

COMMENTARY

The COVID rehabilitation paradox: why we need to protect and develop geriatric rehabilitation services in the face of the pandemic

STEFAN GRUND¹, ADAM L. GORDON^{2,3}, JÜRGEN M. BAUER¹, WILCO P. ACHTERBERG⁴, JOS M. G. A. SCHOLS⁵

¹Center for Geriatric Medicine, Heidelberg University, Agaplesion Bethanien Krankenhaus Heidelberg, Germany

²Division of Medical Sciences and Graduate Entry Medicine, Derby Medical School, Royal Derby Hospital, University of Nottingham, Derby DE22 3NE, UK

³NIHR Applied Research Collaboration-East Midlands, Nottingham, UK

⁴Department of Public Health and Primary Care, Leiden University Medical Center, 2300 Leiden, The Netherlands

⁵Department of Health Services Research, Focusing on Value-based Care and Ageing and Department of Family Medicine, Caphri - Care and Public Health Research Institute, Maastricht University, 6200 Maastricht, The Netherlands

Address correspondence to: Stefan Grund. Tel: 004962213191730; Fax: 004962213191513.
Email: stefan.grund@bethanien-heidelberg.de

Abstract

Older multi-morbid persons often fall seriously ill due to COVID-19. To be able to participate in a social life again, they often need special rehabilitation measures. Geriatric rehabilitation is a multi-professional service geared to these needs. Paradoxically, however, capacities in geriatric rehabilitation are currently being reduced despite increasing demand. The reasons are manifold and are not only due to the current situation. This article highlights the current situation leading to the COVID rehabilitation paradox and shows ways to learn from it for the future.

Keywords: COVID-19, Geriatric Rehabilitation, Paradoxon, Pandemic, older people

Key Points

- Older multi-morbid people are severely affected by the COVID-19 pandemic.
- Older multi-morbid and frail persons have special rehabilitation needs.
- Although there is an increasing need for rehabilitation measures for these persons, rehabilitation capacities are declining.
- This development represents a COVID rehabilitation paradox.

Commentary

Since the start of the COVID-19 pandemic 85.6 million people have fallen ill with COVID-19 and 1.8 million have died [1]. The majority of those with severe disease, requiring hospitalisation and intensive care, has been over 65 years of age and have pre-existing long-term conditions, disability and/or frailty [2–7]. Outside and in the context of COVID-19, there is good evidence that older people with frailty and multimorbidity who survive severe illnesses and intensive care are more likely than younger, fitter groups to experience complications including severe physical deconditioning,

multi-organ failure, pulmonary dysfunction, cognitive decline, post-traumatic stress disorder and post-intensive care syndrome [8–11].

Geriatric rehabilitation uses evidence-based approaches to support the rehabilitation of older people with frailty and multimorbidity after an acute illness. The aim is to enable patients to recover and participate in social life as much as possible. The core principles of geriatric rehabilitation have recently been defined [12]. It is delivered by a multi-professional team comprising nurses, therapists, doctors, social workers, psychologists and other professional groups (e.g. pharmacists) who structure rehabilitation around the

individual needs and goals of the patients and their families in keeping with the principles of comprehensive geriatric assessment [12].

Given the extent to which older people have been affected by COVID-19 during the pandemic, and given the emerging evidence of complex long-term disability as a consequence of SARS-CoV-2 infection ('long-COVID'), there is likely to be a growth in demand for geriatric rehabilitation in the coming months and years. This happens whilst available capacity and resources in geriatric rehabilitation are decreasing because of the pandemic. Internationally, we have seen members of rehabilitation multidisciplinary teams drafted into acute hospitals to support acute COVID care, whilst rehabilitation facilities have been rebadged as subacute medical beds, or have been used to provide COVID-safe step-down beds to shield long-term care facilities and care homes from COVID-positive cases [13,14]. Attempts to 'plug the gap' by providing an additional financial resource to support community-based care [15] have not always been well considered, as they have lacked the necessary rehabilitation infrastructure to enable evidence-based geriatric rehabilitation. Infection prevention and control measures have further depleted resources because social distancing and cohorting requirements mean that the capacity of those facilities that remain is reduced (own data, survey with eight European countries).

This represents a rehabilitation paradox. We need geriatric rehabilitation now more than ever but the very pandemic which has generated unprecedented demand has also depleted the resources needed to meet our patients' needs. The impact of the pandemic on other aspects of healthcare delivery, including cancer care [16] and stroke care [17], has been well documented and has been the focus of much national and international advocacy. We have not seen a similar effort around geriatric rehabilitation and yet it is likely, as those conditions, that the failure to deliver even routine levels of rehabilitation for older patients will have resulted in pent-up demand—an epidemic of frailty and disability which is, as yet, not fully quantified.

Emerging plans for rehabilitation in the face of COVID-19 which rely heavily on the experience of rehabilitation for chronic fatigue syndrome, or which use information technology based solutions [18] are unlikely to fully address the needs of older people with frailty and multimorbidity, many of whom live alone and are unable to engage with such technology due to cognitive, sensory or physical impairment [19].

In the short-term, we must urgently make the case to protect geriatric rehabilitation resources from further denudation. They comprise an important part of the COVID-19 response. Taking resources from them to support the same response is counter-intuitive. As we move into a maintenance and recovery phase of the pandemic, we must ensure that release of resources back to geriatric rehabilitation is prioritised. Understanding the size of the challenge and what interventions will work best in the context of COVID-19

recovery is also essential—data from research studies such as COGER [20] and HERO [21] will be important.

Longer-term we must face the fact that geriatric rehabilitation has, hitherto, been given inadequate priority in health systems internationally [22]. This has manifested differently between countries. In Germany, its development has been stifled by successive shortened rehabilitation periods and partly flat-rate payment systems in post-acute inpatient rehabilitation, which have insufficient flexibility to accommodate the complex needs of the most disabled. Outpatient geriatric rehabilitation service capacities are still insufficient. In the UK, geriatricians have found their training and deployment increasingly focused around acute care delivery at the expense of rehabilitation, whilst arbitrary time-limits on community-based rehabilitation have served, again, to disinvest the most disabled. In the Netherlands, efficiency savings have left the sector, previously the focus of international admiration, with limited flexibility to respond to the pandemic.

The origins of comprehensive geriatric assessment, and of modern geriatric medicine, lie in Marjorie Warren's identification of unmet rehabilitation need in the long-stay patients of the West Middlesex Hospital [23]. Now, as we face a pandemic of unmet rehabilitation need in older people with frailty and multimorbidity, geriatric rehabilitation could play a similarly transformative role if we protect and develop our services to meet the need.

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References

1. COVID-19 Dashboard by the Center for Systems Science and Engineering (CSSE). Johns Hopkins University. (2021). <https://coronavirus.jhu.edu/map.html> (5 January 2021, date last accessed)
2. Cumulative rate of laboratory-confirmed COVID-19-associated hospitalizations in the United States as of September 26, 2020, by age group. Statista. (2020). <https://www.statista.com/statistics/1122354/covid-19-us-hospital-rate-by-age/> (29 December 2020, date last accessed).
3. Phua J, Weng L, Ling L *et al.* Intensive care management of coronavirus disease 2019 (COVID-19): challenges and recommendations. *Lancet Respir Med* 2020; 8: 506–17.
4. Percentage of COVID-19 cases in the United States from February 12 to March 16, 2020 that required intensive care unit (ICU) admission, by age group*. Stat (2020). <https://www.statista.com/statistics/1105420/covid-icu-admission-rates-us-by-age-group/> (29 December 2020, date last accessed)
5. Number of coronavirus disease 2019 (COVID-19) deaths in the U.S. as of December 26, 2020, age*. Stat (2021). <https://www.statista.com/statistics/1191568/reported-deaths-from-covid-by-age-us/> (5 January 2021, date last accessed).

6. Number of coronavirus (COVID-19) deaths in Germany in 2020, by gender and age. Stat (2021). <https://www.statista.com/statistics/1105512/coronavirus-covid-19-deaths-by-gender-germany/> (5 January 2021, date last accessed).
7. Docherty AB, Harrison EM, Green CA *et al.* Features of 20 133 UK patients in hospital with covid-19 using the ISARIC WHO Clinical Characterisation Protocol: prospective observational cohort study. *BMJ* 2020; 369: m1985. doi: [10.1136/bmj.m1985](https://doi.org/10.1136/bmj.m1985).
8. Huang C, Soleimani J, Herasevich S *et al.* Clinical characteristics, treatment, and outcomes of critically ill patients with COVID-19: a scoping review. *Mayo Clin Proc* 2021; 96: 183–202.
9. Steenberg S, Rijkenberg S, Adonis T, Kroeze G, van Stijn I, Endeman H. Long-term treated intensive care patients outcomes: the one-year mortality rate, quality of life, health care use and long-term complications as reported by general practitioners. *BMC Anesthesiol* 2015; 15: 142. doi: [10.1186/s12871-015-0121-x](https://doi.org/10.1186/s12871-015-0121-x).
10. Guidet B, de Lange DW, Boumendil A *et al.* The contribution of frailty, cognition, activity of daily life and comorbidities on outcome in acutely admitted patients over 80 years in European ICUs: the VIP2 study. *Intensive Care Med* 2020; 46: 57–69.
11. Simpson R, Robinson L. Rehabilitation after critical illness in people with COVID-19 infection. *Am J Phys Med Rehabil* 2020; 99: 470–4.
12. Grund S, Gordon AL, van Balen R *et al.* European consensus on core principles and future priorities for geriatric rehabilitation: consensus statement. *Eur Geriatr Med* 2020; 11: 233–8.
13. Designated settings for people with COVID-19 leaving hospital. Care quality Commission. (2020) <https://www.cqc.org.uk/news/stories/designated-settings-people-covid-19-leaving-hospital> (29 December 2021, date last accessed).
14. Third Population Protection Act. Ministry of Health. (2020) https://www.bundesgesundheitsministerium.de/fileadmin/Dateien/3_Downloads/Gesetze_und_Verordnungen/GuV/B/3_BevSchG_BGBl.pdf (29 December 2020, date last accessed).
15. More than half a billion pounds to help people return home from hospital. Press release from Department of Health and Social Care. (2020) <https://www.gov.uk/government/news/more-than-half-a-billion-pounds-to-help-people-return-home-from-hospital> (30 December 2020, date last accessed)
16. Greenwood E, Swanton C. Consequences of COVID-19 for cancer care—a CRUK perspective. *Nat Rev Clin Oncol* 2021; 18: 3–4.
17. Rinkel LA, Prick JCM, Slot RER *et al.* Impact of the COVID-19 outbreak on acute stroke care [Published online ahead of print, 2020 Jul 20]. *J Neurol* 2020. doi: [10.1007/s00415-020-10069-1](https://doi.org/10.1007/s00415-020-10069-1).
18. Xu H, Huang S, Qiu C *et al.* Management of home-quarantined patients with COVID-19 using a WeChat-based telemedicine system: retrospective cohort study. *J Med Internet Res* 2020; 2: 7, e19514. doi: [10.2196/19514](https://doi.org/10.2196/19514).
19. Management of post-acute covid-19 in primary care. *BMJ* 2020; 370: m3026.
20. European Cooperation in geriatric rehabilitation research after COVID-19 (EU-COGER) (2020) https://www.lumc.nl/org/unc-zh/English/Research/EU_COGER_ENGLISHpage/ (30 December 2020, date last accessed).
21. Home-based Extended Rehabilitation for Older people (HERO). (2017) <https://njl-admin.nihr.ac.uk/document/download/2025073> (30 December 2020, date last accessed).
22. Grund S, van Wijngaarden JP, Gordon AL *et al.* EuGMS survey on structures of geriatric rehabilitation across Europe. *Eur Geriatr Med* 2020; 11: 217–32.
23. Matthews DA. Dr. Marjory Warren and the origin of British geriatrics. *J Am Geriatr Soc* 1984; 32: 253–8.

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