Original Research Paper

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Community Medicine

PROGRESS TOWARDS MEASLES-RUBELLA ELIMINATION IN INDIA, REVIEWING A STATE

Dr Nagen Sarmah MBBS, MD, Senior Public Health Specialist Working in the Field of Public Health in Assam, India over 25 years

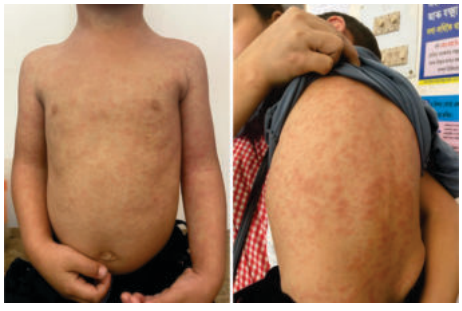
ABSTRACT **Summary:** The study aims to review the progress achieved towards Measles-Rubella Elimination and further efforts required. Measles-Rubella surveillance plays a vital role in eliminating the disease which had been started since long, but progress was very slow. Surveillance started improving but COVID-19 pandemic derailed everything including surveillance and immunization. Subsequently, surveillance is seen improving during the past 2-3 years which is already modified to case-based Fever-Rash surveillance and is to be consolidated and improved further. Several areas are legging by poor immunization coverage although collectively it is shown better. Immunization coverage is to be strengthened further as MR 1st and 2nd dose coverage is to be above 95% to eliminate the disease along with consistent case-based Fever-Rash surveillance.

KEYWORDS : Measles-Rubella Elimination, Fever-Rash Surveillance, Immunization

Overview of the Measles Scenario

Member States in all WHO Regions have adopted measles elimination goals. WHO is the lead technical agency responsible for coordination of immunization and surveillance activities supporting all countries to achieve these goals. Accordingly, India is also implementing programme to eliminate Measles & Rubella from the country.

Measles is a highly contagious viral disease. It remains an important cause of death among young children globally, despite the availability of a safe and effective vaccine. Although vaccination has prevented an estimated 60 million deaths between 2000–2023, measles is still common in many developing countries, particularly in parts of Africa and Asia. An estimated 107,500 people died from measles in 2023.

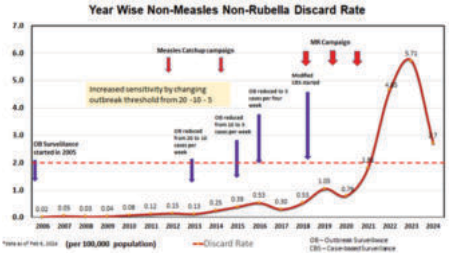


Picture 1: Typical Case Of Measles Reported In Assam, India

Strategic objectives to achieve Measles-Rubella Elimination are 1) Immunization, above 95% coverage of two doses of MR containing vaccine; 2) case-based Fever-Rash surveillance; 3) Rapid response to measles and rubella outbreaks and to ensure linkages with SDGs and other integrated programs and 4) accredited laboratory network. Among these strategies, case-based Fever-Rash surveillance has the most important role guiding the entire programme.

Expansion Of Measles-rubella Surveillance In India, Assam

Lab supported outbreak-based Measles-Rubella surveillance started in India in 2005 investigating only when outbreak occurred. Measles suspected cases were reported by the doctors and health workers and samples were collected only when an outbreak happened. Because of the social taboo, majority cases were not reported to the health department in India. As progress of surveillance was not satisfactory, outbreak-based surveillance has been changed to modified Measles-Rubella case-based surveillance in 2016. Accordingly, all reported cases were investigated, samples collected and if outbreak happened, it was investigated as outbreak. Further it was noted that case reporting was still less against expectation which was because of the case definition, fever with Maculopapular rash and three 'C'- cough, coryza & conjunctivitis. So, Government of India further modify the case definition as fever with Maculopapular rash (Fever-Rash) in 2018 and this new definition have been expanded to the entire country in 2021. Following change of case definition, number of case reporting started increasing in the country.

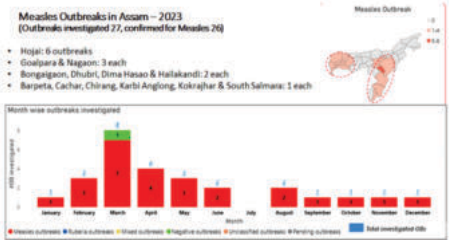


Picture 2: Showing NMNR Rate In India Since 2005 To 2024 And Surveillance Sensitivity

Non-Measles Non-Rubella (NMNR) discard rate expected above 2 which means reporting of at least 2 Fever-Rash cases laboratory negative to Measles-Rubella per hundred thousand population. In a district of ten lakh population, if 20 Fever-Rash cases negative to Measles-Rubella are reported then NMNR rate will be just 2. India achieve NMNR rate above 2 in 2021 onwards although surveillance started in 2005.

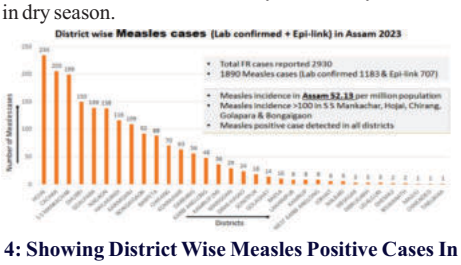
Measle- Rubella Surveillance Scenario In Assam

In Assam Measles-Rubella surveillance, currently Fever-Rash surveillance started improving since 2023 onwards (NMNR rate above 2). Total 26 Measles outbreaks detected in 13 districts in Assam in 2023.



Picture 3: Showing Month Wise Measles Outbreak In Assam In 2023

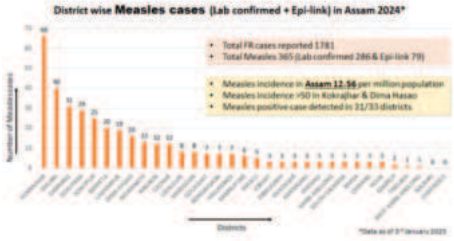
So many Measles outbreaks detected in Assam indicating improve surveillance and existence of low immunity coverage areas in the state. Also, outbreaks are detected round the year in every month, higher in number in dry season.



Picture 4: Showing District Wise Measles Positive Cases In Assam In 2023

Total 1890 Measles cases detected in the Assam in 2023 and positive case detected in every district. Incidence in Assam was 52 per million population indicating very high level of Measles virus transmission. In addition, 14 Rubella positive cases also detected in 12 districts.

A decrease in Measles positive cases is seen in the state in 2024 and incidence also come down to <50 per million population. But still Measles cases are detected in 31 districts out of total 33.

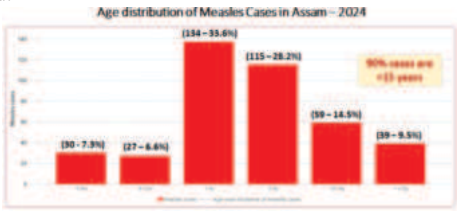


Picture 5: Showing District Wise Measles Positive Cases In Assam In 2024

High number of Rubella positive cases also detected in Assam in 2024, total 37 Rubella positive cases are detected in 15 districts.

Picture 6: Showing District Wise Rubella Positive Cases In Assam In 2024

Over 90% cases are detected in children below 15 years of age but around 10% cases are detected among above 15 years population. Cases are detected among below 9 months old infants also. Regarding immunization status, only 24% cases are found receiving one or more doses of Measles containing vaccine in these areas where outbreaks detected.



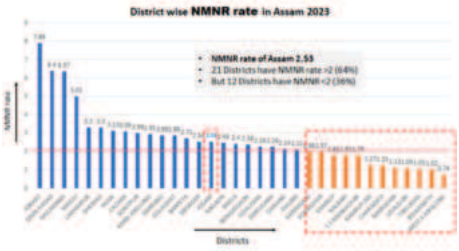
Picture 7: Showing Age Group Wise Distribution Of Measles Cases In Assam In 2024

Seasonal fluctuation of Measles cases is visible in the state starting from February to June, but cases are there round the year.

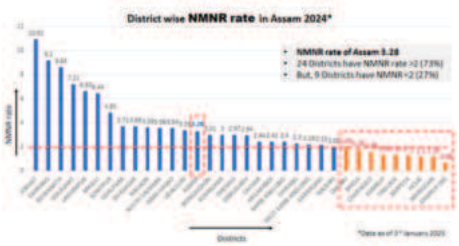
Picture 8: Epi-curve Of Measles Cases In Assam Showing Seasonal Fluctuation

Fever-rash Surveillance Quality

Regarding surveillance quality, NMNR rate is above 2 in 64% of the districts but 36% districts are legging by performance in 2023 in the state of Assam. Surveillance status slightly improve in 2024; 76% districts are having NMNR rate above 2 but below 2 in 24% districts. There are several blocks not reporting a single Fever-Rash case during a year.



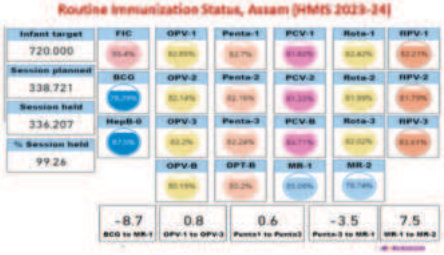
Picture 9: Showing District Wise NMNR Rate In Assam In 2023



Picture 10: Showing District Wise NMNR Rate In Assam In 2024

Fever-Rash surveillance is found improving in Assam during 2023-24 which is to be continued and improve further to eliminate the diseases from the state.

Above 95% coverage with MR1 and MR2 doses is expected for elimination of Measles-Rubella. Currently, which is below 90% in Assam as per HMIS data. As per NFHS data, the coverage is far below in the state. There are high dropouts of children specially Penta 1-MR1 and MR1-MR2 which is to be reduced. Mobilization of beneficiaries to the session site by the health workers is to be strengthened. Following Measles outbreak, Outbreak Response Immunization (ORI) and public health measures are an important part to reduce recurrence of the outbreak in the areas. An additional dose of MR vaccine (in addition to the routine doses) is to be given to children 9 months to below 5 years old in the areas having Measles outbreak as per recent Government of India guidelines. Active Case Search by house-to-house visit by health workers following reporting of a suspected case and case search in the nearby schools, Anganwadi centers and hospital is very much essential to identify more cases. Vitamin A solution is also to be given to the Measles confirm cases (2 standard doses as per age in consecutive 2 days). As a rule, high risk areas, hard to reach areas, brick kilns, Tea Estates, riverine char areas, urban slum, peri urban areas, etc. are priority sites for immunization as well as surveillance.



Picture 11: Showing Routine Immunization Coverage As Per Hmis Data.

Government of Assam is trying to improve immunization coverage in the state, reviewing the immunization performance every quarterly. State and district teams are working to improve microplanning for session conduction and efforts to reduce dropouts. IPC and social mobilization have to play a major role reducing dropouts. Fever-Rash surveillance is improved and is to be consolidated and improve further to ensure reporting every fever-rash case to the district to eliminate the disease from the state.

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Conflict Of Interest: There is no conflict of interest.

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