to these conversations, such as the mandatory use of face masks and personal protection equipment, as well as restricted visiting policies. However,

these can be circumvented through video-conferencing platforms that have become increasingly accessible owing to the availability of smartphones in the general population.

Conversely, evading these conversations is ethically indefensible. Leaving treatment escalation decisions until a time of crisis deprives patients of an informed choice and risks family members demanding over-aggressive treatment in the heat of the moment. During these dialogues, physicians must truthfully convey the emergent clinical reality, discern therapeutic goals and discuss the feasibility of achieving them. A measured and shared decision to forgo ICU treatment will be far less emotionally burdensome for families than one that involves withdrawing life-sustaining treatment, although the two entities are deemed ethically and legally the same. On the other hand, should the patient stand to benefit and is keen for critical care, their physician should take the opportunity to manage their expectations by framing ICU admission as a trial of treatment rather than the endpoint in care. Palliative care must always be offered as an option, without which patients and families may be misled into demanding critical care out of fear that they would otherwise be forsaken. We enclose an institutional strategy encompassing these key points, that facilitates an expedient bedside conversation. (**Figure 1**).

One major hindrance to these antecedent discussions is the belief that a besieged healthcare system lacks the luxury of time for such lengthy dialogues. Paradoxically, avoiding them earlier in the disease trajectory will lead to more emotionally-charged disputes when ventilators need to be withdrawn, be this due to treatment futility or a failure to reach a triage threshold. Appropriate ceilings-of-care will also prevent medically inappropriate cardiopulmonary resuscitation, reduce contagion exposure to healthcare professionals and streamline ICU resources towards treating patients who want and would benefit from critical care.

As the pandemic slowly turns the corner, we should bring the focus back to having these goals-of-care conversations with our patients. Complex, value-centric decisions are best made conjointly between

patients, their families, as well as the physician whom they trust. Trust will not be found when decisions are justified through rationalization of process-driven and score-based protocols – it lies in humble and humanistic sharing about the possibilities and limitations of modern medicine.

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Figure 1. The POWER tool to facilitate ceiling-of-care discussion

	Objectives	Content
P PERSON	<ul style="list-style-type: none"> To discern key values and concerns that influences the patient's decision. Identify the surrogate decision-maker should the patient loses capacity 	<ul style="list-style-type: none"> What is most important for the patient – longevity or comfort? What constitutes good quality of life for the patient? What is considered unacceptable quality-of-life? Who should be the patient's surrogate should he lose mental capacity?
O PTIONS	<ul style="list-style-type: none"> Lay out and elucidate the options of treatment available. 	<ul style="list-style-type: none"> Intensive care High dependency with Non-invasive Ventilation Maximum care available in the general ward Palliative care that aggressively relieve distressing symptom.
W EIGHING	<ul style="list-style-type: none"> List the advantages and disadvantages of each option. Reference the patient's expressed values and determine which option best benefit his needs. 	<ul style="list-style-type: none"> What are the benefits of each option? What is the associated burden with each option? What is the likelihood of death with each option? Which resuscitative option will best benefit the person's expressed values and goals?
E XPECTATION	<ul style="list-style-type: none"> Modulate the patient and his family's expectations regarding treatment. Assure that palliative care will always be available if life-sustaining treatment is ever withdrawn. 	<ul style="list-style-type: none"> What may happen in the best-case scenario? What may happen in a worst-case scenario? What factors should guide doctors in decision-making if reality falls in between the two? Should his clinical situation worsen, palliative care will be made available to ensure comfort at the end-of-life.
R ECOMMENDATION	<ul style="list-style-type: none"> Summarise key elements in the conversation and put forth a professional recommendation on the extent-of-care. Seek clarification and feedback. 	<ul style="list-style-type: none"> Based on the patient expressed goals of care in (P), the most befitting resuscitative option would be (O). Reasons being that given his current clinical context and his subjective concerns, the benefit of (O) is significant enough for the burden of treatment to be tolerated. In view of his age and frailty status, (O) will be initiated as a <i>trial of treatment</i>. Regardless of the treatment option, palliative care will always be made available to ensure comfort at the end-of-life. Are there any other queries needed to be addressed?

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UNCORRECTED MANUSCRIPT