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Surgery during the COVID-19 pandemic

Authors' reply

Surgery is the major collateral damage of the COVID-19 pandemic. During initial waves, at least 28 million elective operations were cancelled.¹ We thank clinicians and researchers for their responses to our study² that highlighted the remaining knowledge gaps that are preventing surgery from being re-established safely during recovery from the first COVID-19 pandemic wave and in subsequent waves.

Hytham Hamid, Harsha Shanthanna and Vishal Uppal, and Lewis Meecham and colleagues raise issues around the relevance of patient subgroups. Hamid identifies that the benefits of minimally invasive surgery need to be balanced against the theoretical risks of aerosolisation of peritoneal severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). Although we cannot comment on the safety for health-care workers, we are further analysing data to explore the effects of minimally invasive surgery versus open surgery on patients. Shanthanna and Uppal suggest that, in our data, regional anaesthetic techniques might be associated with reduced risk of complications from surgery. However, we advise caution in interpretation of this non-randomised study, in which the type of procedure and anticipated operative risk could have influenced choice of anaesthesia. Meecham and colleagues suggest that venous thromboembolism rates were low, although comparison with historical studies is dependent on the patient mix. We are assessing data from 35 000 elective cancer operations, done during the pandemic, to identify thrombosis rates in patients with and without SARS-CoV-2 infection. This direct comparison will allow us to identify any benefits for enhanced prophylaxis.

Jeremy Rodrigues and colleagues, Joseph Alderman, and

Seenu Vuthaluru and colleagues highlight the unknowns that need to be addressed to prepare for future pandemic waves. Rodrigues and colleagues identify that our study might have missed some patients with asymptomatic SARS-CoV-2 infection, because testing was not routine in early phases of the pandemic, which might have inflated the mortality rate. However, deaths following minor operations and in low-risk groups are generally preventable, and our statements on excess risk stand true. Alderman identifies that the intermediate-term risks of SARS-CoV-2 infection are unknown. We are analysing an early cohort of swab-positive patients whose operation was delayed, to assess whether postponing surgery reduces health risks. Vuthaluru and colleagues highlight the need for accurate risk stratification to plan safe delivery of surgery during future pandemic waves. We are using machine learning to identify patients at lowest risk of pulmonary complications associated with COVID-19, in whom surgery should not be delayed.

In October, 2020, the GlobalSurg-COVIDSurg week cohort study will have captured all inpatient surgeries in over 1400 hospitals worldwide, and we will continue to fill these knowledge gaps using the data from this study.

We declare no competing interests. The views expressed are those of the authors and not necessarily those of the National Health Service, the National Institute for Health Research, or the UK Department of Health and Social Care.

COVIDSurg Collaborative*

a.a.bhangu@bham.ac.uk

*Collaborating authors are listed in the appendix.

NIHR Global Health Research Unit on Global Surgery, Heritage Building, University of Birmingham, Mindelsohn Way, Birmingham, UK, B15 2TH

- 1 COVIDSurg Collaborative. Elective surgery cancellations due to the COVID-19 pandemic: global predictive modelling to inform surgical recovery plans. *Br J Surg* 2020; **11**: 10.1002/bjs.11746.
- 2 COVIDSurg Collaborative. Mortality and pulmonary complications in patients undergoing surgery with perioperative SARS-CoV-2 infection: an international cohort study. *Lancet* 2020; **396**: 27–38.



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See Online for appendix

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