

THE ASIAN AGE

2009: India's vaccine regime set to change

Dr Kurien Thomas

Few societies appreciate the value of vaccines more than India. Many viral and bacterial killers that had ravaged our country throughout history were quelled in the 20th century by effective use of vaccines.

India's conquest of smallpox, for example, was one of the great public health events of our time, and largely a result of dedicated use of the smallpox vaccine. Across India, children are routinely immunised against major diseases. Public health researchers have estimated the millions of lives — and billions of dollars — saved as a result of these efforts. Indeed, taking one's child for his or her next shot as part of the Universal Immunisation Programme (UIP) has become a rite of passage for Indian parents.

The collective experience of the global community is similar. The World Health Organisation inaugurated its Expanded Programme on Immunisation (EPI) in 1974. In the next 30 years, the number of deaths caused by measles dropped from six million a year to below 350,000; whooping cough deaths fell from three million a year to less than 250,000; diphtheria numbers came down from 80,000 a year to under 5,000.

Somewhere in these statistics lay India's heartwarming success. Its sheer size and population meant that India's progress on vaccination could make or mar the global campaign. Even though there is significant variation in vaccine delivery across different regions, in general India's health system has not let down its people. Each one of the 27 million babies born in India in any given year is precious and deserves the best preventive strategy for optimum health. This includes state-of-the-art vaccination.

Vaccines are a business, it is said, but vaccination is a calling. More than any other intervention perhaps, a public immunisation programme marries morality to medicine. Vaccines are also the most cost-effective health intervention man has developed.

Vaccination is a social equaliser, protecting rich and poor children alike and enabling the government to address rampant health inequities. It is, therefore, imperative to not see a vaccination programme or a UIP as a static project but one that requires continuous inputs and improvements.

New technologies, new delivery systems and new vaccines have to be constantly surveyed, tested and incorporated. A UIP designed in, say, 1974, cannot be expected to optimally protect children from all prevalent diseases 35 years later.

This is what makes the government's proposed upgrade of India's UIP in 2009 so exciting as well as fulfilling. The menu of viruses and bacteria that tomorrow's citizens will be protected against is being expanded.

The Hepatitis B (Hep B) vaccine has already been introduced in 10 states, beginning 2003. Now the challenge of pneumonia — which causes one in five child deaths worldwide — remains.

Little attention is paid to the threat pneumonia poses to Indian children and to the toll it can take. Vaccines targeting the leading bacterial causes of pneumonia, Hib (Haemophilus influenzae type B) and pneumococcus — two deadly bacteria that can also cause meningitis and septicemia — will certainly bolster India's UIP.

Used widely in both industrialised and developing countries for more than 15 years, the vaccines are highly efficacious and safe. Together they have the extraordinary power to reduce the incidence of pneumonia in children, thus assuring a healthier journey to adulthood.

Each year Hib and pneumococcal diseases claim the lives of more than 1.2 million children. This toll is even larger than malaria, a well-recognised problem in India.

To put things in perspective, Hib kills eight children an hour in India. That's 70,000 children a year.

Even when children survive, the effects of these diseases may continue to affect their lives. When pneumococcal and Hib disease strike as meningitis, it ends in death for about a quarter to a third of its victims, and leaves another 15-35 per cent with life-long disabilities such as blindness, deafness and mental impairment.

The innovation in India's UIP includes the introduction of the pentavalent vaccine. It combines five vaccines — diphtheria, tetanus and pertussis/whooping cough (DTP, as they are collectively known), Hep B and Hib — and represents a landmark in vaccination strategy.

In addition to providing relief to children, who dread multiple painful vaccinations, it will be economical, more efficient, and will save parents and health officials worry about multiple visits to the clinic.

Vaccine delivery necessarily follows a simple evolution plan: move from "fewer vaccines and more jabs" to "more vaccines with fewer jabs".

The pentavalent vaccine, however, will require investment in infrastructure and better storage systems, thereby enabling the UIP to embrace still more technologies in the future, as and when these may be available or relevant. For these reasons, the introduction of the pentavalent delivery method and of the Hib vaccine to the Indian immunisation programme will be a model for public health professionals worldwide.

The author is president of the Indian Clinical Epidemiology Network, and Professor of Medicine, Christian Medical College, Vellore, Tamil Nadu