

## **Polio Eradication in India: A Tale of Science, Ethics, Dogmas and Strategy!**

The fate of Global Polio Eradication Initiative (GPEI) is now critically hinged to its success in four remaining endemic countries of the world namely India, Nigeria, Pakistan and Afghanistan. India has once again regained its prime position after briefly losing it to Nigeria between 2003 and 2006(1). Although five other countries have reported wild poliovirus (WPV) cases so far this year(2), it is the situation in India that is going to grab the attention of polio experts all over the globe to assess their progress. During the last India Expert Advisory Group (IEAG), WHO-NPSP (National Polio Surveillance Project) has set a target to halt transmission of WPV type-1 in India by the year end and of type-3 by the end of 2009(3). Western UP, one of the two hotspots of wild poliovirus in India and the only part of the country that never stopped endemic polio, has been free of type-1 transmission for almost a year now. However, continued transmission of type-1 in Bihar and other parts of the country has put a question mark on the IEAG deadline. Besides, finding of significant immunity gap against type-1 among young children of Moradabad region on seroprevalence surveys of ICMR (unpublished data) despite receiving on average 6 doses of OPV has further raised doubt on the possibility of cessation of type-1 transmission from western UP, until measures are taken to step up the immune status of susceptible children and closing this gap. How much significance GPEI is giving to winning western UP this year can be gauged from a statement of director of GPEI, Bruce Aylward, "If it sticks (absence of type-1 in western UP), that is the single most important development in the program in the last couple of years because it means that the tools and tactics are good enough to stop transmission everywhere(4)." One can imagine how much stakes are put on success in UP. The good performance of GPEI in India in coming months will not only bolster its morale but it will also silence voices of dissent emanating from different quarters.

## **SCIENCE VERSUS ETHICS**

Since last one year, WHO has decided to plan strategy to target individual WPV at a time? Quite understandably, it has chosen type-1 as the enemy number one to attack first. Though, technically the decision may have some merits, but on moral and ethical grounds, the decision raises certain serious concerns. The epidemiology of type-1 and 3 may have stark differences but at host level the end results are the same. The paralysis caused by type-3 is no less severe than the one caused by other types. WHO has quite deliberately taken the risk of letting type-3 run loose especially in highly endemic districts of UP and Bihar despite knowing well that routine immunization (RI) status in these two most populous states is quite dismal(5) and whatever immunity the young children are possessing is mainly through Supplementary Immunization Activities (SIA) rounds. With almost exclusive reliance on repeated rounds of monovalent type-1 OPV vaccine in Bihar, trivalent vaccine was not used for more than a year in SIA rounds. As a result, the entire 0-5 year population was susceptible to infection caused by other types. Hence, it would not be inappropriate to term the recent epidemic of type-3 as an 'iatrogenic' outbreak! Indian Academy of Pediatrics (IAP) has been justifiably insisting on use of a multi-pronged approach to attack both types of wild polio viruses simultaneously while keeping a strict vigil on development of circulating vaccine-derived poliovirus (cVDPV), a phenomenon becoming more prevalent since last five years or so(6). The results of recently released seroprevalence study done in western UP also vindicate our stand and justify our fears.

## **IAP'S PERSPECTIVE**

IAP has always accorded very high significance to polio eradication, child welfare activities and public health programs. While offering guidelines to its members on individual protection of their clientele it has been always extremely careful not to hurt even inadvertently the ongoing community health program. Hence, despite having a separate 'IAP

Committee of Immunization (IAPCOI)', it has also formed a 'Polio Eradication Committee' (PEC) to avoid any conflicting recommendation on polio immunization. The recent recommendations of IAPCOI on Inactivated Polio Vaccine (IPV) should be viewed in this background(7). The main aims and objectives of PEC are to critically analyze the strategies and policies adopted by the GPEI in India and offer them best available indigenous technical inputs on various aspects related to polio eradication, while offering full advocacy to the program at different levels. The recommendations of the PEC published in this issue of the journal should be viewed in this perspective(6). It is our endeavor not to undermine ongoing eradication efforts but to state whatever we deem appropriate and must to ensure ultimate success of the program. Agencies and Government of India (GOI) may find few of these recommendations little unpalatable but our aim is definitely not to unduly criticize the GPEI but offer a fair appraisal of the program with constructive criticism and ways to move forward. Our recommendation on IPV was taken with some skepticism but the recent results of serosurvey results have once again proved the necessity of employing whatever arsenal we are possessing to boost immunity against all three types of polio-viruses.

#### **FUTURE COURSE OF ACTION**

As highlighted in the recommendations(6), the saner and effective approach would be to use multi-pronged approach to attack both types of wild polio viruses simultaneously along with keeping a high vigil on possibility of emergence of cVDPV outbreaks of type 2. The SIAs should be followed by regular objective assessment of immune status of susceptible children not only in endemic areas of the country but also in the regions considered to be free of wild virus circulation.

Routine Immunization should be accorded top priority as suggested in our recommendations(6). Ultimately, it is the status of background RI rates that will act as deterrent to future importation of WPV to disease-free states and emergence of cVDPV in the country. IAP has already taken an initiative in this regard and is currently engaged in a collaborative

project with Emory University to assess knowledge, attitude and practices (KAP) of its members regarding RI and to obtain information on the major barriers to achieving high immunization rate, and potential means to overcome these barriers in order to improve RI rates all over the country. The GPEI should invest heavily in improving sagging RI rates in key states with meticulous micro-planning of RI sessions along with making highest district authority accountable for any lapses and oversights.

This year, apart from maintaining tight grip over type-1 in western UP, the focus should remain on situation in Bihar, which is offering some of the stiffest challenges to GPEI in India as far as accessibility is concerned. The GPEI should devise a judicious mix of monovalent and trivalent OPV rounds in the state which continues to have transmission of both the viruses coupled with very low rates of RI.

The GPEI should shed its ambiguity and prejudice against use of IPV in developing countries still having significant WPV transmission. Various ongoing studies by GPEI on how to make use of IPV affordable in low income group countries is an ample proof of inevitability of its use in later stages of program(4). Many experts are now arguing that OPV is incapable of achieving polio eradication in India(8). Even WHO is convinced that eradication can not be sustained once achieved, without using IPV. However, they do not want to commit themselves by issuing clear-cut guidelines on proposed use of IPV during post-eradication phase, fearing massive economic implications for poor developing countries.

Another prejudice that needs to be shed by GPEI in India is toward indigenous expert advice. GOI is already having an expert group in form of IEAG to advise it on various issues related to polio eradication in India which has representation from many diverse organizations and individual experts. However, when it comes to issuing guidelines and framing recommendations, it listens to only one quarter. There is need to accommodate some judicious advice from all the quarters, interested in

achieving the common goal of seeing India polio-free as early as possible.

### CONCLUSIONS

Polio eradication in India is at a crossroad. Time is fast running out. So are the resources, enthusiasm of millions of health workers, commitment of governments and faith of hundreds of polio experts all over the globe. The academics is clear, the strategies are well defined, what is required is a little change in approach and mindset. Waiting for perfection is the greatest enemy of current good. Challenge is to implement what we know, in a proper and effective manner. We need to show urgency and firm resolve, and must shed ambiguity, dogmas and prejudices to take some unprecedented decisions to see that inroads made at some of the toughest regions of the world are not floundered for the want of decisive actions.

**R K Agarwal,**  
*President IAP 2008,*  
*R K Hospital, 5/A, Madhuban,*  
*Udaipur 313 001 (Rajasthan),*  
*India.*  
*E-mail:rk\_hospital@hotmail.com*

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### REFERENCES

1. Wild Poliovirus 2000–2008. Available at: <http://www.polioeradication.org/content/general/casecount.pdf>. Accessed on April 7, 2008.
2. Wild Poliovirus Weekly Update. Available at: <http://www.polioeradication.org/casecount.asp>. Accessed on April 7, 2008.
3. Conclusions and Recommendations. Interim Meeting of the India Expert Advisory Group for Polio Eradication Delhi, India, 19-20 December 2007.
4. Butcher J. Polio eradication nears the end game. *Lancet Neurol* 2008; 7: 292-293.
5. National Family Health Survey (NFHS-3), 2005-06: India: Volume I, 2007. Available at: [http://www.nfhsindia.org/NFHS-3%20Data/VOL-1/National%20Family%20Health%20Survey%202005-06%20India%20Report%20-%20Volume%20I%20\(6823K\).pdf](http://www.nfhsindia.org/NFHS-3%20Data/VOL-1/National%20Family%20Health%20Survey%202005-06%20India%20Report%20-%20Volume%20I%20(6823K).pdf). Accessed on April 7, 2008.
6. Polio Eradication Committee, Indian Academy of Pediatrics. Recommendations of 2nd National Consultative Meeting of IAP on Polio Eradication and Improvement of Routine Immunization. *Indian Pediatr* 2008; 45: 367-378.
7. Singhal T, Amdekar YK, Thacker N. Indian Academy of Pediatrics. IAP Committee on Immunization. *Indian Pediatr* 2007; 44: 390-392.
8. Paul Y. OPV cannot eradicate polio from India: Do we need any further evidence? *Vaccine* 2008; 26: 2058-2061.