Facing up to long COVID

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Multiorgan symptoms after COVID-19 are being reported by increasing numbers of patients. They range from cough and shortness of breath, to fatigue, headache, palpitations, chest pain, joint pain, physical limitations, depression, and insomnia, and affect people of varying ages. At the *Lancet*–Chinese Academy of Medical Sciences conference on Nov 23, Bin Cao presented data (in press at *The Lancet*) on the long-term consequences of COVID-19 for patients in Wuhan, and warned that dysfunctions and complications could persist in some discharged patients for at least 6 months. So-called long COVID is a burgeoning health concern and action is needed now to address it.

The occurrence of multiorgan complications is not unexpected, given that the SARS-CoV-2 entry receptor ACE2 is expressed in multiple tissues. Globally, there is a growing response to long COVID. On Dec 3–4, the US National Institute of Allergy and Infectious Diseases held the federal government's first workshop on long COVID. In the UK, the NHS announced the launch of 40 long COVID clinics to tackle persistent symptoms and NICE will release its first clinical guidelines shortly. WHO is planning to update its guidance and resources for clinical management of COVID-19 to include long COVID.

Nevertheless, there is much that remains unknown, and the response to long COVID is still in its infancy. What are the diagnoses, definitions, and phenotypes of illness that are grouped under the term long COVID? How long does it last? Who is at risk of serious or prolonged sequelae? What are the underlying causes and mechanisms? How do we prevent or reduce the effects of such sequelae on patient health and wellbeing? Are there any effective treatments to aid patient recovery and the regain of full function? What rehabilitation is needed?

Robust data and scientific evidence are essential to answer these questions. Large and long-term cohort studies are urgently needed to help better understand the trajectory, complications, and biological mechanisms that drive the long-term health consequences of COVID-19. These studies should include diverse populations, with both hospitalised and non-hospitalised patients, patients from primary and secondary care, and patients from a range of high-income, low-income, and middle-income countries. Minority ethnic groups and older people have been disproportionately affected by the pandemic, so ethnic and demographic factors must also be considered during patient recruitment. Patient perspectives regarding terminology of symptoms and recovery should be incorporated into study designs to ensure clinically meaningful research questions and outcomes. Multidisciplinary, multicentre, and multinational collaborations and approaches to data collection are required. Digital services and systems should be able to collect data on symptoms in real time.

Meanwhile, how do we address long COVID? First, health professionals must listen to patients to understand their concerns, validate their experiences, and manage their symptoms and comorbidities, referring patients as needed. Many patients already feel dismissed or overlooked. Without clear clinical definitions of long COVID, and in the absence of either a diagnostic test or an effective treatment, health professionals are in a difficult position to help their patients. The slowly evolving knowledge of other poorly understood conditions (such as chronic pain and functional disorders) shows the risks for patients who feel that their symptoms are being diminished or ignored. Without clear acknowledgment, honest communication, and careful patient-centred research, patients face unsatisfactory outcomes. Such mistakes must not be repeated for long COVID.

Second, discharged patients should have long-term access to multidisciplinary health care, including rehabilitation services and telehealth, as well as social and financial support. Third, long COVID affects even young adults, so effective public health messaging for such individuals about the risks of infection is warranted. Fourth, primary care services need the capacity to deal with patients with long COVID. Finally, health-care workers themselves are likely to have a high burden of long COVID and they must have adequate occupational health provision.

Although vaccination has become the immediate focus of the pandemic response for many countries, patients with long COVID must not be forgotten or sidelined as countries begin to consider the end of the pandemic. Acknowledging the potential scale of the problem now and the complexities and variabilities of the disease course, and pressing for better research and care, could avoid years of struggle and mismanagement for patients with long COVID. ■ *The Lancet*

For more on the **US National Institute of Allergy and Infectious Diseases workshop** see https://www.niaid.nih.gov/news-events/workshop-post-acute-sequelae-covid-19

For more on the **launch of UK NHS long COVID clinics** see https://www.england.nhs.uk/2020/11/nhs-launches-40-long-covid-clinics-to-tackle-persistent-symptoms/

For **WHO guidance** see https://www.who.int/publications/m/item/support-for-rehabilitation-self-management-after-covid-19-related-illness