

India Case Study

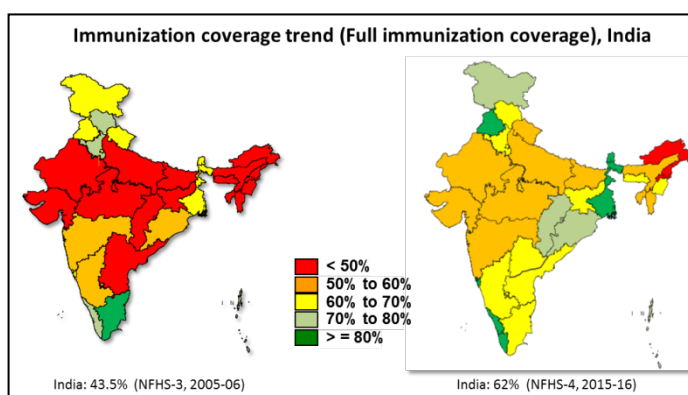
Utilization of Immunization Data to Improve Evidence-based Decision-Making

Background

India's Universal Immunization Programme (UIP) has been one of the largest public health programmes targeting to annual cohorts of around 26 million infants and 29 million pregnant women. UIP has greatly contributed to reducing the burden of vaccine-preventable diseases (VPDs), and saving the lives of millions of children as is evident from the decline of annual under-five mortality, from 3.3 million in 1990 to 1.2 million deaths in 2015, a significant proportion of this decline has been a result of immunization against vaccine preventable diseases.

Challenges

Despite steady progress through a variety of improved strategies, the full immunization coverage (FIC) (coverage of all antigens up to one year of age) had improved at a slow rate, with only 1% average increase each year among children aged 12-23 months .i.e. from 35.5% in the first National Family Health Survey (NFHS-1) (1992-93) to 62% in the 4th NFHS-4 (2015-16). Health system strengthening through National Health Mission has provided a major thrust in improvement as is evident from 1.8% annual increase in FIC between NFHS-3, 2005-06 (43.5%) and NFHS-4 (62%) which was only 0.6% between NFHS-1 (35.5%) and NFHS-3 (43.5%).

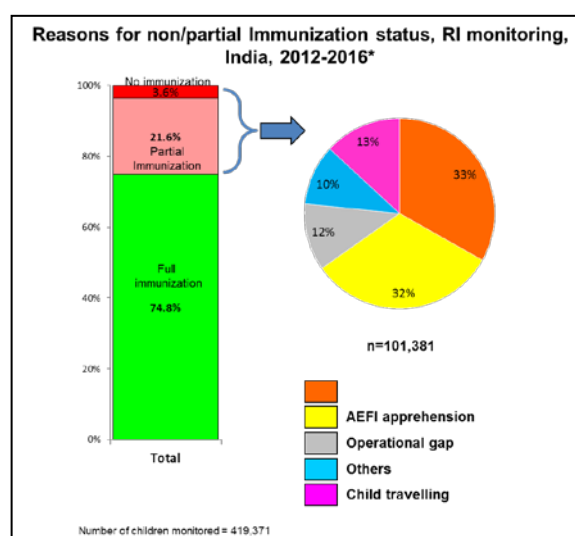


Although vaccines under UIP are provided free of cost across public health facilities & outreach sessions, still nearly 8 million children in the country do not receive all available vaccines due to demand-supply inequities among different population groups that limit vaccination coverage.

Data for better health outcomes

A more comprehensive review of the NFHS-4 data highlights considerable inequity in full vaccination coverage in different states/union territories, with Puducherry having 91% coverage and Nagaland having as low as 35% coverage, while other factors like gender, birth order, area of residence, wealth, parental education), topography, demography etc. also contributed to inequity. It was also noticed that the improvement in full immunization coverage was more in rural areas (from 39% NFHS-3 to 61% NFHS-4), as compared to urban areas.

WHO- National Polio Surveillance Project's (NPSP) routine monitoring data also provided information on immunization coverage with some insights into reasons for partial and non-immunization, which shows that lack of information about immunization accounts for two-thirds of these children, and 12% due to operational gaps.



In response to improving immunization coverage and addressing the equity agenda, the Prime Minister and the Ministry of Health & Family Welfare launched a focused and systematic immunization drive 'Mission Indradhanush' (MI) in December 2014 with the objective of rapidly raising national full immunization coverage to 90% by 2020, timeline of which was later advanced to 2018.

MI has been an excellent example of how data plays a crucial role at every stage of implementation of an intervention. MI aimed at covering unimmunized and partially immunized children and pregnant women in pockets of low immunization coverage, hard-to-reach and high-risk areas. A total of 537 districts were covered in the five phases of MI covering 33.4 million children and 8.6 million pregnant women with immunization services. Initially, the districts were identified on the basis of latest available Rapid Survey of Children (RSOC 2013-14) and were categorized as high priority and medium priority on the basis of estimated no. of missed children and were covered in phase-1 and 2 of MI



respectively. For the 3rd and 4th phase of MI, triangulation of data was done using WHO concurrent monitoring and national survey data to identify districts to be covered in MI. In the last phase of MI also known as Intensified Mission Indradhanush (IMI), a more elaborate districts wise exercise was conducted where best estimate of coverage of DPT3 was used instead of FIC used in previous phases. This best estimate was arrived at using methodology of 'WHO and UNICEF estimates of immunization coverage' (WUENIC) that utilized administrative data, survey data and monitoring data. On

this basis districts fulfilling the following criteria were selected: 1) at least 13,000 children were estimated to have missed DPT3/Pentavalent-3 or; 2) DPT3/Pentavalent 3 coverage was estimated to be less than 70%. These datasets were further analyzed in consultation with the states and partners (WHO, UNICEF, etc.) to further add any districts having weak health systems or those districts from where outbreaks of vaccine preventable diseases had been reported.

In all the phases, daily reporting of coverage was ensured right from session site up to national level (through district followed by state) which was analyzed at all levels on a daily basis to identify the challenges encountered and address the same. Further, more than 2000 monitors from WHO-NPSP, supervisory cadre of govt. and Medical Officers did monitoring of session sites as well as house to house monitoring. IT based monitoring tool was used which is based on of Android-based Open Data Kit (ODK) tool so that the monitoring data was available without delay and could be actually used of corrective action during the ongoing activity.



Using immunization and surveillance data for better decision-making

Despite huge infrastructure for the delivery of vaccines, the programme lacks systems to generate reliable laboratory-supported disease surveillance data to measure the impact of this programme and effectively guide public health interventions.

To assess the overall performance and impact of the immunization programme, laboratory supported case-based surveillance for diphtheria, pertussis and neonatal tetanus is established in seven states, between 2015 and 2018, through joint efforts of the government and WHO. Plans to expand case-based vaccine preventable disease surveillance to other states are ongoing. In addition, nationwide laboratory supported AFP surveillance and measles rubella surveillance is ongoing.

Analysis of the data of VPD surveillance provided valuable inputs on changing epidemiology of diphtheria to higher age-group that helped National Technical Advisory Group on Immunization (NTAGI) to recommend replacement of Tetanus toxoid (TT) with Tetanus and adult diphtheria (Td) vaccine for routine immunization by December 2018.

