Editorial

Indian Academy of Pediatrics and Polio Eradication in India

A special meeting of the India Expert Advisory Group (IEAG) on Polio Eradication was called on 28 July 2006, to analyze the reasons why polio has increased in western Uttar Pradesh in 2006, and to suggest remedial actions. Among other resolutions, the IEAG made a specific request to IAP: "Recognizing that the IAP is widely known as an authoritative Indian professional body, and that the IAP has been strongly supportive of the eradication initiative, the IEAG requests the IAP to make a strong statement in support of the polio eradication programme to counter negative press and to reassure the public and health workers about the quality of the vaccine and their belief in the eradication strategies. This process must be supported by the partners."

In the past many months, there have been a few local media reports that tended to create mistrust in the minds of people about the very intention of polio eradication initiative and also about the intervention tool, namely the oral polio vaccine (OPV). From the beginning, IAP has strongly supported the polio eradication initiative and the strategies designed to achieve the goal. IAP Polio Eradication Committee (PEC) was constituted in 1997 by Dr.A. Parthasarathy and since then IAP PEC has been working to help achieve polio eradication in India through its network of coordinators. Since inception, PEC has done a commendable job under guidance of all past presidents and office bearers.

The basis of our support for polio eradication is in the best interests of our children. During 1979 to 1988, there was no decline in polio incidence in India -- in spite of 10 years of 'routine' immunization using OPV. According to estimates based on clinically diagnosed paralytic polio under the Sample Survey Scheme, the annual numbers were 200,000 and 400,000 for a daily average of 500-1000 paralyzed children(1). Since 1995, the National Polio Surveillance Project and the Polio Laboratory Network have been implementing/supervising nation-wide surveillance for acute flaccid paralysis (AFP) and for wild polioviruses. While eradication has not yet been reached, the incidence is down by 99.95%. During 2000, 2001 and 2003, the annual cases were less than 300; it was only 134 in 2004 and a mere 66 in 2005. We believe that an estimated 3-4 million children have been saved from polio paralysis since we started the polio eradication initiative. 1998 (1934 cases), 2002 (1600 cases) and now 2006 (155 cases as on 4th August 2006), at 4-year intervals, have seen surges in paralytic polio cases, but each successive peak was lower than the previous. What we see this year would have been seen in less than half-a-day 20 years ago.

Polio has not yet been eliminated, and there are specific reasons for the delay. IAP as a body and individual members of IAP have clearly spelled out most of them in the past. In other words, IAP has not been a blind supporter of all activities under the eradication mode. IAP representatives are part of IEAG on polio eradication and have participated and raised IAP's concerns from time to time in all IEAG meetings. At the same time, IAP and its members have fully supported the plans of

action once they were accepted by the Govt. of India and partner agencies and have diligently played our part with discipline and determination. And we will continue to do so.

While the WHO had clearly enunciated the very first element of eradication strategy as the strengthening of 'routine' childhood immunization programme, several state health systems paid only lip-service to it. Therefore, in several states, pulse polio immunization campaigns had to be relied upon, almost exclusively, for expediency. This distortion has been one of the root causes of India's problems with polio elimination.

The IAP recommendation for a five-dose infant immunization with OPV, if accepted as national policy, would have had three positive effects. One, by 9 months a majority of infants would have developed a reasonable level of immunity. Second, as four doses would have been given by 4 months of age, under the cover of maternal antibodies, the risk of VAPP would have been minimized. Third, had eradication efforts been built on such solid foundation, much of the present problem could have been avoided, or at least detected and remedied earlier. For example, the magnitude of 5-dose failure would have become visible and the optimum number of doses could have been identified in different regions. The age of vaccine-failure polio would have identified the speed required for effective immunization to create the necessary 'herd effect' to retard the speed of wild virus circulation.

In western UP, where there is a moderate upswing of polio cases this year, the optimum number of OPV required is about 10 doses by 9 months of age. Carefully planned pulse campaigns should have aimed at maximizing the number of doses during infancy, so that immunity could be achieved faster than the speed of wild virus circulation. Even this elementary epidemiological 'diagnosis and prescription' were not quickly internalized or acted upon. Consequently wild virus has continued to circulate and paralyze non-immune children. Many children remain non-immune in spite of taking 4, often 5-7 or in a small proportion even 10 or more doses of OPV. Thus, questions of the potency of OPV have been raised -- quite legitimate, no doubt. The very introduction of vaccine vial monitors (VVM) was to ensure the potency of OPV in the field. More recently there have been laboratory studies to measure the potency of many batches of vaccine, both trivalent and monovalent, and as presented in the July 28 meeting, every batch had higher than recommended potency. Thus, the problem lies elsewhere, not in suboptimal vaccine potency.

A vicious cycle has developed, particularly in western UP, centred around Moradabad, extending into JP Nagar, Rampur, Badaun, Bareilly and a few other districts. The speed of immunization has not overtaken the speed of wild virus transmission. As virus circulation persists, the children who failed to get immunized with many doses develop paralytic polio. With the consequent 'loss of faith' in OPV, the pressure to give more doses is misconstrued to carry hidden motives. We can categorically state that there is no element of truth in such allegations. The OPV given to children in UP is of excellent quality, made by certified manufacturers and carefully quality-controlled.

One unfortunate element of downward pull in this vicious cycle is the declining vaccine coverage in pulse campaigns. There is evidence that health workers collude with families in falsifying data. In 2005 and 2006, workers themselves have not vaccinated quite a few children they documented as vaccinated. So, today if the mother says her

child with polio paralysis had taken 10 doses, that history is not reliable. The most important partners in the eradication drive are families and health workers. However hard the other partners -- WHO, UNICEF, Rotary, other NGOs, IAP, international donors etc - work, if families and health workers do not cooperate, then it will indeed be a very near impossible task to succeed. It is the duty of every member of IAP to work with the community and the health system personnel at state, district and local levels to educate, encourage and empower them to fulfill the national pledge to eradicate polio.

The 28 July IEAG has made a recommendation, proposed by and fully justified by IAP, to introduce IPV (enhanced potency IPV -- eIPV -- as is the current IPV the world over) in western UP, to begin with. The vaccine has now been licensed in the country by the Drugs Controller General. We hope that for the first time India will be able to use both OPV and IPV - each has specific advantages and drawbacks. However, the two can be made to act in a complimentary mode, each covering the deficiency of the other. Thus, three doses of IPV can ensure immunity in near-100% infants vaccinated with it and the speed of this process can easily overtake even the fastest speed of wild virus transmission (as seen in UP today). Even two doses will work almost equally well provided the first dose is given at or after 8 weeks of age after the peak of maternal antibody has declined - and the interval between the 2 doses is at least 8 weeks(2). These are immunologically predictable phenomena and they have also been documented in detailed investigations in India(2). OPV, on the other hand, can be given repeatedly in campaigns during which volunteers can feed the drops to children. So, the addition of IPV, in a 2-dose beginning, need not and must not take anything away from the current OPV schedule and pulse campaigns. IAP is fully supportive and we are in the process of designing ways of translating these into 'doable' modules. Should IPV be in campaigns or in age-based routine immunization? Should IPV campaigns, if that is eventually preferred, be just IPV only, or should other vaccines such as DPT, measles vaccine etc be given together in campaigns? These and similar options are now being debated and whatever the final decision by the Govt. of India and the UP State Govt., IAP will fully endorse and support it and work hard to achieve the desired outcome.

Under the IAP Action Plan for 2006, a National Consensus Meeting on Polio was originally planned to take place in January 2006. As the number of polio cases was low in 2005, it was decided to postpone it to November, 2006. As the scene has changed during the first 3 quarters of 2006, the National Consensus Meeting has now been re-scheduled to meet on 1st October 2006. We will have wider participation to discuss, deliberate, debate and arrive at a consensus amongst the IAP experts on the course India should follow this year and in coming years, including the years after polio eradication is eventually achieved by India. We will report back to the IAP members after that meeting. But till then, we appeal to every IAP member, and all Public Health and health care professionals on whom IAP has any influence, to work unitedly to achieve polio eradication. We request them to uphold the morale of the workers and the trust of the families and to refrain from creating or spreading messages of despair and disharmony. Once success is achieved, it will erase the memories of our small failures on the way.

Contributors: The idea to write this editorial emerged from a meeting of the three co-authors and was

endorsed by the Editor-in-chief. TJJ collected the data and wrote the paper, which was edited by NKS and NT. TJJ shall act as guarantor.

Funding: None.

Competing interests: All co-authors are currently members of the IAP Polio Eradication Committee and the IEAG. We have collective accountability for the recommendations made to the Ministry of Health and Family Welfare on the tactics of polio eradication. We are not paid any salary by the Indian Pediatrics and will not be affected financially by increase in its impact factor.

T. Jacob John*,
Co-chairperson, IAP Polio Eradication Committee,
439 Civil Supplies Godown Lane, Kamalakshipuram,
Vellore, TN, 632 002
E-mail: vlr_tjjohn@sancharnet.in

** Corresponding author*

Nitin K. Shah,
President, IAP 2006 and Chairperson, IAP Polio Eradication Committee,
186/A-3, Vaswani Villa, Jain Society, Sion, (West), Mumbai 400 022
India
E-mail: drnitinshah@hotmail.com

Naveen Thacker,
President-Elect IAP and Convener, IAP, Polio Eradication Committee,
E-mail: drnaveenthacker@gmail.com

REFERENCES

1. Basu RN. Magnitude of problem of poliomyelitis in India. Indian Pediatr 1981; 18: 507-511.
2. Simoes EAF, Padmini B, Steinhoff MC, Jadhav M, John TJ. Antibody response of infants to two doses of inactivated polio vaccine of enhanced potency. Amer J Dis Child 1985; 139: 977-980.