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EDITORIAL

Rationing care in COVID-19: if we must do it, can we do better?

Abstract

The COVID-19 pandemic has seen a proposal for frailty to be used as a rationing criterion. This commentary suggests circumstances under which that is defensible: in the face of lack of capacity to treat everyone, and as an alternative to age in stratifying risk. How best to stratify risk is likely to evolve and may include information about illness severity and dynamic measures. Current research must focus on mobilizing better, COVID-19-specific prognostic information, with a goal of best discriminating which lives are most and least likely to be saved should scarcity of resources dictate that not everyone can receive critical care.

Keywords: Clinical Frailty Scale, COVID-19, critical care, decision-making, frailty, older people

Key Points

- The Clinical Frailty Scale appears to stratify the risk of mortality in people who are candidates for intensive treatment and in people with COVID-19.
- Ongoing research should continue to test and refine predictive validity, with this and related measures.
- A special emphasis should be put on understanding which groups might systematically be at greatest risk in virtue of the degree of their frailty, and what can be done to mitigate that risk.

This issue of *Age and Ageing* sees a useful commentary about rationing access to critical care of older adults by frailty during the COVID-19 pandemic [1]. Even with recent preliminary evidence in support [2], caution is recommended in decisions based on the Clinical Frailty Scale (CFS), as has been the case in England [3]. The commentary argues that rationing may not accord with patient preferences, even when there is no significant pressure on resources. Using frailty in decision-making may reinforce the socioeconomic gradient—so that people with lower social position fare worse. As remedies it urges first that, especially when the CFS is scored absent a comprehensive geriatric assessment (CGA)—as is seen, despite an emphasis on using the CFS score as part of a holistic assessment [4]—caution be exercised in making decisions. Second, further research is needed both on the short-term predictive validity of the CFS in critical care and on the impact of rationing on and its acceptability to people who live with frailty.

Without imputing to Brocklehurst [5] the notion of a sacred text, we all are the heirs of a millennia-long tradition of exegesis by means of commentary on original work and then comment on the commentary. We can consider the latest critique to answer this question: if we must ration care in pandemic times—for example in a second wave of COVID-19—can we do better?

Necessarily, in the first wave, decisions had to be made with incomplete evidence. Was it reasonable to employ the CFS then? Is it reasonable to do so now? Initial ambivalence [6] reflected that when introduced in 2005, the CFS aimed to summarize the results of a CGA, which in the Canadian Study of Health and Aging had been undertaken with physicians from several disciplines, working in small multidisciplinary teams [7]. Subsequently, it was employed as a screening tool, with use a rationing tool never much entertained then. Shortcomings for the latter application include lack of validation in people under age 65 years and uncertainty about its merit in predicting death and adverse health outcomes when used by people without expertise in frailty. Since then, the CFS has become widely used, especially in the UK, where it commonly is employed in conjunction with the Acute and the Specialty Frailty Networks [8]. In such settings, the CFS summarizes the results of a frailty assessment/CGA as undertaken by a multidisciplinary team.

As for using the CFS now, the arguments initially in its favour in England remain: it is familiar; it grades the degree of frailty, and; that grading reflects the risk of near and longer term adverse health outcomes [2,9,10], including in critical care [11–15]. The CFS has a good theoretical base in reflecting deficit accumulation [16]. Used properly, it takes into account both integrative measures that change as deficits accumulate (e.g. impaired mobility [17] and functional dependence [18]). What remains unknown is how, even with proper use, the predictive validity of the CFS will play out in people with COVID-19. Although the multicentre frailty in COVID-19 study data [2] are supportive, they are not definitive. For example, not knowing what fraction

of people were admitted to a critical care unit means that we cannot discern whether the greater mortality seen in people with greater frailty occurred without such care or in spite of it. We also know that although frailty and illness severity interact, in pre-COVID-19, time estimates of survivorship vary: in a large Australian/New Zealand cohort, people ill enough to require ICU admission showed only an 18% in-hospital mortality, which is on the low end of recent reports [11], versus 52% 30-day mortality of the most medically ill older adults presenting to a Canadian Emergency Department [10]. In short, the call for more research on short-term predictive validity is indubitable. Such research should address not just frailty, but illness severity. If we are to fulfil the duty of informed consent, it must also look at other outcomes, including discharge residence.

What about where to draw the line in relation to frailty? Although the NICE wording reflects that this is a guideline, was the example of considering as inappropriate for care people with a CFS score of 5 or more a reasonable choice? The Australia and New Zealand ICU consortium data would suggest that in the pre-COVID19 era this would exclude too many people who might benefit [11]. The Canadian data suggest that too [10], although both these estimates about the degree of frailty (versus dichotomized scores) come from 'ordinary time', i.e. prior to the pandemic. The multicentre European study reported 31% mortality (134 deaths in 433 cases) of people with COVID-19 and CFS scores of 5 or 6 [2].

Assaying the acceptability of an N% mortality rate can only be answered if we also address the commentary's critique that rationing may not accord with patient preferences, even before resources are scarce. Let us consider two points. For rationing to be permissible, it must be effective. A cut-point only works if, indifferent to their preferences, it excludes people who might otherwise have been offered the care that is to be withheld. In COVID-19, two trends undermine confidence in knowing when resources are scarce: rapid doubling times with a high incidence of respiratory failure and prolonged ventilator dependence for many people who survive [19–21]. Although the semantics of withholding and withdrawing care are commonly held to be ethically identical, extubating a patient against their will is a line that many physicians will not cross. Absent a way to understand how to address when demands for critical care might suddenly surge will inevitably promote a cautious approach to defining resource scarcity. How to factor in acceptability in relation to system resources and opportunity costs is not clear but in pandemic times has less relevance.

This is a difficult pill to swallow, and not just for patients and families. In ordinary time, ethics are optimized for autonomy; with a large degree of leeway, most often people get what they (or their families) insist upon being made available. In a pandemic however, the prime consideration is to offer treatment that can save as many lives as possible [22,23]. For this reason, being able to survive the intervention is of determining importance, especially with an illness that puts providers at risk. Knowing whether the risk is acceptable requires that it be understood, together with the cost (in terms of the degree of suffering and the chance of recovery). As the commentary implies, all this must be clearer.

That this has the unintended consequence of enforcing the social gradient is hard to dispute. Some small mitigation is proffered by the practice that the decisions about admission explicitly be made with an emphasis on consistency and transparency—this will include individual-level data about the severity of illness and the degree of frailty [24]. With this comes the explicit prohibition that the decision is made based on an anonymised case, by a physician who has not seen the patient, or knows their social history, and who thereby would be blind to their social position. The commentary also cautions against using age alone as a rationing criterion; for this, there is widespread agreement [25].

Can we do better? We can, although the challenges are non-trivial. For example, the incorporation of dynamic decision-making—e.g. using the initial response to treatment as a means of understanding prognosis, thereby allowing informative, but time-limited access to intensive treatment [26]—may not hold with COVID-19. This needs testing. In addition to public health measures, we need more data on prognosis and a reliable means of predicting surge in the demand for critical care. Clearly too we need better training in scoring the CFS. Updated educational material about the CFS is becoming available in several formats [27,28]. Inevitably, much of the work will be done—especially outside the UK—by non-geriatricians. Inevitably too this will extend to physicians who hitherto have not had much interest in frailty. In this they must be welcomed, especially those inclined to support and role model empathetic engagement of patients, families and teams. Our group also is recruiting for an international, multicentre study of an algorithm that can guide CFS scoring, to which other sites may wish to contribute.

A second wave will be a challenge that should propel us to make better data available. This obliges concerted research done as transparently as possible, and with high priority—not as an 'if we have any time left over' afterthought. In these extraordinary times, we confront the pandemic in a way that honours the suffering that this illness entails, its challenge to society and the difficulty of the task that we are requiring essential service providers to undertake.

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Declaration of Conflicts of Interest: K.R. has asserted copyright of the Clinical Frailty Scale through Dalhousie University. Use is free for research, education or not-for-profit care. (Users are asked not to change it or

charge for using it.) In addition to academic and hospital appointments, he is President and Chief Science Officer of DGI Clinical, which in the past 5 years has contracts with pharma and device manufacturers (Baxter, Baxalta, Biogen, Shire, Hollister, Nutricia, Roche, Otsuka) on individualized outcome measurement. In 2017, he attended an advisory board meeting with Lundbeck. He is an associate director of the Canadian Consortium on Neurodegeneration in Aging, which is funded by the Canadian Institutes of Health Research (CAN-137794), with additional funding from the Alzheimer Society of Canada and several other charities.

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References

1. Lewis E, Breckons M, Lee R, Dotchin C, Walker R. Rationing care by frailty during the COVID-19 pandemic. Age Ageing 2020.
2. Hewitt J, Carter B, Vilches-Moraga A *et al.* The effect of frailty on survival in patients with COVID-19 (COPE): a multicentre, European, observational cohort study [published online ahead of print, 2020 Jun 30]. Lancet Public Health 2020; 5: e444–e451.
3. https://www.nice.org.uk/guidance/NG159 (14 July 2020, date last accessed).
4. https://www.nice.org.uk/guidance/ng159/resources/critical-care-admission-algorithm-pdf-8708948893
5. Brocklehurst JC. Geriatric services and the day hospital. In: Brocklehurst JC, ed. Textbook of Geriatric Medicine & Gerontology, 2nd edition. London: Churchill Livingston, 1978; 747–62.
6. Hubbard RE, Maier AB, Hilmer SN, Naganathan V, Etherton-Beer C, Rockwood K. Frailty in the face of COVID-19. Age Ageing 2020; 49: 499–500.
7. Rockwood K, Song X, MacKnight C *et al.* A global clinical measure of fitness and frailty in elderly people. CMAJ 2005; 173: 489–95.
8. Conroy S. The acute frailty network - supporting people with frailty and urgent care needs to get home sooner and healthier. Future Health J 2019; 6: 109.
9. Ellis HL, Wan B, Yeung M *et al.* Complementing chronic frailty assessment at hospital admission with an electronic frailty index (FI-Laboratory) comprising routine blood test results. CMAJ 2020; 192: E3–8.
10. Pulok MH, Theou O, van der Valk AM, Rockwood K. The role of illness acuity on the association between frailty and mortality in emergency department patients referred to internal medicine [Published correction in 2020 Jul 24]. Age Ageing 2020: afaa153. doi: 10.1093/ageing/afaa153.
11. Darvall JN, Bellomo R, Paul E *et al.* Frailty in very old critically ill patients in Australia and New Zealand: a population-based cohort study. Med J Aust 2019; 211: 318–23.
12. Muscedere J, Waters B, Varambally A *et al.* The impact of frailty on intensive care unit outcomes: a systematic review and meta-analysis. Intensive Care Med 2017; 43: 1105–22.
13. Aucoin SD, Hao M, Sohi R *et al.* Accuracy and feasibility of clinically applied frailty instruments before surgery: a systematic review and meta-analysis. Anesthesiology 2020; 133: 78–95.
14. McIsaac DI, Harris EP, Hladkowicz E *et al.* Prospective comparison of preoperative predictive performance between 3 leading frailty instruments. Anesth Analg 2020; 131: 263–72.
15. Fernando SM, McIsaac DI, Rochwerg B *et al.* Frailty and invasive mechanical ventilation: association with outcomes, extubation failure, and tracheostomy. Intensive Care Med 2019; 45: 1742–52.
16. Rockwood K, Howlett SE. Age-related deficit accumulation and the diseases of ageing. Mech Ageing Dev 2019; 180: 107–16.
17. Davis DH, Rockwood MR, Mitnitski AB, Rockwood K. Impairments in mobility and balance in relation to frailty. Arch Gerontol Geriatr 2011; 53: 79–83.
18. Theou O, Rockwood MR, Mitnitski A, Rockwood K. Disability and co-morbidity in relation to frailty: how much do they overlap? Arch Gerontol Geriatr 2012; 55: e1–8.
19. Bhatraju PK, Ghassemieh BJ, Nichols M *et al.* Covid-19 in critically ill patients in the Seattle region - case series. N Engl J Med 2020; 382: 2012–22.
20. Cummings MJ, Baldwin MR, Abrams D *et al.* Epidemiology, clinical course, and outcomes of critically ill adults with COVID-19 in New York City: a prospective cohort study. Lancet 2020; 395: 1763–70.
21. Fan E, Beitler JR, Brochard L *et al.* COVID-19-associated acute respiratory distress syndrome: is a different approach to management warranted? [published online ahead of print, 2020 July 6]. Lancet Respir Med 2020; 8: 816–21.
22. National Academies of Sciences, Engineering, and Medicine. Rapid Expert Consultation on Crisis Standards of Care for the COVID-19 Pandemic (March 28, 2020). Washington, DC: National Academies Press, 2020. https://www.nap.edu/catalog/25765/rapid-expert-consultation-on-crisis-standards-of-care-for-the-covid-19-pandemic-march-28-2020 (14 July 2020, date last accessed)
23. World Health Organization. Ethical Considerations in Developing a Public Health Response to Pandemic Influenza. https://www.who.int/csr/resources/publications/WHO_CDS_EPR_GIP_2007_2c.pdf (3 May 2020, date last accessed) p7.
24. Chase J. Caring for frail older adults during COVID-19: integrating public health ethics into clinical practice [published online ahead of print, 2020 June 17]. J Am Geriatr Soc 2020; 68(8): 1666–70.
25. Montero-Odasso HDB, Lam R *et al.* Age alone is not adequate to determine health-care resource allocation during the COVID-19 pandemic. Can Geriatric J 2020; 23: 155–9.
26. Hatheway OL, Mitnitski A, Rockwood K. Frailty affects the initial treatment response and time to recovery of mobility in

acutely ill older adults admitted to hospital. Age Ageing 2017; 46: 920–5.
27. Rockwood K, Theou O. Using the Clinical Frailty Scale in allocating scare health care resources. Can Geriatr J 2020; 23: 210–15.
28. https://play.google.com/store/apps/details?id=com.clinicalfrailtyscale https://apps.apple.com/gb/app/clinical-frailty-scale-cfs/id1508556286

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