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Policy Brief | April 2022

# Human Papillomavirus Vaccine: A Public Health Opportunity for Cervical Cancer Prevention in Indian States

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## Executive Summary

Cervical cancer is the third most common cancer in India and is largely caused by human papillomavirus (HPV) infection. A safe and effective vaccine to prevent HPV infection has been available for over a decade in the country. However, this vaccine is only available in the private health system for a cost and is not a part of the universal immunization programme of India. Only three Indian states so far—Delhi, Punjab, and Sikkim—have introduced the HPV vaccine. Absence of a nationwide HPV vaccination programme is blocking India's progress to achieving the World Health Organization's cervical cancer elimination targets. As a result, girls who could be protected against cervical cancer will be at risk of developing this fatal disease in adulthood. This circumstance does not need to be the case.

This policy brief brings to light challenges and opportunities for HPV vaccine introduction that exist at the state level and recommends actions stakeholders can take to support the successful design and delivery of an HPV vaccination programme.



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## Introduction



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HPV vaccine is recommended for girls between ages 9 and 14

Human papillomavirus (HPV) infection is an established cause of cervical cancer. In India, cervical cancer is one of the leading causes of cancer mortality. In 2020, there were 123,907 new cases of cervical cancer and 77,348 deaths from cervical cancer in India, accounting for one-sixth of the global burden of total cases and mortality.<sup>1</sup>

Cervical cancer is highly preventable, and a safe and effective vaccine to prevent HPV infections has been available for over a decade. The HPV vaccine is primarily recommended for girls between the ages of 9 and 14 years in two doses over 6–12 months.<sup>2</sup> In India, two prophylactic HPV vaccines—a quadrivalent vaccine, Gardasil® (marketed by Merck), and a bivalent vaccine, Cervarix™ (marketed by GlaxoSmithKline)—have been licensed for prescription since 2008, as the HPV vaccine is not included in the government’s universal immunization programme (UIP). Despite encouraging evidence on the safety of the HPV vaccine and its efficacy in preventing cervical cancer, scaling up the introduction of HPV vaccination has remained a major challenge.<sup>3–5</sup> As a result, girls in India are missing the opportunity to be protected against this fatal disease.

Therefore, we conducted this study to identify and uncover various challenges and opportunities pertaining to programme design and delivery faced by the state governments that intend to introduce the HPV vaccine.

## Approach and Results

We used a phased approach that included an environmental scan (a desk review of literature on India and select Southeast Asian countries where the vaccine is included in national immunization programmes), followed by in-depth interviews (IDIs). These interviews were conducted with key stakeholders across central and state governments, as well as some professional organizations that provide technical support to the government in matters related to immunization in the country.

The environmental scan returned 54 peer-reviewed publications, 24 policy documents, and 16 media articles. The learnings from the environmental scan provided insights on introduction of the HPV vaccine that were used to inform the contents of the IDIs.

We conducted a total of 23 interviews and performed a thematic analysis to identify common themes, similarities, and differences among the views of various key stakeholders. We found that common barriers to the introduction and sustained delivery of the HPV vaccine were in the areas of vaccine perception, financing, political support, and procurement. We also, however, identified common opportunities related to existing immunization infrastructure, communication and mobilization strategies, and learnings from COVID-19 vaccination efforts that can be adapted for introduction of the HPV vaccine. We have translated these learnings into recommendations, which we have outlined below.

Cervical cancer in India  
in 2020:

123,907

new cases

77,348

deaths

## Recommendations

We offer recommendations for state governments that intend to introduce the HPV vaccine. These recommendations are formed from IDIs with states that are currently implementing the vaccination programme, as well as professional organizations that have credibility in providing technical or implementation support.



### **1 Learn from Delhi, Punjab, and Sikkim, which are implementing the HPV vaccination programme.**

These states' experiences of rolling out the HPV vaccine can be leveraged to understand best practices pertaining to capacity building, vaccine delivery, cold chain maintenance, supply, procurement, communication and social mobilization, and record keeping for state-level introduction of the HPV vaccine.

**Action:** *Develop operational guidelines required for HPV vaccine introduction that use learnings from the Indian states that are implementing the HPV vaccination programme.*



### **2 Provide education and training to all levels of health care providers in the state about cervical cancer prevention and specifically about the HPV vaccine.**

Before introducing the HPV vaccine, the states should conduct trainings for all cadres of the health system, including health officers, doctors, programme officers, National Adolescent Health Programme peer educators, auxiliary nurse midwives, and accredited social health activist workers, on the HPV vaccine, its benefits, dosage guidelines, and adverse effects following immunization.

**Action:** *Develop a comprehensive and tailored training programme that uses training materials from states that are implementing the HPV vaccination programme and adapt them to the local language of the state.*



### **3 Develop a communication strategy focusing on an integrated approach that includes social mobilization, capacity building, crisis management, media management, and advocacy.**

Experience from past vaccine introductions in India has proven that developing a comprehensive communication approach is effective in building demand for new vaccines and subsequently increasing their uptake within the communities. States would have to take their local context into consideration for developing a communication strategy specific for their needs for the HPV vaccine introduction. Social mobilization would encapsulate dispelling myths and misconceptions regarding the vaccine, identifying champions, and managing media to build the trust and confidence of the public.

**Action:** *Develop a contextualized communication and social mobilization strategy with references and learnings from past vaccination campaigns for a range of opinion leaders within the state.*



### **4 Strengthen the National Adolescent Health Programme to integrate implementation of the HPV vaccine.**

The current National Adolescent Health Programme is an existing platform through which adolescent health is addressed in the country. If the programme is strengthened to include an intensive monitoring strategy, into which HPV vaccination is integrated, detailed information could be obtained on the status of the implementation of the vaccine, and gaps could be identified by monitoring uptake, delivery, and other components of the programme.

**Action:** *Integrate HPV vaccination into the National Adolescent Health Programme and develop a monitoring strategy for the programme that can oversee implementation activities. Use this strategy to inform vaccination delivery and uptake activities, as needed.*

## Conclusion

Our study highlights that lessons on HPV vaccine programme implementation from Delhi, Punjab, and Sikkim can be adapted by state governments to ensure high uptake of the programme. The role of education and training conducted for all cadres of the health system, along with a comprehensive communication strategy, would be key to developing demand and addressing vaccine hesitancy that might arise in the community with regard to HPV. We also see an opportunity for states to strengthen the National Adolescent Health Programme, using it as a conduit for implementation of the HPV vaccine programme.

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## Acknowledgements

This policy brief has been funded by Cancer Research UK. Its contents are solely the responsibility of the authors and do not necessarily represent the official views of the funder.

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