

S111

2-hour Symposium

Poliomyelitis eradication: steps forwards and residual threats

Eradicating polio in India: a story of success

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The last wild poliovirus (WPV) case in India was reported in Howrah, West Bengal on 13th January 2011. The South East Asia Region of the WHO was certified polio-free on 27th March 2014.

India followed the basic strategy for polio eradication recommended by the WHO and most importantly a number of innovations were introduced to achieve the goal. The National Polio Surveillance Unit was established in collaboration with the WHO for acute flaccid paralysis (AFP) surveillance, data management, planning and micro-planning of NID/Sub-NID OPV immunization and time-bound consultations with national and international experts in public health, virologists, immunization practices and funding agencies.

AFP surveillance was carried out by specially trained surveillance medical officers (SMO) in close coordination with the State EPI officers and district health/immunization officers. Seven National Polio Laboratories and one Global Specialized Polio Laboratory (all WHO accredited) provided virology laboratory support by testing stool samples of AFP cases for poliovirus isolation, wild poliovirus identification and genetic sequence analysis.

Annual NID (2 rounds) were conducted since December 1995. Polio decreased from more than 150000 cases (estimates in early-1980s) to less than 2000 virologically confirmed WPV cases in the year 1998. Furthermore, the last polio case of WPV2 was recorded in 1999 in Uttar Pradesh. WPV cases declined to 265 in 2000 and 66 (62 WPV1 and 4 WPV3) in 2005. Unfortunately set-backs were experienced in 2002 and 2006 with resurgence of WPV1 and in 2007-8 of WPV3.

Innovations included timely introduction of monovalent OPV1 (mOPV1) in 2005 and later mOPV3 and the bivalent OPV1+3 (bOPV) in 2009 at various stages. Engagement with religious leaders and appeals by iconic personalities to overcome refusal to vaccinate children paid enormous dividends. Children of socio-economically backward communities, religious minorities, migratory workers as well as those in transit were given special attention for vaccination during NID/sub-NID and SIA. Microplans were also developed for SIAs for addressing difficulties in 107 high risk blocks in UP and Bihar. Molecular epidemiology of WPV isolates from cases as well as environmental samples provided insight into virus transmission from high risk areas into polio-free States. Poliovirus antibody sero-prevalence surveys started in 2007 provided estimates of population immunity before and after introduction of mOPV and bOPV. In the final stages AFP surveillance sensitivity was increased at the cost of losing specificity. Environmental sewage samples surveillance was expanded to include sites in Delhi, Bihar and West Bengal. Cross-border immunization activities were established with neighboring countries to minimize the risk WPV exportation. The country is now empowered with Emergency Response Plans should WPV importation occur.

Achieving zero-polio in India has reinforced global efforts to stop wild poliovirus in Pakistan, Afghanistan and Pakistan.