



Letter to the Editor

XBB.1.16 Omicron subvariant rise to a variant of interest: Implications for global alertness and preparedness



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Dear Editor,

On January 9th, 2023, XBB.1.16 was originally identified, which originated from the hybrid of two BA.2 progeny pedigree and is a descendant of XBB. On March 22nd of the same year, It was initially labeled as a (VUM) variant under monitoring, it was later categorized as a (VOI) variant of interest on April 17th, 2023. XBB.1.16 bears a genetic makeup similar to XBB.1.5, a VOI, with the inclusion of two amino acid mutations (E180V and K478R) in the spike protein when contrasted to its mother XBB.1.¹ The WHO is currently keeping an eye on this newly emerged subvariant of COVID-19 known as XBB.1.16, which is currently spreading in the United States following a previous surge of cases in

India having taken the place of other variants that were previously in circulation in India with a total of 60,300 ongoing COVID-19 cases as of April 17.² On April 17th, 2023, the WHO had a total of 3648 reported sequences of the Omicron XBB.1.16 variant from 33 different countries, with the majority (63.4%) 2314 sequences coming from India, while other nations with a minimum of 50 sequences are Australia (3.9%), the United States (10.9%), the United Kingdom (2.1%), Canada (2.6%), Singapore (6.9%), Japan (2.0%) and Brunei (2.4%). These sequences were identified using the variant defining nucleotide mutations T12730A, T28297C, and A28447G.¹

On April 17, 2023, it was reported that the WHO had elevated the XBB.1.16 Omicron subvariant from a VUM to a variant of interest (VOI), after reviewing the latest assessments from its scientific advisory council on virus evolution.^{1,3} This was prompted from the result of the review stating the fact that XBB.1.16 subvariant has been driving the largest increase in COVID-19 cases in India for approximately seven months. The United States (CDC) Centers for Disease Control and Prevention has announced a further rise in the percentage of cases attributed to XBB.1.16. The occurrence of XBB.1.16 has been on the rise on a global scale, with a weekly increase in its prevalence. In the 13th epidemiological week (March 27th to April 2nd, 2023), the global occurrence of XBB.1.16 rose to 4.15%, which is an increase from 4 weeks earlier (epidemiological week 9, 27 February to 5 March 2023), when the global prevalence was 0.52%.^{1,2} XBB.1.16 also is linked with a 1.27 and 1.17 times higher effective reproductive number (Re) compared to other subvariants making it have a proliferative edge and properties that allow it to evade the

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immune system conveniently, indicating that it has high potential of spreading globally and causing an upsurge in cases. However, at present, there is no evidence to suggest that it leads to more severe illness.^{2,3}

Continual strengthening and integrating a more robust health systems and administration of services as well as fortifying the public health surveillance and health data collection systems in all affected and yet affected countries is crucial for enhancing a coordinated and effective response to XBB.1.16 subvariant and enable health authorities to easily detect, track, and respond to emerging and reemerging strains of the virus. This will promote global alertness and preparedness for both present and future outbreaks in a timely and effective manner.⁴ A concerted international effort to prevent and contain the transmission of this subvariant has been recommended as necessary measures for global management of the XBB.1.16 and similar strains. It is necessary for the world to closely monitor this Omicron subvariant that has the ability to spread faster than other strains and evade immunity while preventing its transmission which is extremely crucial in the global fight against viral outbreaks. However, it is expedient that the world takes decisive steps to minimize the possible dangers posed by the threat as well as establish strong measures for multinational-level readiness and promote comprehensive global health education that emphasizes individual and environmental alertness and preparedness.⁵

Leadership, administration, and finance are critical components of global preparedness to the XBB.1.16 subvariant, as they help ensure that resources are allocated effectively, policies and guidelines are in place, and countries are able to respond to the outbreak in a coordinated and effective manner.⁴ It is important for WHO and country's health officials to prioritize urgent investment in research to investigate and gain further insights into this new variant with the aim of alerting and preparing the global populace for a potential outbreak, and developing treatment options and potential vaccines. Given that pathogens are likely to persist, it is imperative for humans to devise a strategy to effectively counter the dangers they pose to human health.⁵ Implementing the One Health approach has great potential to promote the health and well-being of humans, animals, and ecosystems, and to address emerging health and environmental challenges. However, the practical implementation of this approach globally has been slow and limited, particularly across boundaries, traditions, and economic systems. To fully realize the potential of the One Health approach, it is essential that we overcome these barriers and promote greater collaboration between diverse disciplines and societal levels. By doing so, we can build a more resilient and sustainable future for all.⁶

In conclusion, the COVID-19 pandemic has highlighted the urgent need for multilateral global solutions that brings together all relevant stakeholders to drive pandemic preparedness and response. It is essential that we act now to create comprehensive and coordinated strategies that can effectively address future pandemics. We must work together to establish a framework that can facilitate the rapid dissemination of information, resources, and expertise across borders. Failure to take action now could result in global catastrophic consequences. Therefore, it is

imperative that we prioritize the development of multilateral global solutions to pandemic preparedness and response as a matter of utmost importance. We must heed the warnings and take proactive measures to ensure a safer and more secure future for our planet.⁷ The rise of XBB.1.16 to a variant of interest is a wake-up call for global alertness as well as preparedness for a potential outbreak. The time to act is now.

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Conflict of interest

The authors declare no conflicts of interest.

Ethical approval

Not applicable.

Authors' contribution

OOJ conceived and designed the study, conducted research, provided research materials, collected data, wrote the initial and the final draft of the article, and reviewed the final draft. ONO conceived and designed the study, conducted research, provided research materials, collected data and wrote the initial draft. DELP III conceived and designed the study, conducted research, provided research materials, collected data and wrote the initial draft. OTA conceived and designed the study, conducted research, provided research materials, collected data and wrote the initial draft. AS conceived and designed the study, conducted research, provided research materials, collected data and wrote the initial draft. All authors have critically reviewed and approved the final draft and are responsible for the content and similarity index of the manuscript.

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