



## Editorial

# Measles outbreak - Another public health emergency?

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Cases of measles have been on the rise in India since the beginning of the year, but outbreaks in multiple states, led by Maharashtra, have prompted the Union Health Ministry to now identify 85 districts across 16 states for an urgent measles outbreak response immunisation drive. According to the World Health Organization, India has the highest caseload of measles with at least 9489 cases reported so far in the country this year.

The outbreaks are occurring due to the accumulation of susceptible children for more than 2 years. There was also a massive drop in routine childhood vaccination during the COVID pandemic, which experts had forewarned could lead to a resurgence of vaccine-preventable diseases. This means that we have created new weaknesses because of India's COVID response. Containing measles once it starts spreading is hard because measles is a highly infectious disease. Up to nine out of 10 susceptible persons with close contact with a measles patient will develop measles.

The problem is that partly because of COVID-19, and then even after the COVID threat had eased, our health system had not got back into full gear on immunisation. A variety of health services slowed down during the pandemic, and they did not really get back full steam even after COVID, because they were recouping. Further, we were also in the COVID-19 vaccination mode. There were so many ways that COVID took our eye off other health conditions. As a result, we did see measles vaccination rates drop, along with many other essential health services. We know that 95% of the susceptible population has to be immunised if you have to prevent measles from spreading. Now because immunisation confers about 95% protection even on the first dose, if only 90% or 85% of people have been vaccinated, then the virus can spread. Moreover, the measles virus indeed can be very infective. One infected person can infect up to 18 people in the unvaccinated group. Therefore, the measles outbreak is the natural consequence of the slippage in vaccination rates, either because some sections of the population are refusing to get children vaccinated, or because the health system itself moved to a slower gear. However, experts think it's unlikely that the current outbreak will spiral into a catastrophic situation like with COVID-19. Proactive surveillance and supplementary immunisation activities (mop-up's) can aid in breaking the chain.

A critical evaluation of the current strategies and their implementation in the field suggests that poor coverage of measles or high case fatality rates can be attributed to various existing shortcomings or barriers. These barriers include sociodemographic parameters (e.g., higher birth order, low family income, lower parental education, poor knowledge of measles and the measles vaccine, limited public demand for and confidence in vaccines, etc.); challenges faced by difficult-to-reach areas; inadequate infrastructure, manpower, and communication; faults in vaccine storage, transport, and cold chains; defective surveillance activities for reporting of adverse events

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following immunisation and for outbreak response; and issues with the biomedical waste disposal system. Because some of the states and union territories had poor measles coverage, they required a catch-up immunisation campaign, in contrast to the states with better coverage where there was a need to strengthen only routine immunisation service.

Vaccination is the only way to prevent measles. The measles vaccine was invented in 1963, but the US saw another measles epidemic between 1989 and 1990. The cause for this was traced to low vaccination rates among pre-schoolers, and a change in epidemiology of the virus that was now affecting younger children. Immunisation efforts were ramped up, and the US declared measles “eliminated” in 2000. However, due to a combination of reasons including but not restricted to misinformation, and vaccine hesitancy, the country saw another outbreak in 2019. Even if 80 of 100 children are vaccinated, only 68 children are immunised (85% seroconversion), leaving out 22 of 100 children susceptible to infection. If this continues for 2 years, the susceptible pool expands. Hence, it is very important to sustain a high level of coverage through a universal immunisation programme and follow up with supplementary immunisation activities to prevent outbreaks. The bottom line is that historically, measles has been successfully restricted when robust vaccination drives were ensured. When vaccination is relaxed, the disease is known to make a comeback.

One of the many lessons to take away from the COVID pandemic is that if we face such disasters in the future, we

should make sure that routine immunisations and our other essential health services like TB and malaria programmes do not suffer. These programmes need to be made disaster resilient. We need to understand that the health system does not work in a silo. There are determinants of health that are outside the typical purview of what is a health system. Access barriers and misinformation are huge causes of under-vaccination both among children and adults.

We also need better public health surveillance. For example, we need to know who are the children who have been under-vaccinated. We also need better public health surveillance. For example, we need to know who are the children who have been under-vaccinated. Mop-ups are necessary once in a few years to cover children who are not seroconverted and at-risk newer members in a cohort. Strengthening surveillance and sustained high immunisation coverage are both vital measures that need to be undertaken before a public health emergency of any kind strikes.

To conclude, to achieve the nation’s goal of measles elimination and bring about a significant reduction in measles-related deaths, the need of the hour is to maintain a high level of immunisation coverage for the measles vaccine and to strengthen all the integral components of the national immunisation programme.

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