Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

follow-up. COVID-19 ICU survivors will need continued follow-up and support to characterise these psychological sequelae and to help mitigate the effects of this significant life event.

'Long Covid' has been used to describe symptoms in people reporting long-term effects after COVID-19, but we would urge caution in applying this diagnosis to ICU survivors who may simply be experiencing the symptoms and recovery typical of many ARDS survivors.

We have observed significant physical weakness in critically ill patients recovering from COVID-19, highlighting the need for ongoing physical rehabilitation in this patient group. Detailed analysis of both ICU care and follow-up of COVID-19 patients may allow identification of the most favourable management strategies of patients with severe COVID-19 in order to mitigate long-term sequelae.

A limitation of this study is that it is a single-centre review; therefore, our findings may not reflect the outcomes of patients cared for in other ICUs. Furthermore, the number of survivors in whom we report data is relatively small. However, our admission characteristics and detailed descriptors of ICU stay allow other units to make a comparison with their own data. Our results may assist in health service planning and ongoing care and support requirements for an ever-increasing number of mechanically ventilated COVID-19 survivors.

Declarations of interest

GK is an editorial fellow of *British Journal of Anaesthesia*. No other conflicts of interest exist.

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.bja.2021.03.005.

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Rationing oxygen use during total intravenous anaesthesia: a proportionate response?

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Editor—We read with interest Hall and Chakladar's[1] comment on the recent study by Zhong and colleagues[2] of the environmental and economic impacts of fresh gas flow (FGF) during total i.v. anaesthesia. Their concern

about oxygen use during the COVID-19 pandemic sadly remains topical, as the disease continues to overwhelm critical care capacity in many hospitals.

Hall and Chakladar[1] suggest that higher FGF rates during the provision of non-inhalation general anaesthesia should be avoided until after the pandemic has abated, citing reports of hospitals that have experienced oxygen shortages.[1] In the UK, which continues to be severely affected by COVID-19, there have been several cases of oxygen supply issues during surges of hospital admissions. However, this appears not to be as a result of a lack of oxygen *per se*, but the per minute oxygen demand exceeding the flow capacity of supply systems.[3] Internationally, absolute shortages of oxygen have been experienced, for example in sub-Saharan Africa.[4] This appears to be largely as a result of economic and infrastructure factors, but is not representative of a global oxygen shortage.

Whilst low-flow anaesthesia should form part of a strategy to cope with exceptional surges in oxygen demand, its potential contribution to this endeavour is unfortunately minimal. The total consumption of oxygen per patient using higher FGFs via a circle system is not as great as it may at first appear when considered in context. Using Hall and Chakladar's[1] example, a 6-h case using FGF of 6 L min−1 and a fraction of inspired oxygen (FiO2) of 0.3 requires 252 L of oxygen. Whilst this may appear to be a large volume, it represents only 0.7 L min−1 of oxygen gas usage; lower than the minimal requirements of even low-flow nasal cannulae.

Furthermore, it has been shown that FiO2 may be significantly lower than the fraction of oxygen *delivered* at low FGFs because of both oxygen consumption and increased rebreathing of exhaled gases by the patient.[5] While Hall and Chakladar[1] suggest that providing an FiO2 of 0.3 at 1 L min−1 requires an oxygen flow of 0.1 L min−1, Hendrickx and colleagues[6] found in their *in vivo* study that oxygen flows of 0.2 L min−1 were required to maintain a steady-state FiO2 of 0.31 within the circle system at a total FGF of 1 L min−1. It is likely that even higher oxygen flow rates would be required for patients with increased oxygen consumption at low FGFs. Consequently, oxygen savings are not proportional to the reduction in FGF for a given FiO2.

During times of extraordinary oxygen demand we agree that clinicians may be required to take all available steps to safely minimise consumption. But even during the COVID-19 pandemic, increasing the FGF from 1 to 6 L min−1 during non-inhalation anaesthesia remains a reasonable option at most times, representing only a 0.5 L min−1 increase in oxygen gas usage when delivering an FiO2 of 0.3.

In addition to its tragic impacts on the health and wellbeing of millions of people, the COVID-19 pandemic is responsible for profound adverse economic and environmental effects.[7,8] Measures that clinicians can take to mitigate these problems, including optimising FGF rates, are perhaps now more relevant than ever.[9]

Declarations of interest

CS is a former member of the editorial board of *BJA Education*. The other authors declare that they have no conflicts of interest.

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Protection of healthcare workers during aerosol-generating procedures with local exhaust ventilation

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