

VIEWPOINT

Prioritizing Access to Surgical Care During the Coronavirus Pandemic

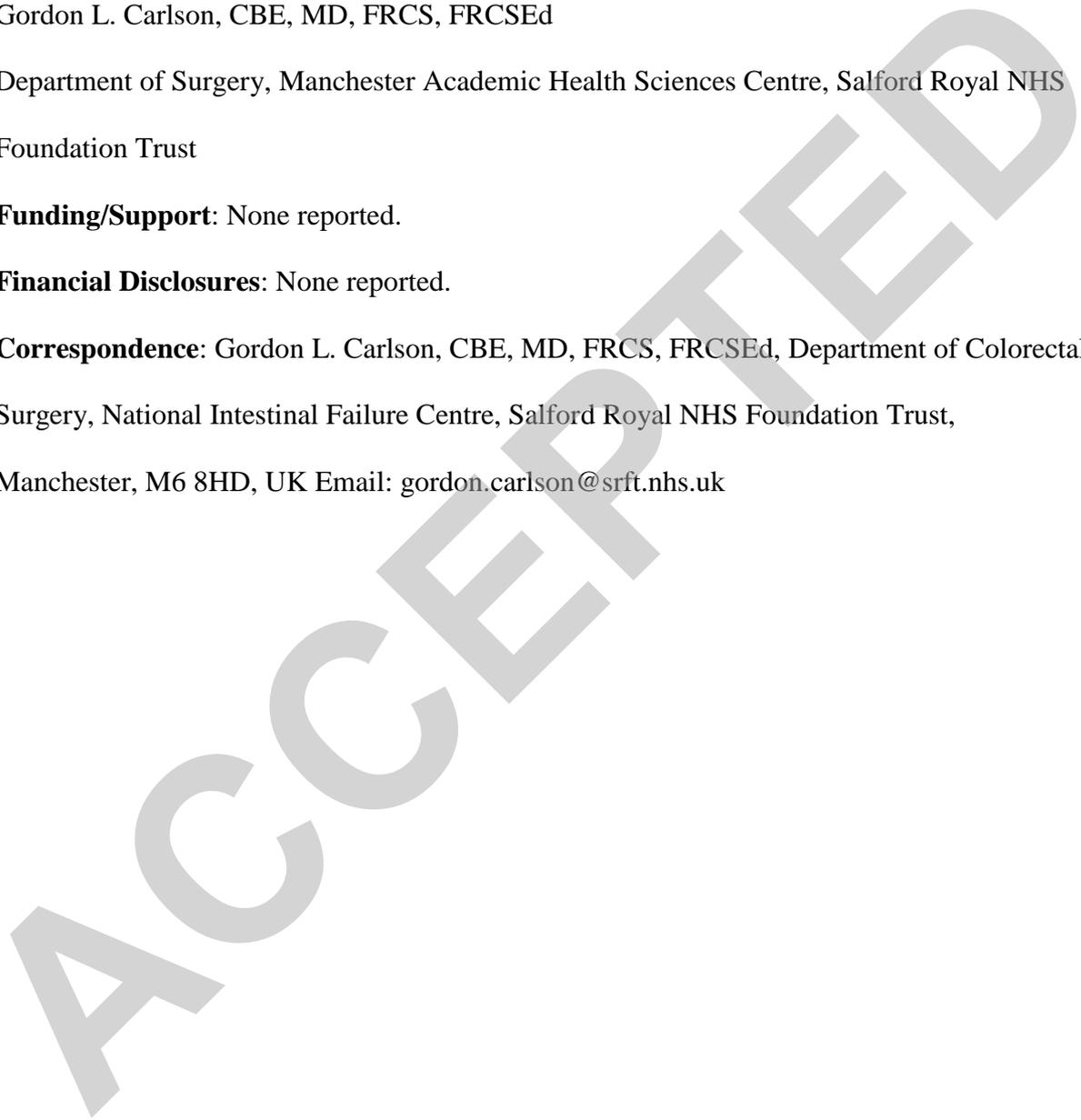
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The Coronavirus pandemic currently presents unique challenges to almost all health care systems. While the ability to care for acutely ill patients with Covid-19 must be the ultimate priority, surgeons of all subspecialties have nevertheless been faced with a series of clinical and ethical dilemmas relating to management of patients without, (or at least not suspected of having) Covid-19, who continue to require surgery with various degree of clinical urgency.

The sudden and drastic erosion of hospital bed, critical care, theatre and anaesthesiology capacity created by the urgent need to accommodate thousands of additional patients with Covid-19 in our hospitals has led to cancellation and suspension of elective surgery for unknown (but probably huge) numbers of patients, including some with malignant disease who would usually be treated as a matter of urgency.

While many hospitals (at least in the UK) are able to deliver emergency surgical care and also have retained some limited elective theatre resources, the manner in which these should be shared between various surgical teams, and how to determine which patients should be offered access to surgical care at all, at a time of almost unparalleled resource restriction, presents considerable moral and ethical dilemmas.

In order to address clinical priority, NHS England have set out a classification of clinical urgency relating to surgical care.¹ While this has been specifically designed in relation to cancer surgery, the classification is equally applicable to any condition amenable to surgical treatment. However, the clinical urgency classification fails to also take into account a major variable which is likely to play a key role in currently determining outcome – the vulnerability of a patient to Covid-19 infection. In the event that a patient contracted Covid-19 while recovering from major surgery, outcome of the infection and/or surgery seem very likely to be affected negatively. It therefore seems logical to build into systems designed to address resource allocation, the anticipated vulnerability of a patient (who might be otherwise

at home, “safely” self -isolating) to Covid-19 in a potentially dangerous hospital environment.

The scoring system developed in Salford, which we present here aims to address this, by creating a simple numerical score, based upon both conventional clinical urgency (priority score 1-4) and the likelihood that the patient under consideration would be expected to have greater Covid-19 related mortality than a healthy individual under 70, or whether their anticipated mortality in the event of infection would be so high as to make admission to an overloaded critical care system futile (vulnerability score 1-3) (Table 1).

A resource allocation score of PxV (the product of clinical urgency and Covid-19 mortality risk) is calculated using the above table, so that a fit patient at high risk of imminent death of underlying disease (P1 or 2) and unlikely to have excess Covid-19 mortality (V1) would score 1 or 2 (and get urgent surgical treatment), whereas a patient with a non-immediately life threatening condition (P4) for which surgical treatment could be safely be delayed for 12 weeks and who would not, as a result of severe pre-existing medical comorbidity, be intubated etc. should they develop Covid and respiratory failure (V3) would score 12 and a decision might be made not proceed to offer surgery until the current resource position, or the patient’s circumstances changed.

The Salford score described herein provides clinicians with a simple, numerical descriptor of both the urgency with which the patient requires surgery and the likelihood that the outcome of that surgery would be negatively influenced by Covid-19. The score has so far proved valuable in addressing the prioritization of access to surgery both within and also between hospital departments. It allows rapid and dispassionate matching of clinical capacity to the needs of a patient population with varying pathologies and comorbidity and has so far proved useful in our organization and in others in the UK.

The score clearly has considerable scientific weaknesses. It has not been scientifically validated and the criteria selected have been based upon what appears to be clinical common sense and reason, rather than mathematical modelling. While it would be desirable to evaluate the score prospectively, it remains unclear how this could be usefully accomplished in the rapid time scale required. We invite surgical colleagues around the world to use the score for themselves and, where appropriate, tailor it to the needs of their own healthcare systems and unique circumstances, in order to support patient selection for surgery in these difficult and demanding times.

ACCEPTED

References

1. NHS England clinical guide for the management of cancer patients during the coronavirus pandemic (<https://www.england.nhs.uk/coronavirus/wp-content/uploads/sites/52/2020/03/speciafglty-guide-acute-treatment-cancer-23-march-2020.pdf>). Accessed March 31, 2020.

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Table 1.

Clinical Treatment Priority*

Priority	Descriptor	Comment	Score
P1	Emergency – operation needed within 24 hours to save life or limb	Massive bleeding, intestinal perforation, spreading infection, generalised peritonitis.	1
P2	Urgent – operation needed within 72 hours to save life or limb*.	Intestinal obstruction, bleeding, localised infection, IBD failing to respond to medical treatment, to prevent permanent injury/harm, e.g .spinal cord compression.	2
P3	Elective surgery within 4 weeks and with expectation of cure for cancer surgery*.	Urgency based on need to prevent progression of disease beyond operability, prevent imminent development of complications (e.g. impending obstruction or perforation). NB use of interventional radiology, e.g. stents should be considered to allow surgery to be deferred in selected cases.	3
P4	Elective – surgery could be safely deferred for 10-12 weeks with no predicted negative outcome	Some tumours, hernias, surgery for uncomplicated IBD, reversal Hartmann's, joint replacement, benign gynaecology	4

Patient Vulnerability

Degree of vulnerability	Descriptor	Comment	Score
V1	Not vulnerable	Unlikely to have excess mortality (compared to a completely fit individual < 70 years old) in the event of Covid-19 infection	1
V2	Vulnerable	Likely to have significant excess mortality compared to a completely fit individual < 70 years old in the event of Covid-19 infection, but would ordinarily receive all supportive measures, including imechanical ventilation in that eventuality	2
V3	Extremely vulnerable	Extremely likely to succumb to Covid-19 infection and would not ordinarily receive invasive ventilation if developed life threatening respiratory failure in that eventuality	3