

EDITORIAL

Resurgence of Measles in Bangladesh: The Cost of Immunization Gaps - an editorial

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Bangladesh has long been celebrated as one of global health's most remarkable success stories. Through an extensive Expanded Programme on Immunization (EPI), high community engagement, and repeated supplementary immunization activities, the country achieved dramatic reductions in childhood mortality and moved steadily towards measles elimination. Yet, the ongoing resurgence of measles has exposed an uncomfortable reality: achievements in infectious disease control are reversible when immunization systems weaken ^[1].

Measles is among the most contagious infectious diseases known to medicine, with a basic reproductive number exceeding that of most respiratory pathogens. Sustained interruption of transmission requires population immunity of at least 95%, achieved through consistently high coverage with two doses of measles-containing vaccine ^[2]. Even small declines in vaccine uptake can create pockets of susceptible children capable of sustaining explosive outbreaks.

The current epidemic in Bangladesh is not merely a virological event but the cumulative consequence of widening immunization gaps. National surveys have shown a decline in full childhood vaccination coverage compared with pre-pandemic levels, while measles-containing vaccine coverage has remained below the threshold required for herd immunity ^[3]. The COVID-19 pandemic diverted health resources and disrupted routine vaccination services worldwide, but its aftershocks have been particularly evident in low- and middle-income countries where health systems already operate close to capacity ^[4].

Bangladesh's recent experience illustrates the fragility of public health gains. Delays in supplementary measles-rubella campaigns, interruptions in vaccine supply chains, urban migration, the growth of informal settlements, and inequities in access to healthcare have collectively generated a large cohort of susceptible children ^[5]. Reports suggest that millions of Bangladeshi children were incompletely immunized during recent years, including substantial numbers who never received a single dose of measles vaccine ^[6]. The resurgence of transmission was therefore not unexpected; measles merely exploited the immunity gaps left behind by programmatic disruption.

The epidemiology of the current outbreak is equally revealing. The overwhelming majority of severe cases and deaths have

occurred among unvaccinated or partially vaccinated children younger than five years of age ^[7]. These are not failures of vaccine efficacy but failures of vaccine delivery. Every hospitalized child with measles represents a missed opportunity within the health system—an encounter where immunization could have been offered, a community where outreach services failed to reach, or a supply chain that did not deliver.

The implications extend beyond measles itself. Falling immunization coverage threatens the re-emergence of other vaccine-preventable diseases, including diphtheria, pertussis, and rubella. Measles outbreaks therefore function as sentinel events, warning of broader vulnerabilities in public health infrastructure ^[8]. Countries rarely lose control of measles in isolation; rather, measles is often the first indicator of declining confidence and performance within immunization programmes.

The response must extend beyond emergency vaccination campaigns. Catch-up immunization for missed children, restoration of routine EPI services, strengthened surveillance, real-time monitoring of vaccine coverage, and targeted interventions in underserved urban and remote populations are essential ^[9]. Digital immunization registries, community-based outreach, and renewed investment in frontline health workers may help prevent future immunity gaps from emerging.

Bangladesh has overcome greater public health challenges in the past. The same country that eliminated maternal and neonatal tetanus and maintained polio-free status possesses both the expertise and institutional memory required to reverse the current trend ^[10]. However, the lesson from the present outbreak is unequivocal: the cost of immunization gaps is measured not only in epidemiological statistics but also in preventable hospitalizations, disabilities, and childhood deaths.

Measles has returned not because vaccines failed, but because vaccination failed to reach every child who needed it. In public health, success breeds complacency, and complacency creates vulnerability. Bangladesh's resurgence of measles should therefore serve not only as a national warning but also as a global reminder that elimination is not an endpoint—it is a commitment that must be renewed with every birth cohort.

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DOI: 10.5281/zenodo.21785940

Published Online: 29 July 2024

Published by: Gopalganj Medical College, Gopalganj, Bangladesh



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