

Evaluation of India's 'Mission Indradhanush' finds improvements in vaccination outcomes

July 16 2021



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Researchers at CDDEP recently evaluated the performance of India's Mission Indradhanush (MI) child vaccination campaign—a periodic

intensification of the routine immunization program.

Each year, 1.2 million Indian [children](#) die, accounting for a fifth of global under-5 deaths. Over 400,000 of these deaths are from [vaccine-preventable diseases](#). An estimated 38% of Indian children under the age of two years were not-fully-immunized in 2016. Additionally, vaccinated children received 23%-35% of the doses of polio, diphtheria-pertussis-tetanus DPT, bacillus Calmette-Guérin (BCG), and measles vaccines at later than recommended ages. Low vaccination [coverage](#) and frequently delayed vaccinations stand in juxtaposition with India's rapid economic growth in recent decades.

In December 2014, the Government of India launched Mission Indradhanush (MI), with the objective of increasing full immunization coverage. MI was a periodic intensification of the routine immunization (PIRI) program which targeted unvaccinated and under-vaccinated children by allocating more resources to underserved areas. The program was implemented in 528 districts—with low initial full immunization coverage and high dropout rates—in four phases during March 2015-July 2017. An estimated 25.5 million children across India were vaccinated under MI in this time. Despite the substantial resources allocated towards this program, there has been a lack of robust estimates of its true impact.

The study reports on associations between the first and second phases of the MI [program](#), and routine [vaccination coverage](#) and timing outcomes by employing difference-in-difference (DID) regression analysis which incorporates a rich set of socioeconomic and healthcare access indicators. The authors find that the full immunization rate was 27% higher among children under 2 years old residing in districts that received the campaign during both phase 1 and 2 (intervention group) as compared with those residing elsewhere (control group). The rate of receiving all vaccines at recommended ages was 8% higher in the

intervention group. Receiving doses of oral polio [vaccine](#) (OPV) birth dose, OPV dose 1 (OPV1), OPV2, OPV3, BCG, and hepatitis B birth dose vaccines were 9%, 9%, 11%, 16%, 5%, and 19% higher in the intervention group than the control group, respectively. However, the study did not find improved vaccination rates for children who resided in a district that only received treatment in either phase 1 or 2.

According to the lead author of the study, Amit Summan, "Our findings hold tremendous importance for India's Universal Immunization Program. In the short term, MI-like programs could substantially boost vaccine coverage and on-time delivery rates. However, their long-term sustainability and resource allocation decisions for immunization will need to be evaluated further".

More information: Amit Summan et al, Improving vaccination coverage and timeliness through periodic intensification of routine immunization: evidence from Mission Indradhanush, *Annals of the New York Academy of Sciences* (2021). [DOI: 10.1111/nyas.14657](https://doi.org/10.1111/nyas.14657)

Provided by Center for Disease Dynamics, Economics & Policy

Citation: Evaluation of India's 'Mission Indradhanush' finds improvements in vaccination outcomes (2021, July 16) retrieved 18 April 2024 from <https://medicalxpress.com/news/2021-07-india-mission-indradhanush-vaccination-outcomes.html>

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