Study reveals pressures on critical care workforce during winter wave of pandemic

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New research published in *Anaesthesia* (a journal of the Association of Anaesthetists) shows the huge pressure that anaesthesia and critical care staff in the UK have been under throughout the winter wave of COVID-19, as the number of newly admitted infected patients surged and most planned surgeries, including a substantial number of critical cancer operations, were canceled.

"These findings have important implications for understanding what has happened during the COVID-19 pandemic, planning recovery and building a system that will better respond to future waves or new epidemics," explains co-author Professor Tim Cook, Consultant in Anaesthesia and Intensive Care Medicine, Royal United Hospitals Bath NHS Foundation Trust, Bath, UK, and Honorary Professor, School of Medicine, University of Bristol, UK.

Between October 2020 and January 2021, the authors conducted three national surveys to track anaesthetic, surgical and critical care activity during the second COVID-19 pandemic wave in the UK—the first round as the November 2020 lockdown was being implemented, the second in December 2020 as restrictions were lifted, and the final survey in February 2021 just after the peak of the new year surge caused by the new Kent (UK) variant of SARS-CoV-2.

They surveyed all NHS hospitals where surgery is undertaken. Response rates, by round, were 64%, 56% and 51%. The surveys showed increasing systemic pressure on anaesthetic and peri-operative services due to the need to support critical care pandemic demands.

There was evidence of significant stress in the system in October and this increased in December 2020 including redeployment of one in six doctors from anaesthesia to critical care, and by December approximately half of critical care units were expanded so much that planned surgery could not be safely undertaken. During this period, almost one in five operating theaters were closed but many hospitals were able to displace surgery to other locations. Overall surgery rates fell by around one quarter compared with similar periods in previous years.

The situation then deteriorated dramatically during the peak of the second surge (January 2021), with responses showing that the system was close to breaking point. Almost half of all operating theaters were closed and those that were open were often running at close to half normal activity. Hospitals were less able to relocate activity to other locations, due to lack of staff.

"The impact on surgery was in part due to a lack of space in which to operate as operating theaters were used as expanded ICUs. But the most important factor was lack of anaesthetists to deliver care as they were redeployed to critical care. In the January peak, almost one in three anaesthetic doctors were unavailable for anaesthetic work as redeployments more than doubled the critical care workforce," explains Prof Cook. "All but a quarter of

critical care units were expanded to the extent that planned surgery could not be safely undertaken. As a result, surgical activity fell massively, with all types of surgery affected. There was important regional variation and in hard-pressed regions, pediatric and non-cancer surgery fell to 12-20% of normal activity and even cancer surgery, usually considered an urgent priority, fell to below half of normal activity."

As long as the UK's exit from lockdown restrictions continues and vaccination rates keep COVID-19 infections low, a rapid decompression is likely to occur whereby critical care units quickly decrease their capacity and the rest of the health system resumes elective and other surgical care. However, tackling the surgical backlog requires working at well above normal capacity for several years and even returning to normality is likely to be challenging. Co-author Dr. Emira Kursumovic says: "Our data illustrate very clearly that anaesthetists—and in all probability other healthcare providers working in operating theaters—have been central in the critical care response to the pandemic, and that they will have been similarly impacted. These staff have had an increased workload and intensity, decreased leave, and psychological burdens including moral injury. The physical and psychological needs of the workforce must be considered in planning recovery of non-COVID healthcare services."

The authors add: "The surveys illustrate the pressure points in the current system. These include space and, most particularly, staff. The fact that critical care expansion requires redeployment of substantial numbers of anaesthetists is likely to have important implications for at least the next year, as critical care services work flexibly to address fluctuations in demand and expand as necessary. This in turn will have important implications for addressing surgical waiting lists. Expansion of both space and the anaesthetic workforce are likely to be inevitable requirements."

Dr. Mike Nathanson, president of the Association of Anaesthetists, said: "These important surveys demonstrate the pressure anaesthetists and anaesthetic departments were under during the pandemic surges. The impact on the mental and physical wellbeing of our colleagues is still being felt. The impact on the health of the nation, in terms of the expanding waiting lists for investigations and surgery, is a huge concern. Workforce shortages and the inability for many of our trainee anaesthetists to progress their careers due to the lack of suitable jobs will accentuate this backlog, even without any further surges."

Professor Ravi Mahajan, president of the Royal College of Anaesthetists, which funded the surveys, said: "These findings confirm the central role anaesthetists played during the pandemic, treating critically ill patients with and without COVID. It is clear that the success of any recovery will hinge on having the right staff, in the right place, at the right time."

He adds: "In the rush to reduce the backlog, however, we must not forget the enormous physical and psychological toll that working in the pandemic has had on anaesthetists. Any attempt to go too fast risks staff cutting back on hours or leaving the profession altogether, jeopardizing the sustainability of the NHS. It is vital that we take onboard the lessons from the past year, so we are able to identify areas for improvement, plan a sustainable NHS recovery and respond more effectively to future pandemics."

More information: E. Kursumovic et al, The impact of COVID?19 on anaesthesia and critical care services in the UK: a serial service evaluation*, *Anaesthesia* (2021). DOI: 10.1111/anae.15512

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