Editorial

India's Polio Eradication Efforts at Cross Roads

The world cannot eradicate poliomyelitis until India eliminates it from its territory. Although we say that the disease poliomyelitis is to be eliminated territorially and eradicated globally, what we mean is that polioviruses which cause the disease are to be prevented from infecting even a single human being anywhere. This can be achieved only when wild polioviruses are interrupted from transmission and vaccine viruses are discontinued from use(l). For convenience and clarity, the term *phase w* will denote the elimination of wild viruses and *phase v,* the total eradication when oral polio vaccine will no longer be given(l). The World Health Organization (WHO) and the Government of India (GOI) have promised that *phase w* will be achieved by the year 2000.

Investigations must be properly designed and conducted in order to prove and document that wild virus transmission has been interrupted and *phase w* has been achieved. For this purpose, all cases of acute flaccid paralysis (AFP) must be detected, reported and investigated for poliovirus etiology within a week or two of onset. In addition, the possible silent (subclinical) infection by any poliovirus must be investigated to ascertain its absence. The WHO uses a surrogate marker for the absence of silent infection, namely, the complete absence of disease due to polioviruses ('zero polio') during 3 consecutive years. In other words, to meet the target date of 2000 in India, there must not be any AFP due to wild poliovirus during the 3 preceding years, beginning on January 1, 1998. Even if a single case is found since that date, the WHO and the GOI will have failed in their policy, plan and programme. We hope that we will not be let down by them, but if we are let down, India's honour and WHO's credibility will be damaged beyond repair. In that case India's own experts must be given the opportunity to prove our capacity to achieve the goal and retrieve our nation's prestige. The Indian Academy of Pediatrics (IAP) will not be found wanting, should we be called upon to assist or to give leadership.

The "force of transmission" of polioviruses in our country is greater than in the west, including Latin America. Therefore, the tactics of immunization has to be more aggressive here than elsewhere, if we must interrupt virus circulation(2). The access to and utilization of medical care by the population are vastly different from elsewhere; hence our AFP surveillance system must be designed to suit our conditions, if we must succeed in detecting all cases. Moreover, the reliability of the surrogate marker for the absence of silent poliovirus circulation needs to be validated in India wherein the force of transmission is the highest recorded in the world. For these 3 reasons, it is risky to transplant the Latin American model of polio eradication in India, without making suitable modifications. The models of pulse immunization developed and field tested in India nearly two decades ago(3-6) and the disease surveillance system designed and sustained successfully in the North Arcot and Tiruvannamalai districts for over a decade are indeed

better suited for our needs and under our conditions than any others(7,8).

The early detection and timely reporting of AFP in all geographic communities by the design and implementation of a system, is called *surveillance.* Since each and every case of AFP must be investigated for poliovirus etiology in order to monitor eradication efforts, AFP surveillance is an essential ingredient of polio eradication. In this issue of Indian Pediatrics is an important paper evaluating the sensitivity (efficiency) of polio surveillance in India by using the available, but meagre, data base of the reported cases and lameness surveys(9). The authors estimated that the sensitivity (proportion of cases of polio that was reported) was 8% in 1981, 20% in 1989 and 32% in 1992(9). We must first examine the reliability of these estimates. In 1981-82 the annual incidence of polio had been estimated using lameness survey data and published; the range was 20 to 40 cases per 100,000 population(10,ll). During 1979 to 1981, polio incidence was measured in a town and a rural block in Tamil Nadu by prospective surveillance; the true incidence was about 30(6). Surprisingly, as much polio was found in the rural area as in the town. In the paper on the sensitivity of surveillance, the estimated incidence was 25; since this figure is an underestimate of the true incidence, the calculated sensitivity (of 8%) is an overestimate^). By 1989 and 1992, the immunization performance, hence the incidence of disease, was quite varied in different parts of the country and generalization would no longer be reliable. However for want of better data we must put to use what we have. In 1992, four years after India signed the pledge to eradicate polio by 2000, only a third of the cases of polio were being reported(9).

Matched against the definition given earlier, we can see that India's polio surveillance is qualitatively very poor. There is no design for the systematic and timely collection of data that covers every nook and corner of our vast country and population. AFP, when clinically suspected as Guillain Barre syndrome, or another neurological condition, is not being reported by many doctors, since the surveillance system has not been properly designed and implemented. Many children with AFP are taken to 'healers' of other systems of medicine; such healers have not been networked for reporting(7,8,12). So, what we have is, a patcy, sentinel based and incomplete reporting of cases diagnosed as poliomyelitis by doctors, which cannot even be called AFP surveillance, the very first ingredient essential for monitoring polio eradication. Furthermore, there are too few laboratories in India capable of isolating polioviruses from stool specimens to meet the surveillance needs of the country. Hence, specimens have to be transported over long distances for virological investigations, which is likely to give rise to false negative laboratory results. We have not ascertained if the surrogate marker of zero polio is sufficient for India to prove the absence of silent poliovirus transmission. We have not established how we will handle the storage of wild poliovirus isolates in various laboratories in the country during and after the elimination *phase w.*

Only a third of the cases are reported; only a fraction of them are investigated in a timely manner, laboratory facilities are inadequate; for these reasons, India is today incapable of proving and documenting the absence of AFP due to polioviruses based on negative results of virological studies. The earlier we realize these unpleasant facts the better, for the need of the hour is the designing and the implementation of an efficient and sustainable surveillance system with the necessary laboratory

support. Our public health experts are competent and motivated to design and implement an appropriate surveillance system, provided they are charged with this mandate. They know the ground realities like the palms of their hands. Give them the mission, and the freedom, respect and credit they deserve, and they will deliver the goods. What worked in Bolivia, Columbia or Uruguway may not necessarily work in Bihar, Orissa or Uttar Pradesh. To make matters worse, I am given to understand that in our country the health care system upon which alone a proper surveillance system can be developed, and the polio eradication efforts including immunization and monitoring are dichotomized under two separate Departments of the GOI. If true, this is a flaw that must be rectified as soon as possible.

During the 1970's India had established an excellent system of surveillance of small pox. Once small pox was eradicated, the surveillance system was dismantled. Today, poliomyelitis is not the number one priority of public health in India. However, we must eradicate it for the sake of the rest of the world. Should we repeat history by creating a one-syndrome surveillance or do we not owe it to our people to establish a surveillance system as the initial step for the control of all preventable diseases of public health importance? The WHO would perhaps be shortsighted enough to want only an exclusive AFP surveillance in India, rather than help us to build a broad based multi disease surveillance system and empower the GOI to begin controlling the several infectious diseases that plague us.

The Department of Health has established a National Apical Advisory Committee for Disease Surveillance in India. This Committee has commenced a process to establish a nationwide district based comprehensive disease surveillance system, covering several diseases of public health importance, including AFP as of high priority. This is a step in the right direction. The WHO in collaboration with the Department of Family Welfare is reinforcing an exclusive AFP detection and reporting system in India. That is a step in the wrong direction, unless coordinated with the former effort. The elimination of polioviruses requires adequate surveillance, adequate virological investigations and adequate immunization. Some progressive States are capable of achieving these immediately. Should they be synchronized with the more problematic States, or, can the elimination of polio be achieved and documented at first in those States that are ready for it and thereafter all national efforts focused on those States that require additional inputs?

As the count down on polio eradication has begun on January 1,1998, we are still at cross roads with several avenues in front of us to choose from. There are alternate tactics possible for disease surveillance, virological investigation and polio immunization. Are we free enough to be autonomous in our choices or are we still looking westward for guidance? Fifty years after achieving political independence, are we intellectually independent? The least the GOI must do now is to establish a national think tank consisting of Indian scientists, administrators, experts of the Indian Council of Medical Research, and representatives of the IAP and the Indian Medical Association and other relevant agencies, if any. Let the think tank review the policy, plan and programme of polio eradication and set them within the context of the larger interests of the nation in controlling the many infectious diseases of public health importance in India. Accepting responsibility is the hall mark of being free. May the 21st century dawn on an

India free from polioviruses and from the many viruses of apathy, corruption and diffidence.

T. Jacob John
President Elect,
Indian Academy of Pediatrics
Thekkekara,
2/91 E2, Kamalakshipnram,
Vellore, Tamil Nadu 632 002.

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