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| Editorial Office  New England Journal of Medicine  10 Shattuck Street  Boston, MA 02115  USA |  | E-mail : r.j.baatenbrugdejong@erasmusmc.nl |
| Date June 10, 2020 |
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**Concerning:** Manuscript submission

Dear editor,

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. 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 delay. 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 believe is 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 modifications, 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. Although this strategy was conceived during the COVID-19 pandemic, our decision model should also be useful in times of scarcity in surgical capacity due to other causes.

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,

Robert Baatenburg de Jong

Professor of Head and Neck Surgery

Chairman Value Based Health Care ErasmusMC

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)