

Pneumococcal Conjugate Vaccine Introduction in India's Universal Immunization Program

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For the first time, millions of children in India will receive protection for free against the leading cause of pneumonia, which kills more under-five children than any other infectious disease in the world [1] and in India – thanks to the launch of the pneumococcal conjugate vaccine (PCV). Until now, PCV was only available in the private sector in India, putting it beyond the reach of most of the population. By making it available under the Universal immunization program (UIP), the government of India is ensuring equitable access to those who need them the most – the underprivileged and underserved.

PCV was launched by the Union Health Minister, Shri JP Nadda on May 13, 2017 at Mandi, Himachal Pradesh [1]. With this phased introduction, nearly 2.1 million children in Himachal Pradesh (all 12 districts), parts of Bihar (17 out of 38 districts) and Uttar Pradesh (6 out of 75 districts) will be vaccinated with PCV in the first year [2]. This will be followed by introduction in Madhya Pradesh and Rajasthan next year, and eventually coverage will be expanded across the entire country in a phased manner, in the coming years. India's UIP started with providing protection against six vaccine preventable diseases; with the introduction of PCV it will now offer protection to our children from 12 diseases (Tuberculosis, Polio, Diphtheria, Pertussis, Tetanus, Hepatitis B, Measles, *Hemophilus influenzae b* (Hib), Rotavirus diarrhea, Japanese encephalitis (in endemic states), Rubella and Pneumococcal disease) [2]. The pentavalent vaccine that includes a vaccine against Hib pneumonia was scaled up in all states under the UIP by 2015. Now, the introduction of PCV in the UIP will reduce child deaths from pneumococcal pneumonia. It is also likely to reduce the number of children being hospitalized for pneumonia, and therefore reduce the economic burden on families and the health cost burden on the country. It is imperative that pediatricians in private practice also support the government's commitment to protect India's children and support India's immunization program and the introduction of PCV.

Pneumonia is the single largest infectious cause of death among under-five children worldwide, accounting for about 0.92 million deaths in 2015. It is estimated that 1 in 6 deaths in under-five children was due to pneumonia in 2015 [3]. More than 80% of deaths associated with pneumonia occur in children during the first two years of life [4]. Pneumococcal disease is also the number one vaccine-preventable cause of death in children under five, globally and in India [1]. Pneumococcal pneumonia in particular is a major public health concern for children globally. This infection accounts for 18% of all severe pneumonia cases and 33% of all pneumonia deaths worldwide [4,5].

India has a pneumonia mortality rate of 7 per 1000 live births [6]. As in the global scenario, pneumonia due to *Streptococcus pneumoniae* (pneumococcal pneumonia) is responsible for a large portion of pneumonia episodes and deaths. In 2010, 3.6 million episodes of severe pneumonia and 0.35 million all-cause pneumonia deaths occurred in children under the age of 5 years in India. Among those, 0.56 million episodes of severe pneumonia (16%) and 0.10 million deaths (30%), respectively, were caused by pneumococcal pneumonia [4].

The UIP aims to vaccinate 26 million newborns and 30 million pregnant mothers annually for vaccines covered by this program [7]. More than 9 million immunization sessions are conducted annually with nearly 27,000 cold chain points across the country [7]. Mission Indradhanush, launched in 2014, is a national immunization drive that aims to strengthen India's immunization system and increase full immunization coverage to at least 90% by 2018 [8]. Mission Indradhanush has led to vaccination of around 21 million children of which more than 5.5 million children have been fully immunized [9]. In addition, 5.5 million pregnant women were immunized with TT vaccination [8]. From 1% annual increase in coverage of full immunization, Mission Indradhanush has resulted in a 6.7% annual expansion in the immunization cover [8].

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