

Commentary

The polio eradication initiative in India : Need for evidence based actions

Vancelik and colleagues¹ have drawn attention to the challenges faced in the ongoing polio eradication campaign in India and other similarly placed countries. Turkey has eradicated polio and is now immunizing infants with three doses of oral polio vaccine (OPV) with two boosters at 18 months and 7 yr of age. Through the cross-sectional epidemiological study in Erzurum province in eastern Turkey, one of the least developed areas within the country, the authors have highlighted some key issues: (i) questionnaire methods have several shortcomings in eliciting immunization status; (ii) reliable estimation of immunity status may not be obtained through recall of parents about the number of doses of OPV that their children have received; (iii) serological studies are critical in assessing impact of vaccination programmes and improvement of vaccination policies; (iv) significant proportion of children failed to seroconvert with the above schedule of OPV; they belonged to the most vulnerable sections of the society with low socio-economic status, migration, certain cultural practices, concurrent enteroviral infections, poor hygiene, disruptions in cold chain and sub-optimal practices of vaccine management contribute to the problem; and (v) immunization programmes may be more difficult to implement in certain areas¹.

We recognize that the polio eradication programme in India has adapted and evolved considerably since its inception and has met with success in most parts of the country. The India Expert Advisory Group (IEAG) in its Seventeenth Meeting concluded that “the process of eradicating polio in India has been long and difficult with lessons learned specific to India”². Yet the last mile has been eluding us. Following 676 wild polio virus (WPV) cases in 2006, there was optimism at the beginning of 2007 that the next few months were the “best chance to stop polio virus circulation in the high risk endemic areas of the country”³. Current

epidemiological situation indicates that we are facing an outbreak caused by the P3 strain in the endemic districts². An additional matter of concern is report of cases from states like Andhra Pradesh where polio was not reported for several years².

Retrospective analysis of immunization status in India has largely relied on oral history of the parents. Presentations at the Seventeenth IEAG indicated that of the 473 wild virus polio cases, 85 per cent had received more than three doses of OPV and nearly one-third of them received ten doses or more. In contrast, 99 per cent of 6749 non-polio AFP cases received more than three doses and over 80 per cent of these had received more than ten doses.

The Seventeenth IEAG noted with concern that WPV continued to be a disease of very young children and recommended that the younger age groups needed to be immunized in a shorter period of time². In western Uttar Pradesh (UP), over two-thirds of cases occur below the age of 24 months in continuation of the trend so far. In view of high rates of reported coverage with multiple doses of OPV, the reduction in incidence is “lesser than coverage”. John⁴ asserted that infants will require ten doses of OPV to achieve protective levels of immunity to enable eradication. Hence, OPV has to begin with ‘zero-day’ dose. Grassly *et al*⁵ reported that the protective efficacy of monovalent OPV1 (mOPV1) was estimated to be 30 per cent (95% CI 19-41) per dose against type 1 paralytic disease, compared with 11 per cent (7-14) for trivalent vaccine. Thus, 76-82 per cent of children aged 0-23 months were estimated to be protected by vaccination against type 1 poliovirus at the end of 2006, compared with 59 per cent at the end of 2004 (before the introduction of mOPV1). They recognized that the estimated per dose efficacy of mOPV1 was below that observed in other studies. The reason(s) for this ‘less than expected vaccine efficacy’ are not well understood. It must be pointed out that

Grassly *et al* modeled the effectiveness of OPV on the basis of recall data. In the light of observations from Turkey, we need to generate credible evidence in India, specifically from the endemic districts to correlate the number of documented OPV doses with seroconversion preferably among birth cohorts. This is essential before we raise doubts about the efficacy of OPV.

Grassly *et al*⁵ also emphasized that the 2006 wild polio outbreak in India indicated “stark evidence of the need for high coverage with multiple doses of vaccine as early as possible in life in these areas. Achieving such coverage will require sustained dialogue with local communities and strong political commitment.” The suggestion of “sustained dialogue with local communities” is a well considered one. There is a need to focus on the social determinants of the programme, which is critically poised now than ever before, and communities need to be taken into confidence if the new technological innovations are to make a difference. Social mobilization emerged as a tool to facilitate the adoption of certain technologies like ORS and immunization as selective primary health care (SPHC) approach began to elbow out primary health care (PHC) that was seen as too broad and political leaderships were presented with specific attainable goals such as eradication^{6,7}. It is important to recognize that the community needs to appreciate the benefits of the programme and social mobilization campaigns should not be a mere set of warnings or instructions.

Our study in the districts of Moradabad and J P Nagar in western Uttar Pradesh have explored the social determinants of the programme specifically in the contexts of barriers and limitations of current strategies to deliver OPV⁸. In order to reach newborns (to deliver zero-day dose) and young children it is important to restore trust and confidence of the community and clarify doubts and misconceptions. Rumors need to be faced head on with a pro-active media strategy. A reliable and responsive primary health care system will go a long way to dispel cynicism and facilitate effective community dialogue. Community dialogue cannot be seen as anti-thesis to the existing social mobilization strategies. It is equally important to factor for differential needs of a community based on age, gender, class, caste and religion for adequate coverage and sustained compliance. Dialogue can identify different levels and key persons or groups both within the community and health services with whom “why, what and how of the

programme” need be communicated (Baru R., unpublished personal communication). This will give the recent initiatives a fair chance of success. Finally, we would like to draw a simile from the plague situation in Bombay (Mumbai) during 1896-1914⁹.

“Many responded to the desperation of official measures with an equally desperate resistance to and refusal of official, even medical, intervention. What colonial officers saw as an irrational and obscurantist resistance to the dictates of science and reason only incited them to further, yet more ferocious and despairing executive action. In this way, panic, terror and guilt engorged each other in a seemingly unending spiral. The spiral was broken only when the frenzied temper of the plague measures relaxed.”

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