

SIGHTING THE FINISHING LINE IN MEASLES-RUBELLA ELIMINATION

Relevant for: Developmental Issues | Topic: Health & Sanitation and related issues

'The MR vaccine is a combined product, targeting two diseases in one shot' | Photo Credit: Getty Images/iStockphoto

Many would remember the school-based campaigns of measles-rubella (MR) vaccination of children from 5 to 15 years, conducted in all States, in 2017. Success was good in a few States, but not in others. School managements, teachers, children themselves and parents were not informed of the basis of this new programme, which was a deviation from the past. There were some unanswered questions: why was it up to 15 years while the Universal (childhood) Immunisation Programme (UIP) covers only those up to five years? Why administer the rubella vaccine that was not in the UIP list in 2017? Why should children who have had one dose of the measles vaccine get another dose? Why are schools instead of health-care centres used for vaccination?

The Government decided to eliminate measles and rubella from India by the year 2020 — having missed the earlier set target of 2015. So, in 2017 there was an urgency to accelerate efforts. The basic plan was to create a very high level of vaccination-induced immunity against both diseases, by inoculating MR vaccine. To cover immunity gaps after one dose of measles vaccine, a second dose was necessary. For epidemiological reasons (explained later), rubella vaccination had to cover children up to 15 years. School registration and attendance are high in all States and as a programme, it was easy to seize the opportunity to vaccinate children in schools. We knew that the MR vaccine was safe from any serious adverse event following vaccination/immunisation (AEFI); hence a school-based vaccination programme was very convenient for all. These were all excellent reasons, but due to a lack of information given to the public there was much anxiety —and even antipathy towards — in many places, about the programme, in the minds of parents and school authorities.

The COVID-19 pandemic stole two years from the programme. So the MR elimination target was re-set to 2023. Today, we are at the threshold of a new gargantuan project. We shall begin at the beginning and explain the details for all concerned to be well informed.

MR elimination is defined as zero transmission of measles and rubella viruses, evidenced by zero clinical disease, sustained over three years. The two arms of intervention are vaccination and surveillance. Surveillance helps identify places where either virus is still in transmission, so that vaccination can be pinpointed there to stop further spread. Two doses of the MR vaccine covering at least 95% children below five years — the first dose between nine and 11 months and second dose ideally in the second year of life — should suffice. The disease is basically fever plus a red rash on the skin. A fever-rash combination has several causes and a throat swab, urine and/or blood sample are collected and tested in the laboratory for identifying measles or rubella.

The ideal population-cum-administrative unit for efficiently implementing all activities towards MR elimination is the district; the whole country reaches the finishing line when all 773 districts achieve success. Clinical and laboratory surveillance and vaccination have to be sustained, as either virus, especially measles virus, could be imported from outside; that should be immediately detected and interrupted.

Every district has excellent infrastructure to manage the UIP. If the administration, under the active leadership of the District Magistrate or District Collector, activates the Task Force mechanism overseeing the UIP that is managed by the District Immunisation Officer, the MR elimination target can be reached within six to nine months from start. All districts in a State can be galvanised by the State Government, and all States can be supported by the Immunisation Division of the Union Ministry of Health and Family Welfare.

Why should measles be eliminated? In the pre-vaccination era, while polio paralysed about 1% of all children before the age of five, measles actually killed 1% of all under-five children. During measles outbreaks, the case-fatality rate was about 10%-15%. Children who recovered would have lost weight as well as the steady momentum of cognitive development and scholastic performance. Measles affects the immune system rendering the child vulnerable to other infectious diseases, leading to high mortality over the next two to three years. Indeed, there has been much discussion among experts whether measles should have been targeted first for global eradication instead of polio.

Why should rubella be eliminated? The rubella virus is a slower transmitter and the risk of rubella is extended from childhood through adolescence into the reproductive age range. In most individuals, rubella infection is either without symptoms, or with a short fever and a skin rash that is less pronounced than that of measles. Unfortunately, if a pregnant woman gets infected, the virus has a tendency to cross the placenta and damage the developing fetus's eyes, brain, heart and other tissues. Affected babies are born with severe birth defects such as cataracts, deafness, heart defects and developmental delay — this is 'congenital rubella syndrome' (CRS). Fortunately, CRS is preventable with vaccination if given prior to pregnancy. So, in the 2017 school-based vaccination campaign, 15 years was chosen to create immunity in girls for assured future protection, and in boys to prevent community spread.

There are special reasons why MR elimination could be achieved together. The MR vaccine is a combined product, targeting two diseases in one shot. Fever and rash surveillance covers both diseases. Measles elimination is of very high priority; piggy-backing rubella elimination is opportunistic.

We are in May 2022, with 19 months available to achieve the target. In spite of the pandemic, nationally, the UIP has maintained about 85% MR second dose coverage below five years. Thus, we are in a take-off position to reach the finishing line by July-August 2023, still leaving four to five months of buffer time to patch up any "last minute" shortfalls and challenges.

This project design is awaiting final approval by the Government of India. Using the cooperation of parents, health-care personnel at all levels, opinion leaders, influencers, the media, non-governmental organisations such as the Rotary and Lions, all can and must play a role in making this district-by-district programme a story of success.

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