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Estimating the value of pneumococcal conjugate vaccination in India: State-level and national-level analyses

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Background and aims: *Streptococcus pneumoniae* is a leading cause of childhood pneumonia and meningitis morbidity/mortality in India. Our objective was to project the health and economic benefits of achieving high coverage of pneumococcal conjugate vaccine (PCV) in India.

Methods: We adapted an existing model and synthesized locally available data to estimate the potential impact of PCV in India and selected states (Bihar, Delhi, Maharashtra, Tamil Nadu) in terms of averting: Deaths/cases, disease costs and productivity loss for a single year with three theoretical coverage scenarios for PCV (72%, 80%, 90%). Sensitivity analyses were performed to evaluate the impact of model assumptions.

Results: PCV in India could result in \$427 million (range \$188.1-\$719.3 million) of cost savings to the public sector in a single year. Up to \$2.4 million of these savings is attributable in averting treatment costs and \$67.4 million to meningitis-related productivity loss. Caretaker productivity and transportation costs that could be averted has accounted for \$1.2 million in savings. Averted lost productivity due to premature death represented 83% of these savings at \$355.9 million. The greatest savings to the public sector (\$57.4 million) occurred in Bihar where the burden of disease is high, followed by Maharashtra with \$7 million and Delhi with \$2.5 million. For the private sector in India, the benefits of achieving 90% of PCV in a single year result in \$1.7 billion savings. For Bihar, Maharashtra and Delhi, savings to the private sector translated into \$225 million, \$27.5 million and \$10.7 million, respectively.

Conclusion: Achieving high coverage of PCV results in substantial cost savings to the public and private sectors in India.

Biography

Tianyang Liu did her MHS in health economics in May 2013 from Johns Hopkins Bloomberg School of Public Health. Right after graduation, she worked as a health economist in the International Vaccine Access Center, responsible for the project analyzing economic impact of three childhood vaccines in India. Currently, she is working as a Researcher in the China National Health Development Research Centre, which is attached to the Ministry of Health. As part of her research interest, she is now focusing on a project analyzing the influenza vaccine uptake among health care workers in hospitals in China.

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