Measles in Indonesia: Vaccination Coverage and Identified Challenges

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Measles, once nearing elimination globally, has returned as a significant public health threat in many parts of the world, including Indonesia. This resurgence reflects not only gaps in immunization coverage but also deeper systemic issues in health equity, service delivery, and public trust. As one of the most contagious viral diseases, measles remains a sensitive indicator of the strength or fragility of a nation's public health system.

Recent data paints a troubling picture. In 2025 alone, Indonesia recorded more than 63,000 suspected measles cases, with over 11,000 confirmed infections.[1] The situation has continued into 2026, with an increasing number of new suspected cases reported within just the first months of the year.[2] These figures place Indonesia among the countries with a high measles burden globally.

From a clinical and epidemiological standpoint, measles is far from a benign childhood illness. It is associated with severe complications, including pneumonia, encephalitis, and long-term immune suppression. The disease's high basic reproduction number (R_0), often estimated between 12 and 18, means that high vaccination coverage is required.[3] Indonesia's recent experience reflects this global pattern. Declines in immunization coverage exacerbated by the COVID-19 pandemic have created immunity gaps that allow measles transmission to persist. Evidence from high-impact global analyses shows that disruptions to routine immunization services significantly increase outbreak risk, even when declines are temporary.[4] This is particularly concerning for countries like Indonesia, where population density and mobility amplify transmission dynamics.

At the national level, structural determinants of vaccination uptake remain a critical challenge. A 2025 nationwide study found that only 73.46% of Indonesian children aged 12–23 months had received measles vaccination, far below the 95% threshold required for herd immunity.[5] The study further identified maternal education, postnatal care utilization, and socioeconomic status as key predictors of vaccination coverage. These findings align with broader literature in BMC Public Health, which highlights persistent inequalities in immunization access across Indonesia, particularly between urban and rural populations.[6]

Such disparities are not unique to Indonesia but are especially pronounced due to its archipelagic geography. Distance to healthcare facilities, transportation barriers, and uneven distribution of healthcare workers all contribute to missed vaccinations. Evidence from community-based intervention studies in BMC Infectious Diseases demonstrates that marginalized populations are disproportionately affected by immunization gaps, particularly in the post-

pandemic context.[7] These findings underscore the importance of targeted, community-level strategies to improve vaccine uptake.

Vaccine hesitancy further complicates the landscape. In Indonesia, concerns about vaccine safety, religious permissibility, and misinformation have contributed to declining confidence in immunization programs. A recent study in BMC Infectious Diseases examining vaccine attitudes in Aceh found that low coverage, around 54% in some areas, was associated with increased measles incidence and mortality.[8] This highlights how sociocultural factors can directly influence epidemiological outcomes.

From a global health perspective, Indonesia's measles resurgence is part of a broader trend observed in many low- and middle-income countries. A systematic review and meta-analysis published in BMJ Global Health found that while vaccination strategies are highly effective in reducing measles incidence and mortality, their success depends heavily on consistent implementation and equitable access.[9] Interruptions in service delivery, combined with weak health systems, can quickly reverse gains.

The consequences of these gaps are significant. Measles not only causes acute morbidity and mortality but also weakens immune memory, increasing susceptibility to other infections. In children, especially those who are malnourished, the disease can have long-term developmental impacts. Moreover, outbreaks place additional strain on healthcare systems, diverting resources from other essential services.

Addressing the resurgence of measles in Indonesia requires a comprehensive, evidence-based approach. First, restoring and strengthening routine immunization services is critical. Catch-up vaccination campaigns must be prioritized to close immunity gaps created during the pandemic. Modelling evidence suggests that achieving high coverage with both routine immunization and supplementary campaigns can reduce measles burden by up to 90%.[4] Second, interventions must address the social determinants of health that influence vaccination uptake. Improving maternal education, expanding access to antenatal and postnatal care, and reducing socioeconomic disparities are essential for increasing immunization coverage. Third, rebuilding public trust is crucial. Engaging religious leaders, local influencers, and healthcare workers can help counter misinformation and improve vaccine acceptance.

Applying evidence-based strategies, addressing structural inequalities, and rebuilding public trust, the action to move toward measles elimination can be succeeded. The fight against measles is, ultimately, a test of commitment to protecting the most vulnerable populations.

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