

HPV Vaccine Lessons Learnt Project Overview

Summary

Cervical cancer is a leading cause of morbidity and mortality among women in low- and middle-income countries, with nearly a half million new cases and 275,000 deaths annually. While screening programmes have helped reduce mortality rates in high-income countries, they are often unrealistic in low-income countries. In recent years, HPV vaccines, however, have emerged as an effective solution to prevent cervical cancer in low-resource settings, and the World Health Organization recommends HPV vaccination for girls aged 9 to 13 years.

Since 2007, low- and middle-income countries have gained experience in HPV vaccine delivery through HPV vaccination demonstration projects and national programmes. Dozens of countries have now gained valuable lessons about effective methods for garnering parental acceptance and reaching young adolescent girls with the vaccine, at relatively low delivery costs.

This brief summarises the **first comprehensive review of HPV vaccine delivery experiences across 46 low- and middle-income countries**. The review was undertaken by researchers at the London School of Hygiene & Tropical Medicine and PATH from 2014 to 2016.

Highlights include key findings and lessons from HPV vaccination experience across five themes: preparation, communications, delivery, achievements, and sustainability. Accompanying two-page summaries on each theme include recommendations for HPV vaccine introduction and scale-up. Additional summaries address the value of demonstration projects and potential HPV vaccination pitfalls.

For global and country decision-makers, the increasing burden of cervical cancer means that **now is a critical time to expand evidence-based delivery of HPV vaccines**, which could protect girls around the world from cervical cancer later in life. The lessons learnt from previous country experiences can inform decision-makers on how best to implement HPV vaccine demonstration projects or national scale-up.



Lessons learnt

The review's findings confirm that **HPV vaccine delivery is feasible and can be delivered with high coverage** in low- and middle-income countries and that countries worldwide have **the experience to demonstrate successful delivery**. Key findings and lessons include:

PREPARATION

- High-level political commitment led to more effective projects and national programmes.
- Timely intersectoral planning and coordination - across health, education, and finance (particularly for national programmes) - was critical to successful implementation and sustainability.
- Integrating HPV vaccine with routine vaccination programme models and resources created efficiencies.

COMMUNICATIONS

- Effective community mobilisation activities were conducted at least one month prior to vaccination, used multiple methods, and were carried out by health workers and community leaders.
- The most effective messages were: HPV vaccine prevents cervical cancer, is safe, will not harm future fertility, and is endorsed by the government and the World Health Organization.
- Face-to-face communication with parents and communities enhanced support and mitigated spread of rumours.
- Opt-in consent, where not used for routine vaccines, increased rumours. An opt-out approach was acceptable where implemented.

DELIVERY

- Including schools in the delivery strategy attained the highest coverage.
- Enumerating the population before vaccination proved challenging and expensive but useful in developing vaccine registers and planning vaccine stock for future years.
- In schools, grade-based eligibility was logistically easier to implement than age-based eligibility.
- Utilizing a two-dose vaccination schedule was easier and cheaper than a three-dose schedule.
- Delivery of all doses within one school year minimised dropout and resulted in higher coverage.
- Use of community health workers assisted in identifying out-of-school girls and those who missed doses.
- Providing a second opportunity for vaccination was successful in reaching girls and parents who initially refused and those who were absent or out of school.

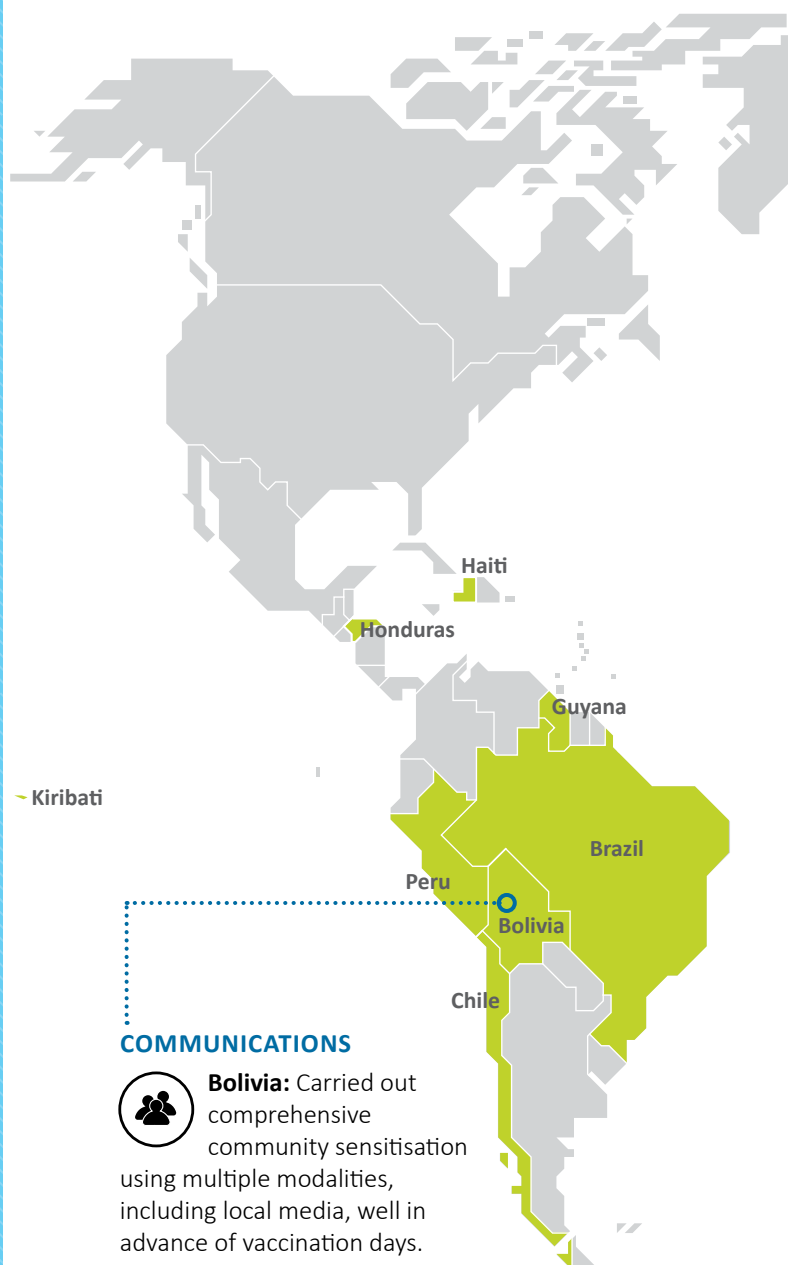
Global project overview

More than 1,750,000 girls reached

(reports from 69 of 92 delivery experiences)

Estimated at least 1,400,000 girls fully vaccinated

(reports from 56 of 92 delivery experiences)



DELIVERY

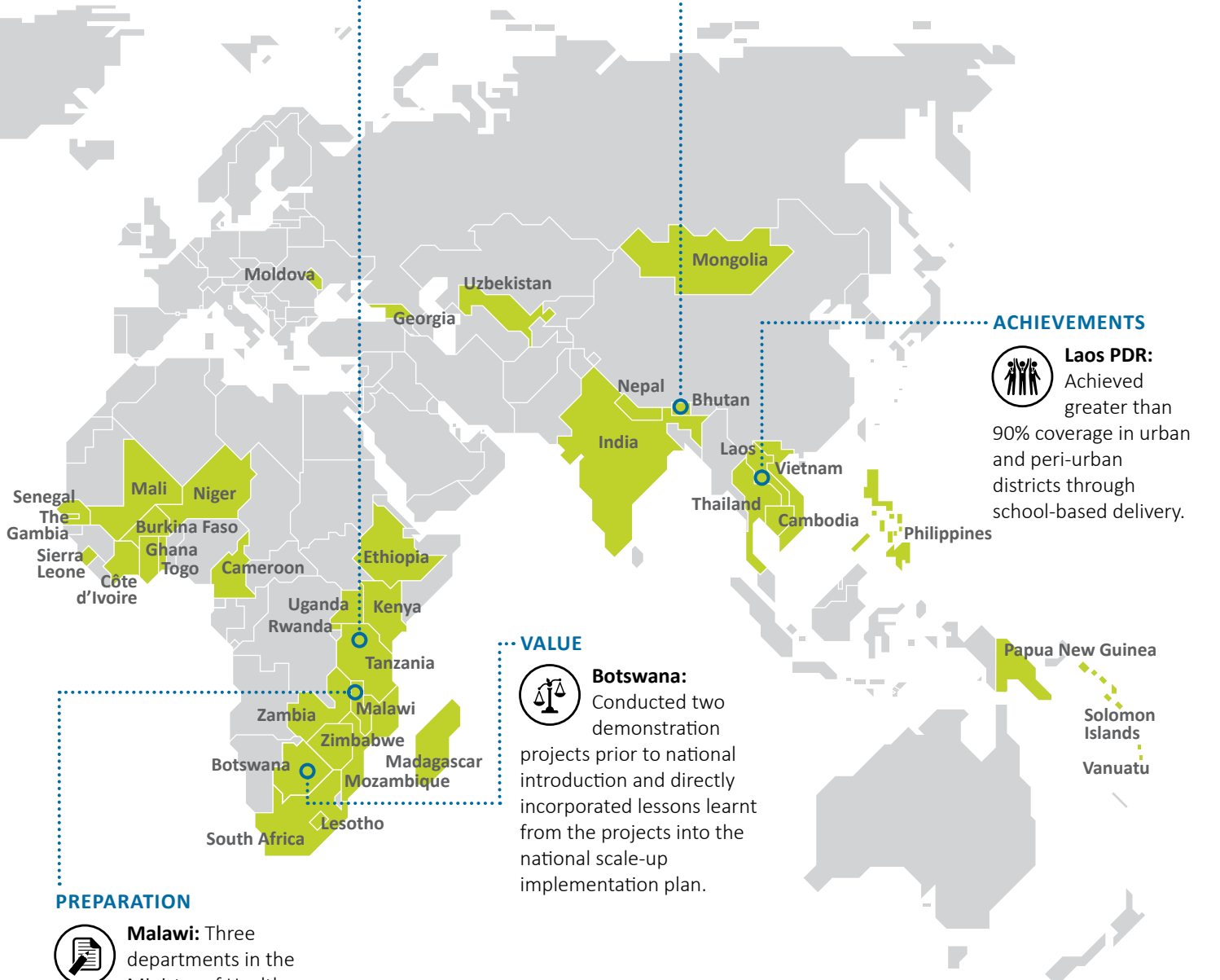


Tanzania: Successfully used schools for vaccine delivery and is testing health-facility-based delivery with outreach to schools and communities in 2015–2016.

SUSTAINABILITY



Bhutan: School-based and health facility-based delivery were implemented nationally in 2010 and 2011–2013, respectively. School-based delivery resulted in 20% higher coverage, so the country decided to use this approach from 2014 onward.



ACHIEVEMENTS



Laos PDR: Achieved greater than 90% coverage in urban and peri-urban districts through school-based delivery.

VALUE



Botswana: Conducted two demonstration projects prior to national introduction and directly incorporated lessons learnt from the projects into the national scale-up implementation plan.

PREPARATION



Malawi: Three departments in the Ministry of Health (Non-Communicable Diseases, Expanded Programme on Immunisation, Reproductive Health) worked collaboratively to plan and implement an HPV vaccine delivery programme with a high level of political commitment from the government.

PITFALLS



- Lack of high-level political commitment for programme.
- Lack of strong Expanded Programme on Immunisation involvement.
- Poor coordination between health and school sectors for programmes using schools as a venue for delivery.
- Difficulty in estimating target population at the district level from national and international data sources.
- Underestimation of the power of negative media exposure and the influence of social media.

Delays in distribution of funds for project and programme planning and implementation, and challenges with securing financial resources for ongoing vaccine delivery.

Non-engagement or delayed engagement with local community leaders in social mobilisation efforts.

Lack of engagement of private schools early in the planning process to ensure good collaboration.

Limited planning for vaccine delivery to hard-to-reach populations, such as girls not attending school.

ACHIEVEMENTS

- Fifty-one demonstration projects and nine national programmes with data achieved more than 50% coverage, and coverage for fifty of these was 70% or greater.
- Initial evidence indicated that two-dose schedules achieved high coverage.
- Age-based eligibility facilitated enumeration and was easier to estimate uptake and coverage rates.

SUSTAINABILITY

- Recurrent financial delivery costs (excluding vaccines) ranged from US\$1.11 to US\$9.21 per dose, depending upon source of funding.
- Annualised start-up costs on average represented about 50% of all financial and economic costs.
- The cost of vaccines and delivery were critical for countries to estimate financial resources needed for sustainability.
- Funding uncertainties influenced country decisions to scale up HPV vaccine delivery nationally.

The value and pitfalls of HPV vaccination demonstration projects

The value and potential pitfalls of HPV vaccination demonstration projects include the following:

VALUE

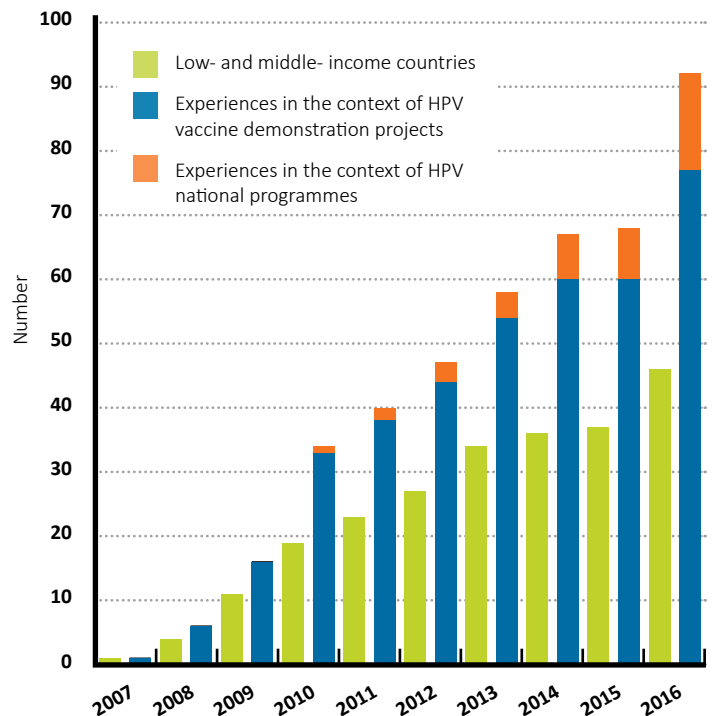
- Lessons learnt are consistent across nine years of demonstration projects.
- Projects provided valuable experience in planning and budgeting for school-based delivery, enumeration of girls, acceptable consent approaches, working with the ministry of education, developing community education materials and assessing readiness for national introduction.
- Few countries took advantage of the opportunity in demonstration projects to test different combinations of venues, timing, eligibility and co-delivery with other interventions.
- Selection process and small project size made some lessons learnt inapplicable to national rollout.
- Phased national rollout may provide the benefits of demonstration projects with the added advantage of maintaining political commitment to scale-up.

PITFALLS

- Poor coordination between the health and education sectors led to difficulties in engaging teachers and school delivery.
- Failure to correctly understand and implement eligibility criteria during enumeration and vaccine delivery resulted in difficulties with accurately estimating coverage.

Figure 1. Cumulative number of countries and experiences* with HPV vaccination

Low- and middle-income countries, January 2007–March 2016



*An HPV vaccine experience was defined by the specific target population and vaccination venue within a specific project/programme (defined by funding source). One country may have contributed multiple distinct experiences.

By the numbers

This brief summarizes a review of HPV vaccine delivery experiences comprising:

- 46** low- and middle-income countries
- 12** national introductions
- 66** demonstration projects or pilots
- 92** distinct experiences by countries
- 120** years of cumulative vaccination experience

- Lack of long-term planning for national introduction led countries to implement high-cost demonstration projects, which resulted in uncertainty about securing the financial resources necessary for scale-up.

Sufficient lessons have been learnt in order for countries to deliver HPV vaccine through phased national rollout rather than demonstration projects. Countries now know what factors lead to successful HPV vaccine delivery, yet challenges remain to secure the political will and financial resources necessary to scale up and implement successful national programmes. This will take the **political and financial commitment of governments, donors, and partners.**



Project methodology

The project team conducted a cross-sectional retrospective review of country experience with delivery of HPV vaccines. The 46 countries selected for data analysis (see map) included those that had completed at least six months of a demonstration project or national programme by the first quarter of 2016, low- or lower-middle-income countries that went straight to national introduction, and selected upper-middle-income countries that conducted a demonstration project or a unique vaccine delivery strategy (Figure 1).

Data collection approaches included a systematic review of published literature, review of unpublished literature and project reports, and key informant interviews. In total, data were extracted from 61 published articles, 11 conference abstracts, and 188 published and unpublished technical reports. To fill data gaps, the project team conducted key informant interviews with 56 project and programme implementers in 40 countries.

From February to May 2015 and April to May 2016, data were extracted using a standardised extraction matrix based on common elements to new vaccine introduction. Topics included national decision-making and planning, service delivery, health workforce, monitoring and evaluation, financial support and sustainability, and scale-up. These topics were further subdivided into 18 subcategories, with accompanying questions related to each.

Finally, the project team examined all qualitative data from the literature and interviews to produce aggregate topic summaries in cross-sectional thematic analyses. They analysed quantitative data (e.g., coverage and adverse events) descriptively to enable presentation of frequencies and proportions. Common reasons for acceptance and refusal were assessed across acceptability surveys using a scoring system. Data on social mobilisation activities were enumerated with coverage data and linked to acceptability data where possible.

This study was approved by the Ethics Committee of the London School of Hygiene & Tropical Medicine.

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The views expressed herein are solely those of the authors and do not necessarily reflect the views of PATH; the London School of Hygiene & Tropical Medicine; Axios International; Gavi, the Vaccine Alliance; or the Bill & Melinda Gates Foundation.

For more information: www.rho.org/HPVlessons

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