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**Transition beyond the acute phase of the COVID-19 pandemic: Need to address the long-term health impacts of COVID-19**

Tsioutis C *et al*. Long-term health impacts of COVID-19

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**Abstract**

Despite gaps in knowledge, long-term sequelae of coronavirus disease 2019 (COVID-19) infections are globally acknowledged and thus require special attention by public health organizations and services. Therefore, it is necessary to support and promote public health initiatives that address long-term disability due to COVID-19.

**Key Words:** Pandemic; COVID-19; Long-term; Long-covid; Post-covid; Post-acute COVID-19 syndrome

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**Core Tip:** Despite publications and announcements focusing on the current transition phase of the coronavirus disease 2019 (COVID-19) pandemic, there is an ongoing need to address the growing population of patients with long-term sequelae due to COVID-19 infection. Therefore, public health organizations and national authorities are required to prepare and support initiatives that can appropriately address long-term disability due to COVID-19. Such initiatives result from close collaboration between health professionals, researchers and patients and span across three pillars: Public health, healthcare systems and research.

**TO THE EDITOR**

Lately, several publications elaborate on public health considerations and priorities regarding the current phase of the coronavirus disease 2019 (COVID-19) pandemic[1]. As we span across the third year of the pandemic, strict horizontal restrictions are gradually lifted, thus giving opportunity for further surges and high numbers of new COVID-19 cases, particularly in the advent of new, more transmissible severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) variants[2]. The effectiveness of vaccines in preventing severe disease, hospitalization and death, has been repeatedly proven, however they have a much lesser effect in preventing disease transmission[3].

Despite significant progress in research and knowledge during the pandemic, several gaps remain, including the extent and severity of long-term health sequelae due to COVID-19[4]. This is the reason why national authorities should sufficiently direct resources into research, surveillance and healthcare capacity, taking into account ongoing and anticipated health impacts due to COVID-19.

There are several reasons to explain for gaps in knowledge concerning long-term impacts of COVID-19 on health. On one hand, the scientific community directed the bulk of its efforts to mitigate disease through non-pharmaceutical interventions, development of therapeutic agents and rapid production of efficacious vaccines. On the other hand, surveillance during the pandemic focused primarily on the direct consequences of SARS-CoV-2 transmission and on population-level indices. However, it is becoming apparent that long-term health consequences due to COVID-19 call for urgent attention. Accumulated disease burden and ongoing transmission are expected to account for extensive and diverse health, social and economic costs, including long-term disability[5]. The unpredictability and variability of symptoms and lack of biochemical markers that could characterize post-acute COVID-19 sequelae often impede prompt detection, leading to underreporting and difficulties in estimating their true prevalence. Detection and management of long-standing post-acute disease, such as long-covid, requires a high degree of awareness and a multifaceted approach, which in turn require specialized professionals and appropriate research and clinical settings. This might also explain for the increasing patient-led initiatives recorded to date, which advocate for further research and for clinical support in the field[6,7].

To this end, the World Health Organization has stressed how policy makers should prepare, by promoting and supporting initiatives through a multidisciplinary approach to long-term disability due to COVID-19[8]. Such initiatives, resulting from close collaboration between health professionals, researchers and patients, span across three pillars: Public health, healthcare systems and research[9].

Public health organizations should implement surveillance systems for early detection of patients with post-acute disease symptoms, create patient registries and establish patient cohorts, while at the same time maintain a high awareness degree among health professionals and the public. Healthcare systems should ensure targeted and evidence-based care to those who have ongoing symptoms after acute infection, by incorporating diagnostic and clinical algorithms in different healthcare levels (including appropriate disease coding), promoting multispecialty management and collaboration and, wherever needed, establishing specialized centers for management, rehabilitation and long-term monitoring. From a research perspective, the clinical course of post-acute disease sequelae remains largely unknown, while diagnostic markers that may help identify and monitor those most at risk are lacking. Furthermore, we are just now elucidating the pathophysiologic mechanisms of distinct clinical syndromes such as long-covid, while appropriately designed clinical trials will help enrich our therapeutic and management protocols, which currently are primarily based on non-pharmaceutical measures.

At the center of these initiatives lies a growing patient population, seeking recognition of their problem and answers to their questions. Pandemic preparedness requires political will, economic and human resources, and social support. These same key elements can help humanity prepare for and manage the long-term health impacts of the pandemic.

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