



# Multimorbidity and the COVID-19 pandemic – An urgent call to action

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The SARS-CoV-2 virus has infected over 21 million people globally and its disease, COVID-19, is responsible for more than 770,000 deaths.<sup>1</sup> Since discovery, researchers and clinicians across the world have raced to understand how COVID-19 spreads, who is most at risk, and how best to diagnose and treat those infected. Others have been developing vaccines at an unprecedented pace. Meanwhile, policymakers have focused on the difficult balancing act of preserving crashing economies, enabling children to attend school, and people to work while simultaneously trying to control the spread of COVID-19.

A great deal has been learnt about who is at higher risk from COVID-19. It is now recognised that those from minority ethnic or socioeconomically deprived backgrounds and those with specific long-term conditions (LTCs), such as diabetes, are likely to have worse COVID-19 outcomes.<sup>2</sup> However, despite the rising global prevalence of multimorbidity (the presence of  $\geq 2$  LTCs), research on the implications of COVID-19 for those with multimorbidity is sparse. Subsequently, there is no public health advice tailored to this growing proportion of the world's population.

Multimorbidity is strongly associated with mortality in those with COVID-19.<sup>3</sup> Deaths from COVID-19 are a source of a substantial number of years of life lost, even after taking multimorbidity into account.<sup>4</sup> This means that those with multiple LTCs who died from COVID-19 still had many years of life ahead prior to infection. Thus, to prevent this premature mortality, it is imperative to investigate the risks posed by COVID-19 for those with multimorbidity and generate evidence that can determine how best to stratify the risk for people with specific numbers and types of LTCs alongside their sociodemographic characteristics. Such data is crucial to empower clinicians and policymakers to give optimal advice to those with differing patterns and extents of multimorbidity and to reduce the

impact of COVID-19 that is mediated through multimorbidity.

Some early studies have started the process of developing COVID-19 risk stratification for those with multimorbidity. For example, emerging evidence indicates that both multimorbidity (especially cardiometabolic multimorbidity) and polypharmacy (often a proxy for multimorbidity) are associated with a higher risk of COVID-19 infection.<sup>5</sup> In addition, when factors known to be associated with poorer COVID-19 outcomes (e.g. non-white ethnicity, socioeconomic deprivation, and obesity) are combined with multimorbidity, the association with COVID-19 is even starker.<sup>5</sup>

While much public health advice provides substantial information about the increased COVID-19 risks posed by individual LTCs such as cancer or cardiovascular disease there is a glaring absence of information about multimorbidity. Public health resources, such as those from the Centers for Disease Control and Prevention (USA), do not highlight the higher risks of COVID-19 for people with multimorbidity, despite the evidence highlighted here. While there are many patient representative organisations for specific conditions such as Asthma UK, the American Heart Association, and the European Cancer Patient Coalition, organisations that focus on chronic illness in general are rare and fewer, if any, target multimorbidity. Such organisations are a vital and trusted source of information and support for patients, carers, and the public and provide ample advice and information about the risks of COVID-19 to individuals with specific LTCs. In contrast, those with

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multimorbidity remain largely forgotten and disadvantaged through the scarcity of organisations that advocate specifically for those with multiple LTCs and via the absence of information tailored to their complex needs.

This dearth of information and support also means employers are less aware of the risks faced by their employees with multimorbidity. Organisations are therefore less likely to make workplace adaptations that they might do for those affected with single LTCs. Equally, people living with multimorbidity may be unaware of the additional COVID-19 risks associated with having a combination of multiple LTCs as opposed to just one. These issues are particularly important for those already identified as being at higher risk, for example, those of non-white ethnicity.


Here the gaps in research, policy, and practice relating to multimorbidity and COVID-19 are laid bare. Although these gaps potentially represent shortcomings of research funders and the wider public health and health practitioner community, they also represent opportunities for us all to do more to protect those most vulnerable to COVID-19. Consequently, as part of this appeal for urgent action on multimorbidity and to mitigate the devastating impact of COVID-19, we make the following recommendations:

1. Research funders must call for COVID-19 research with a multimorbidity focus.
2. Public health and policy advice that defines and classifies who is at high risk of COVID-19 needs to highlight the increased risks for those living with multimorbidity.
3. Occupational health advice must include and communicate the additional risks and precautions for individuals with multimorbidity, especially for those already known to be at heightened risk.
4. Clinical guidelines need to incorporate the increased risk posed by multimorbidity and specific LTC combinations.

*The Journal of Comorbidity* recognises the importance of understanding more about multimorbidity and COVID-19, and now has a special call for papers which can be found here:

<https://journals.sagepub.com/page/cob/call-for-papers/special-topics/multimorbidity-or-comorbidity-and-covid-19>.

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#### References

1. COVID-19 Dashboard by the Center for Systems Science and Engineering (CSSE) at Johns Hopkins University (JHU), Copyright Johns Hopkins University 2020. <https://coronavirus.jhu.edu/map.html> (accessed 16 August 2020).
2. Williamson EJ, Walker AJ, Bhaskaran K, et al. Factors associated with COVID-19-related death using OpenSAFELY. *Nature* 2020; 584: 430–436.
3. Iaccarino G, Grassi G, Borghi C, et al. Age and multimorbidity predict death among COVID-19 patients: results of the SARS-RAS study of the Italian Society of Hypertension. *Hypertension* 2020; 76: 366–372.
4. Hanlon P, Chadwick F, Shah A, et al. COVID-19 – exploring the implications of long-term condition type and extent of multimorbidity on years of life lost: a modelling study [version 1; peer review: 1 approved]. *Wellcome Open Res* 2020; 5: 75.
5. McQueenie R, Foster H, Jani BD, et al. Multimorbidity, polypharmacy, and COVID-19 infection within the UK Biobank cohort. *PLoS One* 2020; 15(8): e0238091. DOI: 10.1371/journal.pone.0238091.