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| Date June 10, 2020 |
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**Concerning:** Manuscript submission

Dear Eric J. Rubin, M.D., Ph.D., Dear editors,

With pleasure we submit our manuscript titled “Utilitarian Distribution of Scarce Surgical Capacity During the COVID-19 Crisis and Beyond: A Modelling Study”. We hope you will consider our work for publication in the New England Journal of Medicine as original research.

The COVID pandemic has put unprecedented pressure on healthcare systems worldwide. This has led to a reduction of the available healthcare capacity. As a consequence, the number of patients waiting for vital surgeries is accumulating and societies face dilemmas about patient prioritization. As stated by Emanuel et al.[[1]](#footnote-1), “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”. Therefore, in this paper, we describe our work in which we developed a decision model that estimates the impact of surgery delay on long-term survival and quality of life based on available evidence. This model can be used for prioritization across disciplines.

We show that basic methods from the decision science field can guide prioritization of surgical care in times of scarcity in surgical capacity from a utilitarian perspective. We made use of a simple Markov model to estimate the long-term consequences of surgery delay. We compared the expected quality adjusted life years (QALYs) for patients in case they get surgery immediately with the expected QALYs for several scenarios of surgery delay. We define and prioritize based on our urgency measures, defined as QALY loss per month of delays. These results can help to minimize health loss when trying to overcome delay in surgeries across disciplines. Moreover, this approach is more transparent, more evidence-based, and more objective than the alternative strategy of triaging based on expert opinion.

We found SHALL WE REPORT SOME RESULTS?

Although this started out of need due to the corona pandemic, this tool is relevant after as well?

Something about validation with surgeons/other triage list?

Placing this tool in the context of different ethical perspectives and combining it with capacity management tools is key to achieving large-scale implementation. In our academic hospital, our preliminary results were received with enthusiasm. The first steps towards implementation have already been taken. This shows that our approach impacts clinical practice.

We believe is extremely relevant for readers of the New England Journal of Medicine. Although, our work was tailored to the context in the Netherlands by using the national registry data a substantial amount of data originated from international sources. Therefore, with some simple modification, the results can easily be applied to different contexts. Moreover, the study can be extended to include a broader scope of surgeries and/or patient populations. Therefore, this study can be considered the first step towards a new triaging strategy which optimizes population health in times of scarcity in surgical capacity, such as during the COVID-19 pandemic.

No funding was received for performing this study. All model inputs were based on public data. The used models and methodologies are described in detail in the manuscript and if the New England Journal of Medicine guidelines allow, we would like to make the code and source data of the model publicly available on GitHub.

Thank you for your considering our manuscript. We look forward to your decision.

Sincerely,

Rob Baatenburg de Jong

Professor Value Based Health Care

1. Emanuel EJ, Persad G, Upshur R, Thome B, Parker M, Glickman A, et al. Fair Allocation of Scarce Medical Resources in the Time of Covid-19. N Engl J Med. 2020;1–7. [↑](#footnote-ref-1)