LETTER TO EDITOR

The JN.1 Variant of SARS-CoV-2: Public Health Alert or Controlled Threat?

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The recent global rise in cases associated with the JN.1 variant of SARS-CoV-2, a sub lineage of the Omicron variant, calls for urgent scholarly and public health attention. Identified initially in late 2023, JN.1 has rapidly gained prevalence and, by early 2024, became the most dominant circulating strain globally, according to the Centres for Disease Control and Prevention (CDC) (1).

As of mid-December 2023, JN.1 was detected in 41 countries, constituting over 27% of global sequences submitted to GISAID (2). Its increasing dominance can be attributed to mutations that confer heightened transmissibility and partial immune evasion. Despite this, available evidence suggests that JN.1 does not lead to more severe disease outcomes compared to its predecessors (1,3).

The symptomatology of JN.1 largely overlaps with earlier Omicron subvariants—sore throat, fever, fatigue, headache, cough, and anosmia remain prominent (4). Between January 6 and February 2, 2025, more than 147,000 new COVID-19 cases and around 4,500 deaths were reported globally, with deaths increasing by 28% compared to the prior period (5). Though the case fatality rate remains relatively stable, the sheer transmissibility of JN.1 may place healthcare systems under renewed stress.

Vaccines continue to offer robust protection against severe illness and hospitalization. Antiviral agents such as Paxlovid and Veklury remain effective against this sub lineage (6). The CDC now recommends updated vaccinations for all individuals aged six months and older, targeting JN.1 and its related lineages (7). However, suboptimal global vaccine coverage, compounded by pandemic fatigue and misinformation, threatens containment efforts.

Public health measures such as masking in crowded settings, hand hygiene, and improved indoor ventilation remain cornerstones of transmission control (8). Moreover, adaptive strategies that leverage real-time genomic surveillance and local epidemiologic intelligence will be critical.

While JN.1 does not currently present a high level of severity, the situation is dynamic. Continued viral evolution could generate further sub lineages with unpredictable characteristics. The FDA has already advised updating vaccine formulations for the 2025–2026 cycle to target JN.1 (9). Future preparedness must also address challenges such as limited data from diverse population subgroups and evolving nonclinical models.

In conclusion, JN.1 represents a notable development in the ongoing COVID-19

landscape. Though not currently classified as a variant of concern, its trajectory demands vigilance. With strategic vaccination efforts, enhanced surveillance, and public cooperation, the global health community can pre-empt its potential transition into a renewed pandemic threat.

Declaration Of Generative AI And AI Assisted Technologies

In The Writing Process During the preparation of this work, the author(s) used *OpenAI* in order to assist with language refinement, reference formatting, and structuring of the manuscript. After using this tool, the author(s) reviewed and edited the content as needed and take full responsibility for the content of the publication. Dr. Anita Khokhar

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