
Letters to the Editor

Measles Control in India

It is now well recognized that single dose routine immunization is inadequate for control and subsequent elimination of measles from any large geographical area. This growing realization has led to devising of additional strategies and the recent article on this topic is an excellent review of these strategies(1). However, their argument in favor of a two dose policy is not convincing.

Firstly, in proposing that a second dose of the vaccine given at 15-23 months of age can increase the proportion of protected children from 76.5% to 93.2%, they have assumed a uniform single dose coverage of 90%. Though overall immunization levels are high, many districts in the country have coverage far below the national average. Some vaccination coverage evaluation surveys have indicated coverage levels below 50% in a number of districts(2). Secondly, the authors have assumed a drop out rate of maximum of 15% between first and second dose of measles vaccine. This may actually be much higher. A study from North India showed a high drop out rate of 56%(3). Thirdly, even the suggested increase in the proportion of protected children to 93% by adopting a two dose policy is not sufficient to interrupt the transmission of virus. An expert group of Pan American Health Organization (PAHO), World Health Organization (WHO), and Center for Disease Control (CDC) have therefore recommended that countries willing to eliminate measles will need to implement some form of catch up immunization

rather than just adding a second dose to the routine immunization schedule(4).

Mass campaigns interrupt the transmission of the virus by rapidly reducing the pool of susceptible children. Using nationwide mass campaigns, several Latin American countries have successfully eliminated measles(5).

Though mass measles immunization is not a one time event, experience from Americas and epidemiological principles suggest that a repeat campaign is not required for at least 4-5 years after the initial one, if the routine immunization coverage is maintained at levels above 80%. A follow up campaign after this interval will sustain the interruption of transmission of measles virus.

Considering that nationwide mass measles immunization can be effectively delivered with pulse polio campaign, and that it will not need to be repeated for 4-5 years, the cost of implementing such a campaign would be approximately 20-30 crores per year. This is comparable to the cost of implementing the mass measles immunization in cities with population more than 1.5 lac (4-5 crores/year) and two dose policy in the rest of the country (18 crores/year), as suggested by the authors.

In view of these facts, mass measles campaign in conjunction with improved routine immunization coverage appears to be the optimum strategy for elimination of measles from India.

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Reply

Measles transmission has been interrupted in most countries of Americas by using a strategy recommended by the Pan American Health Organization (PAHO)(1). PAHO strategy is essentially a three-step immunization strategy beginning with a one-time "catch-up" vaccination of all children 9 months through 14 years of age, irrespective of vaccination status or measles history, to rapidly interrupt the measles transmission, followed by achieving and maintaining high population immunity through routine immunization of children, and supplemented by periodic "follow-up" campaigns among pre-school children whenever the cumulative number of susceptible children below 5 years of age approximate the number of children in one birth cohort. The interval between these campaigns and the specific age group to be immunized depend upon the immunization coverage obtained through routine services since the last campaign. A sensitive surveillance is the other key element of this strategy.

Based on the experiences in the Americas, Mohan and Dabi suggest that mass measles campaign in conjunction with improved routine immunization coverage would be the optimum strategy for elimination of measles from India. Assuming that nationwide mass measles immunization can be effectively delivered with pulse polio campaign and that it will not need to be repeated every 4-5 years, they also estimate that around Rs. 20-30 crores will be required per year to carry out these campaigns.

If we use the PAHO's strategy, we would immunize about 350 million children 9 months through 14 years of age with a dose of measles vaccine in the beginning. The number will be about 220 million if the target age group is 9 months through 9 years, or around 100 million if the target age group is 9 months through 4 years.

In India, under the Pulse Polio Campaign, Oral Polio Vaccine (OPV) is delivered to all the children below 5 years of age in one day. Do we have the infrastructure to deliver an injectable measles vaccine to such a huge number of children, especially in rural areas, in a short period (if not in