

Ageing Population

Lessons From the “Very Old Intensive Care Patients” (VIP) Project, *H. Flaatten, B. Guidet, D. deLange*

In Search of a Crystal Ball: Predicting Long-term Outcomes in Critically Ill Older Adults, *S. Jain, L. Ferrante*

Nutritional Management of the Critically Ill Older Adult, *O. Tatucu-Babet, K. Lambell, E. Ridley*

Unmasking the Triumphs, Tragedies, and Opportunities of the COVID-19 Pandemic, *J. Patel, D. Heyland*

What Intensivists Can Learn From Geriatric Medicine, *A. Reid, P. Young*

Ageing and Critical Illness: What Does Quality Care Look Like? *C. Subbe, C. Thorpe, R. Pugh*

Lessons from COVID-19: ICU Preparedness, Ethical Issues and Digital Congresses, *JL Vincent*

Predicament Prevention for Pandemics, *A. Michalsen*
Challenges in the Management of Severe SARS-CoV2 Infection in Elderly Patients, *O. Perez-Nieto, E. Zamarron-Lopez, M. Guerrero-Gutierrez et al.*

Vitamin D in Critical Illness – Fifty Shades of VIOLET, *K. Amrein, P. Zajic, M. Hoffman et al.*

Angiotensin II in Post Cardiopulmonary Bypass Vasoplegia - The Experience So Far, *N. Cutler, J. Signorelli, P. Wieruszewski et al.*

Promising Techniques in Sepsis After Cardiac Surgery, *G. Paternoster, Á. Nagy*

Microtools to Identify and Resuscitate Microcirculatory Dysfunction in Critically Ill Patients, *M. Hilty, C. Ince*

The Future of Critical Care: The Human Capital, *S. Ho, A. Wong, A. Butnar, M. Malbrain*





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Predicament Prevention for Pandemics

COVID-19 has resulted in an enormous demand for critical care personnel and increased consumption of resources. How can healthcare systems prepare for the allocation of scarce resources?

Introduction

Health care crises, like the COVID-19 pandemic, can lead to a pronounced regional, national and even supranational discrepancy between the need for medical care and the ability of the health care systems to provide it. Among others, such need can refer to personnel, pharmaceuticals, equipment, nutrition, or transportation capacity. Specifically in the COVID-19 pandemic, the situation has been aggravated by the fact that to date no widely accepted specific treatment is available, leaving only symptomatic and supportive measures (Wiersinga et al. 2020). This has resulted in an enormous demand for critical care personnel as well as a remarkable consumption of resources, such as personal protective equipment, pharmaceuticals, and ventilators (Wiersinga et al. 2020; Grasselli et al. 2020; Emanuel et al. 2020). In general, whatever the particular shortage may be in a pandemic situation, the respective treating teams need to selectively allot the resources available and hence must make prioritisation decisions. An important task is to base such decisions both on the best knowledge available regarding the respective medical aspects and on ethical values and principles.

Allocation of Scarce Resources in Critical Care

When in health care crises resources

become scarce despite all efforts of a health care system and its institutions, the general pillars of decision-making, i.e. medical indication and informed consent, become superimposed by a triaging process. The treating teams then must make prioritisation decisions as to the allotment of the resources in need. The focus of care, then, will usually need to shift from patient-centred deontology to population-centred utilitarianism. Clearly, this shift needs to result in

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fair and clinically informed processes about scarce resource allocation, and this may include adapting, conserving, substituting, re-using, and re-allocating resources. Additionally, legal stipulations may direct the allocation of resources and may even overrule medical judgement.

During the COVID-19 pandemic, medical societies in several countries have published recommendations regarding the allocation of scarce critical care resources (Marckmann et al. 2020; Jöbges and Biller-Andorno 2020; Truog et al. 2020; Emanuel et al. 2020). They partially

build on recommendations related to former epidemics or on general triage principles, and they are also based on distinct ethical values (Marckmann et al. 2020; Jöbges and Biller-Andorno 2020; White and Lo 2020; Emanuel et al. 2020; Beauchamp and Childress 2019; Nates et al. 2016). Some of these values and recommendations could serve as a general matrix for prioritisation decisions in pandemic situations.

Ethical Values Allotting Scarce Health Care Resources

With regards to the allocation of scarce resources, three core ethical values appear undisputed: treating patients equally; maximising the benefits achievable under the circumstances prevailing; and giving priority to patients with the best odds of success.

Each and every patient is of equal value, and there should be no difference in allocating scarce resources between patients infected with the agent causing the respective pandemic and those not infected with it, but afflicted otherwise. In principle, each patient deserves a fair chance of receiving medical care. However, the odds of success when applying a treatment – i.e. a scarce resource in this context – will not be distributed equally amongst all those in need. Therefore, those with higher odds of success – as defined by transparent and reasoned medical

and ethical criteria in advance – will receive priority for the interventions necessary. Medical determinants with a negative impact on the prognosis need to be described and integrated into the decision-making process as transparent as possible regarding the knowledge available (Marckmann et al. 2020; White and Lo 2020; Emanuel et al. 2020). Neither chronological age alone, though, nor a person's social value, religion, disabilities, or wealth should determine his/her chance to benefit from scarce resources.

Whether maximising benefits means saving more lives – usually measured with mortality predictions – or saving more years of life (in all surviving) – usually assessed by considering co-morbidities – is disputed. Saving more lives is more frequently advocated, though (Marckmann et al. 2020; Peterson et al. 2020; Jöbges and Biller-Andorno 2020; Truog et al. 2020).

A fourth ethical value, giving priority to health care workers and research participants when other factors are equal, has not met the same degree of endorsement, as it raises concerns that those making the rules may be protecting themselves. However, keeping the necessary workforce healthy and alive will benefit others in need, and therefore this notion warrants further deliberation (White and Lo 2020; Truog et al. 2020; Emanuel et al. 2020).

Time and Decision-Making Process of Prioritisation

In clinical practice, there are two primary points in time for prioritisation decisions:

- (1) before scarce resources must be allotted – that is the decision to start or withhold intensive care (life-sustaining) treatments, and
- (2) once scarce resource allotment has already been implemented – that is the decision to continue or withdraw such treatments.

Withholding and withdrawing are mostly assessed as equally justified for the same individual. During pandemics, though, the crucial question might arise whether it is justified that one patient be removed from a specific critical care treatment modality for the sake of another patient who has a higher likelihood of successful through this treatment modality. Referring to the COVID-19 pandemic, there is no concordance as to this difficult question (Marckmann et al. 2020; Jöbges and Biller-Andorno 2020; Peterson et al. 2020; White and Lo 2020; Truog et al. 2020; Emanuel et al. 2020) and, again, legal stipulations may direct this particular decision.

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No matter at what point in the course of a pandemic prioritisation decisions must be made, they are complex and challenging. They will bear grave consequences for “denied” individual patients, and they can contribute or lead to conflicts, moral distress and burnout among staff as well as to emotional distress, signs of depression, and complicated grief among patients and their families (Postolache et al. 2020; Lai et al. 2020; Moss et al. 2016). Hence, it is of utmost importance prioritisation decisions not be taken as discretionary decisions, but taken thoroughly, consistently, proportionately, and transparently as to rules based on medical assessment

and ethical values. Furthermore, these decisions need to be re-evaluated regularly and over a length of time adapted to the course of the respective disease.

Core Recommendations for Fair Allocation of Scarce Medical Resources in Critical Care During a Pandemic

Based on ethical principles and values as well as on scientific publications on epidemics and pandemics, the following recommendations have been formulated:

1. The appropriateness of critical care treatment measures is assessed for every patient in need (not only for those afflicted by the pandemic). If critical care is not indicated, the patient will not be admitted to an ICU or another high-care unit.

2. The patient's informed consent is obtained or verified. If there is no consent (or not any longer), the patient will not be admitted to an ICU. If the patient's wish cannot be ascertained, he/she will be assessed further as if he/she had consented.

3. Once the need for critical care treatment has been determined, the clinical likelihood of its success is reliably assessed according to reasoned and transparent criteria known at the time. Specifically, indicators for low odds of success are monitored. Patients are then either admitted or not admitted to an ICU, according to the individual odds of success.

4. Decisions to change the goal of therapy from cure to comfort care are considered for each and every patient they may apply to (not only for those afflicted by the pandemic) and are taken without delay. Patients so affected will not be admitted to an ICU or will be discharged from the ICU where they are situated. All prioritisation decisions are re-evaluated regularly in adequate time intervals, and especially when the clinical status of the patient or

the availability of resources changes. After deliberation and decision-making within the treating team, the prioritisation decisions will be explained to the patient (or his/her legal representative) and the family in a transparent manner and then documented appropriately.

5. Psychosocial support for patients, families, and staff needs to be available to help cope with difficult individual courses of the respective disease and/or moral distress.

Conclusion

In a pandemic, many critical care resources may become scarce. All patients still need to be given a fair chance to receive

intensive care treatment measures, but the odds of successful treatment will not be distributed equally among all patients in need of the scarce resource. Therefore, in order to prevent predicaments, the treating teams need to selectively allot the resources available and hence must make prioritisation decisions. These decisions must not be discretionary, but consistent, proportional, and transparent – and they must therefore be based on reasoned medical and ethical rules formulated a priori.

Conflict of Interest

None. ■

Key Points

- Pandemics can lead to a pronounced discrepancy between the need for medical care and the ability of the health care system to provide it.
- Prioritisation decisions are then inevitable, and they need to be based on the best medical knowledge available and on ethical values and principles.
- The focus of care will usually need to shift from patient-centred deontology to population-centred utilitarianism.

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