Editorial

MEASLES OUTBREAKS AND CHILD DEATHS IN BANGLADESH: A PREVENTABLE TRAGEDY

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Introduction

Measles is a highly contagious disease caused by the measles virus (MV), a single-stranded negative-sense RNA virus belonging to the genus morbillivirus, with humans as it's only natural host. The virus spreads efficiently through aerosol droplets, and in a confined setting, up to 90% of unvaccinated individuals may become infected. Although historically considered a common and self-limiting childhood illness, measles can lead to severe complications including blindness, deafness, intellectual disability, and death[1].

A particularly dangerous feature of measles is its ability to induce immune suppression through a phenomenon known as immune amnesia. During the acute phase of infection, the virus weakens immune memory, leaving children vulnerable to secondary infections for months after recovery. Temporary immune amnesia caused by depletion of B-cell and T-cell memory by the measles virus has recently been shown to be a mechanism for longer-term susceptibility to secondary infections in persons who have had measles. This immune amnesia may persist for five months to one year and contributes to increased long-term morbidity and mortality following measles infection [2, 3].

Global Resurgence of Measles

Measles outbreaks are rising rapidly worldwide. Despite the existence of safe and effective vaccines, measles outbreaks continue to occur worldwide, particularly in developing countries. According to a report published by UN News on 28 November 2025, global measles mortality has declined by approximately 88% since 2000. However, despite this substantial progress, an estimated 95,000 deaths—predominantly among children—were still attributed to measles in the previous year, underscoring the continued public health burden of the disease [4]. According to WHO and CDC estimates, approximately 9 million cases and 136,000 deaths occur annually, predominantly among children[5]. In 2024, a total of 59 countries reported large or disruptive outbreaks—nearly three times higher than in 2021—and about one-quarter of these countries had previously achieved measles elimination[4]. In the previous year, over 58,000 measles cases were recorded across 41 of the 53 Member States in the Region spanning Europe and Central Asia, leading to thousands of hospitalizations and 10 related deaths. The 2023 figures mark a sharp increase compared to the preceding three years and highlight an ongoing risk for individuals who remain unprotected in the Region[6].

Measles Situation in Bangladesh

An examination of long-term trends reveals both progress and persistent vulnerability in Bangladesh. In 2004, there were 9,743 reported measles cases[7]. This number rose sharply to 11,632 in 2019 during the COVID-19 pandemic, reflecting disruption of routine immunization services. Subsequently, reported cases declined to 1,102 in 2021, followed by 311 in 2022, 281 in 2023, and 247 in 2024 [8]. Despite this decline, measles transmission has not been fully interrupted. According to the Directorate General of Health Services, 98 children died from suspected measles between 15 March and 4 April, with 16 deaths confirmed. Additional deaths continue to be reported, marking the highest measles mortality in the past two decades in Bangladesh[7].

Drivers of the Current Outbreak

The resurgence of measles in Bangladesh reflects broader global trends. One major contributing factor is the disruption of routine health services during the COVID-19 pandemic, which diverted healthcare workers and resources away from immunization programs. Additionally, a growing number of zero-dose children have created clusters of susceptibility, particularly in marginalized populations. Weaknesses in routine immunization systems and declining herd immunity have further contributed to the outbreak. At the same time, vaccine misinformation and barriers to access have reduced vaccine uptake in certain communities [9].

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Vaccination and Public Health Significance

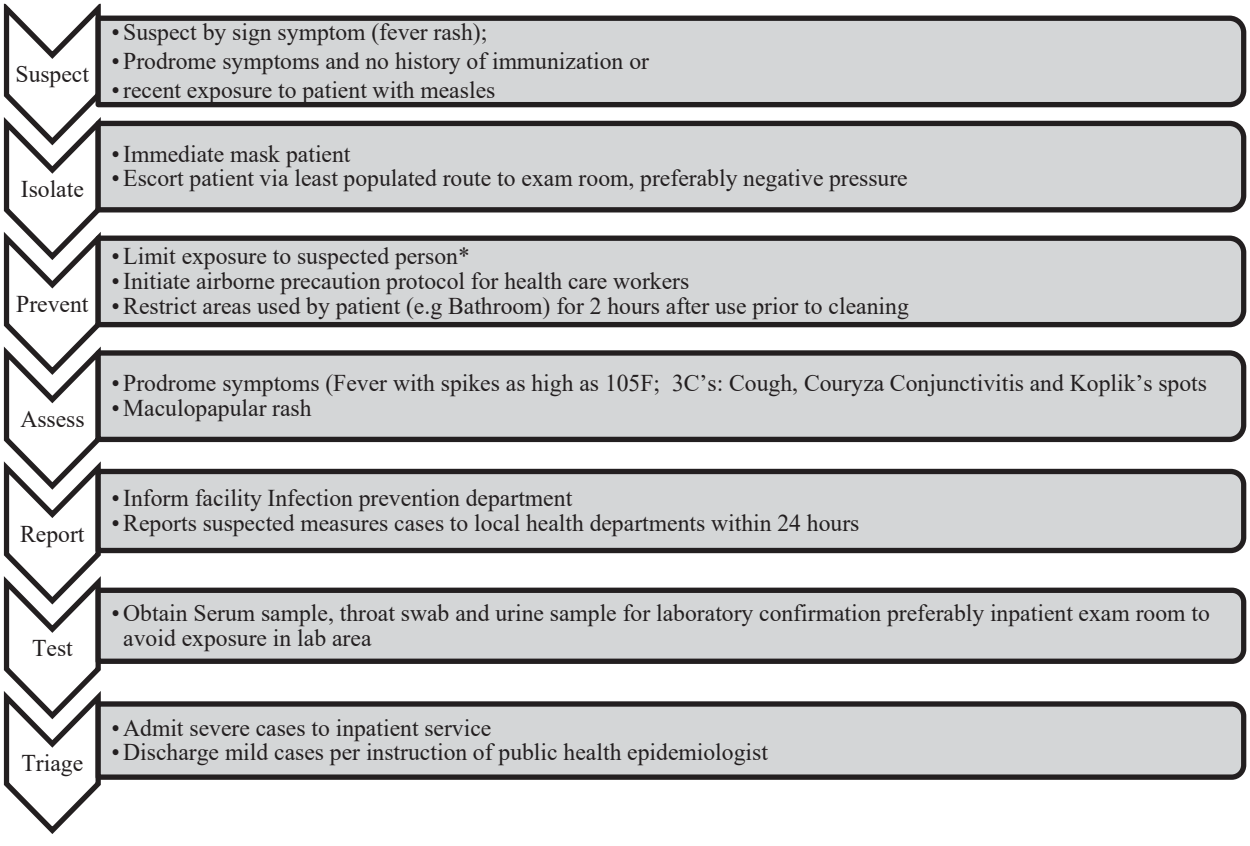
From a public health perspective, measles serves as a critical indicator of the strength of immunization systems. Due to its high transmissibility, even small gaps in vaccine coverage can rapidly lead to outbreaks. For this reason, global health agencies consider measles a sentinel disease signaling declining herd immunity. The live measles vaccine, introduced in 1963, dramatically lowered these numbers. The vaccine was initially given as one dose; however, due to an epidemic in 1989 to 1990, a second dose for children ages 4 to 6 years became the standard of care [1]. Bangladesh introduced the vaccine in 1979 under the Expanded Programme on Immunization. The current schedule includes two doses: the first at 9 months and the second at 15 months.[10] Coverage has improved over time, with MR1 reaching 96% and MR2 reaching 93% in 2024[11]. However, even small pockets of unvaccinated children can sustain transmission. The importance of the two-dose schedule lies in ensuring full immunity. While the first dose provides protection to most children, approximately 5–15% does not develop immunity, a phenomenon known as primary vaccine failure[12]. The second dose increases protection to approximately 99%.[13]

Herd Immunity and Ongoing Risk

Measles is among the most infectious diseases, with a single infected individual capable of transmitting the virus to up to 18 others. Achieving herd immunity requires approximately 95% vaccination coverage.[9] When coverage falls below this threshold, outbreaks can occur even in populations with relatively high immunization rates. Current vaccination rates aren't high enough to achieve herd immunity. Below this threshold, outbreaks and preventable deaths will continue to occur, which is why routine immunization and catch-up campaigns are so important [14]. However, herd immunity protects not only vaccinated individuals but also those who cannot be vaccinated, including newborns and immune-compromised individuals.

Clinical Management and Response[1]

For every isolated case of measles, a rapid and aggressive public health response is required to identify, educate, quarantine, immunize and to protect susceptible contacts. Overview of general steps to manage patients with suspected measles as follows:



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Timely reporting within 24 hours enables rapid containment measures. Laboratory confirmation through serum, throat swab, or urine testing is required. Severe cases require hospitalization, while mild cases can be managed under public health guidance.[1]

Management after recovery

Even after recovery, children who have had measles are at high risk for late complications such as pneumonia, malnutrition, and blindness. Blindness is usually due to severe corneal ulceration, and sometimes corneal perforation, in children who are deficient in vitamin A. In addition to supportive care, the World Health Organization recommends vitamin A supplementation at diagnosis, particularly in areas with deficiency. This intervention reduces mortality and prevents complications such as blindness.

Strengthening Prevention Strategies

Preventing future outbreaks requires strengthening immunization systems and addressing vaccine hesitancy. The AAA approaches—assumes, advice, and answer—provides an effective framework for communication. Providers should assume acceptance, strongly recommend vaccination, and address concerns empathetically[1]. Improving public awareness, ensuring equitable access, and implementing catch-up vaccination campaigns are critical steps toward closing immunity gaps.

Conclusion

Diana Chang-Blanc, Head of WHO's Essential Programme on Immunization, stated: "Measles knows no borders. A country can only be protected when every child, everywhere, is fully immunized" [9]. The current measles outbreak in Bangladesh represents a preventable tragedy and highlights the fragility of immunization systems. Despite high reported coverage, gaps in vaccine delivery and missed populations have allowed the disease to resurge.

Measles is not merely a childhood illness but a warning signal of systemic weaknesses in public health infrastructure. Urgent action is needed to strengthen routine immunization, rebuild trust in vaccines, and ensure that every child is reached. Without such efforts, preventable deaths will continue to occur.

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