Summary of CDC Evaluation of National HPV Vaccine Introduction

LESSONS LEARNED IN DECISION-MAKING, PROGRAM IMPLEMENTATION AND COSTING IN ZIMBABWE, TANZANIA, AND SENEGAL

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Modular Summary of CDC Evaluation of National HPV Vaccine Introduction in Zimbabwe, Senegal, and Tanzania

This summary, when evaluated in consideration with expertise from the HPV Subteam, may be used to inform global guidance for countries planning to introduce HPV vaccine. Though the findings presented here apply only to Zimbabwe, Tanzania, and Senegal and are not meant to be generalized beyond these three countries, they may provide evidence for decision-making and planning in other settings. Summaries in this document provide descriptions conveyed by each country through key informant interviews and desk reviews of country-developed documents.

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EXECUTIVE SUMMARY

OVERVIEW & RATIONALE

The purpose of this project was to evaluate national HPV vaccine introduction in early-introducing, Gavi-eligible countries to capture the successes and challenges that arise with national introduction of HPV vaccine. This evaluation aimed to gain a better understanding of national introduction, program planning and implementation, communication, social mobilization and training, vaccine delivery, and financial implications for sustainability. The evaluation took place 2019–2020.

OBJECTIVES & METHODOLOGY

The evaluation consisted of three primary components:

Documentation of National Introduction (Case Studies)

- Documented all aspects of national HPV vaccine introduction through key-informant interviews and written document reviews.
- Compiled country-level HPV vaccine introduction tools, including vaccine introduction plans, training materials, social mobilization and communication tools, and other relevant guides and resources.

Programmatic Evaluation

- Evaluated knowledge, attitudes, perception, and feasibility of the HPV vaccination program among key stakeholders, including healthcare workers, school personnel, community/village health workers, and community leaders.

Economic Analysis (Zimbabwe and Senegal)

- Assessed cost of national introduction to a multi-age cohort and evaluated cost of annual dosing, efficacy of delivery strategies used, and success in reaching out-of-school girls.

COUNTRIES INCLUDED

Bivalent vaccine, annual dosing schedule, multi-age cohort (10-14-year olds) → routine grade-based cohort, primarily school-based campaign delivery

Zimbabwe
Introduced
May 2018

Quadrivalent vaccine, bi-annual dosing schedule, single (9 years) age cohort, routine health facility/outreach/school delivery

Senegal
Introduced
October 2018

Quadrivalent vaccine, bi-annual dosing schedule, single (14 years) age cohort, routine health facility/community/school/ mobile outreach delivery

Tanzania
Introduced
April 2018

OVERALL BEST PRACTICES

- Strong HPV vaccine introduction across all three countries, with high-level political engagement, knowledgeable health staff, and high vaccine demand in communities.
- Zimbabwe successfully delivered HPV vaccine to a multi-age cohort and instated a routine cohort, using a campaign delivery approach.
- Tanzania and Senegal successfully integrated HPV vaccine into their routine immunization delivery system by including schools in routine outreach.

OVERALL LESSONS LEARNED & CONSIDERATIONS FOR NATIONAL HPV VACCINE INTRODUCTION

HPV Program Decision-Making & Planning

- Countries need to be well informed of the vaccine supply landscape for planning purposes.
- High-level engagement and partnership between health and education sectors at all levels is critical for planning, social mobilization, and implementation.
- An average 12-month timeline for planning is needed for a successful HPV vaccine introduction.
- Comprehensive training that includes new target groups, (e.g., education sector, community leaders), social mobilization, and crisis management planning is necessary.

HPV Vaccine Implementation & Delivery

- School-based vaccination was effective at reaching the target age groups in these three countries; comprehensive strategies to reach out-of-school girls and tracking for the second dose of HPV vaccine are needed.
- Routine refresher training on key concepts and ongoing community sensitization beyond the first year of introduction is needed to sustain demand.
- Missed opportunities for vaccination occurred for multiple reasons: misunderstandings of target eligibility among health workers, lack of knowledge of HPV vaccination among girls and parents, and some vaccine hesitancy in the community.
- Programs should identify opportunities to reach special and hard-to-reach populations as well as strategies to ensure that immunocompromised and girls living with HIV receive 3 doses.

Integration & Sustainability

- Advocate for government commitment and multi-sectoral collaboration to ensure program sustainability.
- Consider lowering operational costs by spreading vaccination over a longer period (e.g., one month) when using campaign-style delivery.
- Consider reallocating district funds to account for increased outreach to schools for HPV vaccination.
- Develop strong school-age health platform, including integration with other health services.

TOPIC AREAS

This document captures and evaluates the experiences of Zimbabwe, Senegal, and Tanzania during HPV vaccine introduction. Six key topic areas are highlighted:

1. Delivery Strategy (campaign vs. routine)
2. Dosing schedule (annual vs. bi-annual)
3. Target population (age vs. grade based)
4. Single age cohort selection (9 years vs. 14 years)
5. Communication and social mobilization
6. Costing

This resource also includes programmatic overviews of HPV vaccine introduction in those countries and a summary of key economic findings. Taken as a whole, the information presented here can help other countries plan for HPV vaccine introduction.

HPV vaccine introduction materials and comprehensive country slide decks for all three countries

ZIMBABWE COUNTRY SNAPSHOT

CERVICAL CANCER BURDEN IN ZIMBABWE

Cervical cancer is the most frequent female cancer in Zimbabwe and the leading cause of mortality reported from all cancers in both sexes, with 3,043 new cases and 1,976 deaths estimated in 2020.[1] Local clinical practitioners also expressed evidence of high cervical cancer burden in Zimbabwe.

IMMUNIZATION IN ZIMBABWE

Immunization Data[2]	
Birth cohort (2019)	534,302
HPV target population (JRF, 2019)	756,836
World Bank Index, IDA (2015)	2.86
Gross Nation Income (per capita US$, 2015)	860
DTP3 Coverage (2018 Official Country Estimates)	89%

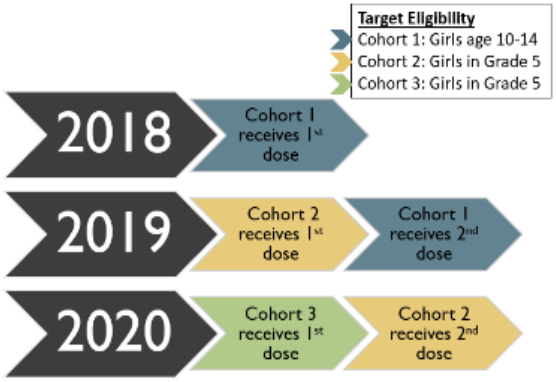
Girls receiving HPV vaccine, Zimbabwe

ZIMBABE HPV VACCINE DEMONSTRATION PROJECT

Zimbabwe conducted a successful HPV vaccine pilot program in 2014–2015 in the Beitbridge and Matabeleland districts, targeting approximately 4,500 girls each year.[3] Because school enrollment is high in both districts, a primarily school-based campaign was developed. Two cohorts of 10-year-old girls (both in- and out-of-school) were vaccinated, with a six-month interval between doses. The campaign achieved 88% coverage for both doses.[4]

ZIMBABWE HPV VACCINE NATIONAL INTRODUCTION

Following a successful demonstration project, Zimbabwe introduced HPV vaccine nationwide in 2018 through an annual (12-month dosing), school-based campaign (called “campaign delivery” in this document) to a multiple age cohort (MAC; girls aged 10–14) in the first year and to a single cohort (SAC; grade 5 girls in-school and age 10 girls out-of-school) in the second year. An overlapping delivery approach was used (the first-year cohort's second dose was delivered concurrently with the second-year cohort’s first dose). Vaccine was available at health facilities for one month after each campaign. The national HPV vaccine introduction achieved >82% first dose coverage according to a coverage survey implemented in three districts in 2019.



Zimbabwe Target Eligibility for in-school girls, Cohorts 1-3, 2018-2020

Click here for country-developed tools and resources and
Comprehensive slide deck on HPV vaccine national introduction

[1] 1. Zimbabwe Cancer Fact Sheet [Internet]. International Agency for Research on Cancer, World Health Organization; 2020 [cited 2021 Jan 15]. Available from: https://gco.iarc.fr/today/data/factsheets/populations/716-zimbabwe-fact-sheets.pdf

[2] Zimbabwe country information https://www.gavi.org/programmes-impact/country-hub/africa/zimbabwe

[3] Government of Zimbabwe. Application for Form for Country Proposals: Providing approximately two years of support for an HPV Demonstration Programme 2013.

[4] Zimbabwe HPV Demonstration Project Vaccination Coverage Survey Report (Unpublished).

SENEGAL COUNTRY SNAPSHOT

CERVICAL CANCER BURDEN IN SENEGAL

Cervical cancer is the leading cause of mortality from all cancers in Senegal, with 1,937 new cervical cancer cases and 1,312 cervical cancer deaths estimated in 2020.[5]

IMMUNIZATION IN SENEGAL

Immunization Data[6]	
Birth cohort (2019)	593,968
HPV target population (JRF, 2019)	204,239
World Bank Index, IDA (2015)	3.82
Gross Nation Income (per capita US$, 2015)	980
DTP3 Coverage (2018 Official Country Estimates)	81%

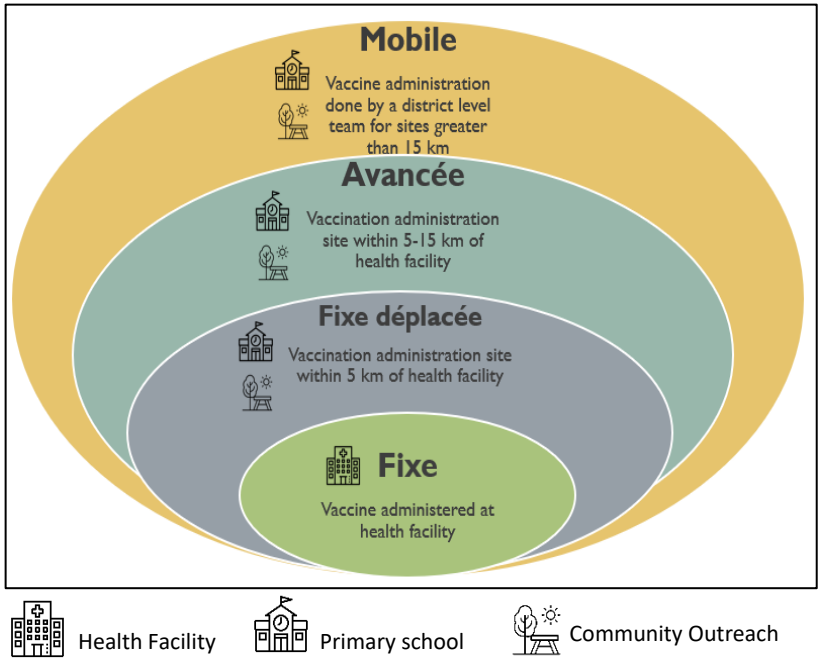
SENEGAL HPV VACCINE DEMONSTRATION PROJECT

Senegal conducted a successful HPV vaccine pilot program in 2014–2016. The school-based campaign vaccinated cohorts of 9-year-old girls in two districts, achieving over 90% administrative coverage in both cohorts.

SENEGAL HPV VACCINE INTRODUCTION

After the completion of the pilot program, Senegal launched a national HPV vaccination program in late 2018. HPV vaccination became available across Senegal to all 9-year-old girls as part of the routine national immunization program.

Senegal HPV vaccine delivery strategy



Senegal integrated HPV vaccine into the routine immunization delivery system (called "routine delivery" in this document). HPV vaccine is available throughout the year at health facilities (*fixe*) or through outreach at community locations and primary schools. Community and school outreach are organized by zones based on distance from the health facility: *fixe déplacée* (<5 km from the health facility), *avancée* (5-15 km from the health facility), and *mobile* (>15 km from the health facility). There is a minimum 6-month interval between the two doses.

Click here for country-developed tools and resources and Comprehensive slide deck on HPV vaccine national introduction

[5] International Agency for Research on Cancer. Zimbabwe cancer fact sheet. Glob Cancer Obs 2018. https://gco.iarc.fr/today/data/factsheets/populations/686-senegal-fact-sheets.pdf (accessed November 10, 2020).

[6] Senegal country information https://www.gavi.org/programmes-impact/country-hub/africa/senegal

TANZANIA COUNTRY SNAPSHOT

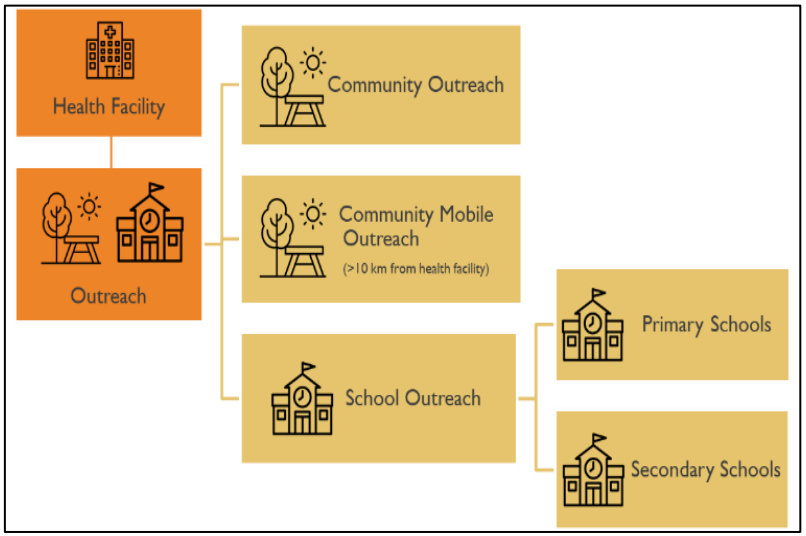
CERVICAL CANCER BURDEN IN TANZANIA

Cervical cancer is the leading cause of female cancer in Tanzania, with almost 10,241 new cervical cancer cases and 6,525 estimated deaths in 2020.[7,8]

IMMUNIZATION IN TANZANIA

Immunization Data[9]	
Birth cohort (2019)	2,225,339
HPV target population (JRF, 2019)	685,580
World Bank Index, IDA (2015)	3.67
Gross Nation Income (per capita US$, 2015)	920
DTP3 Coverage (2018 Official Country Estimates)	98%

Tanzania HPV vaccine delivery strategy



TANZANIA HPV VACCINE DEMONSTRATION PROJECT

With Gavi support, Tanzania introduced HPV vaccine in 2014 via a two-year pilot program in the Kilimanjaro region that targeted girls aged 9-years and older enrolled in Class 4 in school or aged 9-years out-of-school. Two doses of the quadrivalent HPV vaccine were administered six months apart. Kilimanjaro implemented a school-based campaign delivery strategy during the first year of the pilot followed by a routine delivery strategy in the second year, using both fixed (health facility) and outreach sites. Administrative coverage was 93% for both the first and the second doses of HPV vaccine during the first year of the pilot, then 89% for the first dose of HPV vaccine (HPV1) and 78% for the second dose of HPV vaccine (HPV2) during the second year.

TANZANIA HPV VACCINE INTRODUCTION

HPV vaccine was introduced into Tanzania's national immunization schedule in April 2018. Tanzania employs a routine immunization delivery strategy (called "routine delivery" in this document) to vaccinate 14-year-old girls on a two-dose, minimum six-month interval schedule. HPV vaccine is available at health facilities and through outreach services at community sites, community mobile sites (>10 km from the health facility), and primary and secondary schools. Administrative coverage of the first dose of HPV1 at the end of 2019 was 78% and administrative coverage of HPV2 was 49%.

Click here for country-developed tools and resources and Comprehensive slide deck on HPV vaccine national introduction

[7] Bruni L, Albero G, Serrano B, Mena M, Gomez D, Munoz J, et al. Human Papillomavirus and Related Diseases in Tanzania. Summary Report. 2018. http://www.hpvcentre.net/statistics/reports/TZA.pdf?t=1544735268334 (accessed 10 Dec 2018).

[8] Tanzania Cancer Fact Sheet [Internet]. [cited 2021 Feb 8]. Available from: https://gco.iarc.fr/today/data/factsheets/populations/834-tanzania-united-republic-of-fact-sheets.pdf

[9] Tanzania country information https://www.gavi.org/programmes-impact/country-hub/africa/tanzania-ur

DELIVERY STRATEGY: CAMPAIGN VS. ROUTINE

CAMPAIGN DELIVERY – ZIMBABWE EXAMPLE

In **Zimbabwe**, HPV vaccine is offered through a one-week school-based campaign followed by availability at health facilities for 1 month. Out-of-school girls are vaccinated at the nearest school, health facility, or community outreach location.

Decision-Making – Key Considerations

- High school enrollment reported in Ministry of Primary and Secondary Education (MoPSE) data sources.
    - 98% primary school enrollment – ability to reach many girls quickly in a school setting.
- Good support from MoPSE through demonstration project and interest in collaborating for national introduction.
- Launch of School Health Policy in 2016.
    - Policy in place and school health coordinators located in schools, but varied implementation of other integrated health interventions.

Best Practices

- Strong collaboration between health and education sectors.
- School-based campaign delivery strategy takes advantage of high enrollment of age-eligible girls, thereby reducing resources required to reach eligible girls.
    - School-based vaccine delivery was viewed positively: 100% of school health coordinators surveyed felt that HPV vaccine should be delivered in schools.

Lessons Learned

- Integration and coordination with schools is mandatory for increasing access to girls in schools.
- Need to plan for resource-intensity of the campaign delivery style (financial and human resources) and consider sustainability.
- Need a robust plan to ensure out-of-school girls are reached.

ROUTINE DELIVERY – TANZANIA AND SENEGAL EXAMPLE

In **Tanzania** and **Senegal**, HPV vaccine is offered at health facilities and through outreach. In Tanzania, outreach includes community, community mobile (>10 km from the health facility), and school (primary and secondary) outreach. In **Senegal**, outreach occurs in communities and schools in zones based on the distance from the health facility: *fixe déplacée* (<5 km from the health facility), *avancée* (5-15 km from the health facility), and *mobile* (>15 km from the health facility).

Decision-Making – Key Considerations

- Integration with already strong routine immunization delivery system would capitalize on current resources.
- Thought to be more sustainable than campaign delivery because an existing system is used.
- Prior experience utilizing routine delivery strategies for HPV vaccine during HPV vaccine pilot programs (Tanzania).

Best Practices

- Uses existing infrastructure of the routine immunization program for HPV vaccine delivery.
- Supports HPV vaccination program sustainability because HPV vaccine is embedded with other routine immunizations.

Lessons Learned

- Integrating HPV vaccine into the existing routine delivery strategy requires some adaptation.
    - Schools were frequently identified as an added outreach location specifically for HPV vaccine, underscoring the importance of schools to deliver HPV vaccine.
    - Account and plan for increased financial and human resource needs, particularly for additional outreach locations.
- Outreach sessions need to be well-planned and well-integrated into a health facility's workplan to ensure equity of HPV vaccine deliver

DOSING SCHEDULE: ANNUAL VS BI-ANNUAL (ROLLING 6–12 MONTH DOSING)

ANNUAL DOSING - ZIMBABWE EXAMPLE

In **Zimbabwe**, HPV vaccine is offered once a year (every 12-months) through a one-week school-based campaign followed by availability at health facilities for 1 month. Two cohorts are vaccinated each year, with the previous year's cohort receiving its second dose while the current year's cohort receives its first dose.

Decision-Making – Key Considerations

- Decision for annual dosing was based loosely on South Africa's HPV vaccine experience[10] and evidence from the demonstration project costing study showing that it was cheaper to vaccinate girls at once.[11]
- The approach was considered easier to implement, based on health worker resources and requiring only one school visit per year.

Best Practices

- Strong collaboration between health and education sectors.
- About two-thirds of health workers felt that they had enough staff to carry out vaccination activities in school and to maintain routine immunization activities in health facilities during the last campaign.

Lessons Learned

- Minimal funds budgeted for the 2019 campaign led to limited training, reduced staff, logistical challenges, and inadequate resource. mobilization for needs (campaigns can be resource- and workload-intensive).
- Need for clear and concise policies, continued training, and social mobilization activities to ensure continuity of activities.

10. Delany-Moretlwe S, Kelley KF, James S, Scorgie F, Subedar H, Dlamini NR, et al. Human Papillomavirus Vaccine Introduction in South Africa: Implementation Lessons from an Evaluation of the National School-Based Vaccination Campaign. Glob Health Sci Pract 2018;6:425–38. https://doi.org/10.9745/GHSP-D-18-00090.
11. Hidle A, Gwati G, Abimbola T, Pallas SW, Hyde T, Petu A, et al. Cost of a human papillomavirus vaccination project, Zimbabwe. Bull World Health Organ 2018;96:834–42. https://doi.org/10.2471/BLT.18.211904.

BI-ANNUAL (ROLLING 6-12 MONTH DOSING) – TANZANIA EXAMPLE

In **Tanzania**, HPV vaccine is offered continuously through health facilities and outreach in community, community mobile (>10 km from the health facility), and school (primary and secondary) outreach. Age-eligible girls can receive the second dose of HPV vaccine any time from 6–12 months after receiving the first dose.

Decision-Making – Key Considerations

- Compatible with school calendar – 6-month minimum dosing schedule allows two-dose delivery within a single school year.
- Considered to be critical because many 14-year old girls are in the last year of primary school, after which they transition to secondary school or discontinue schooling.

Best Practices

- Series spans a single school year, supporting girls to receive both doses of vaccine within the school year.
- Allows additional time (up to 12 months) for girls to receive the second dose of HPV vaccine at health facilities or through outreach.

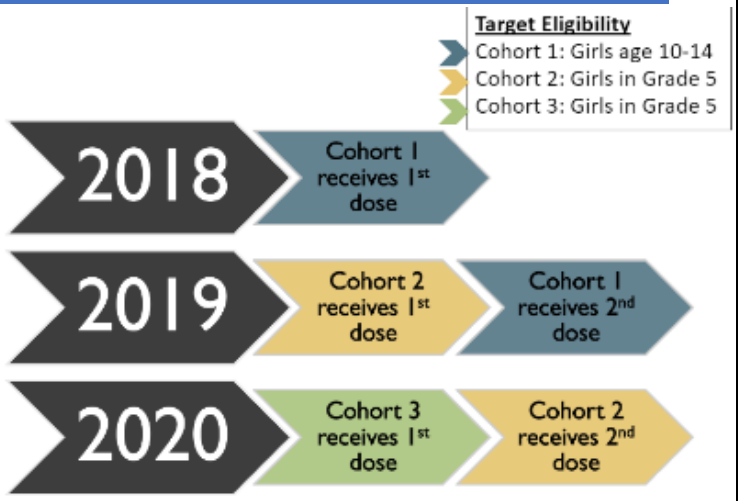
Lessons Learned

- Tracking girls for the second dose is challenging with this strategy because they can receive it any time 6–12 months after the first; health workers require additional training and support in how to track girls and coverage.
- It is critical to empower girls and community stakeholders with information on timing and location for receiving the 2nd dose of the HPV vaccine, as they may move schools or may no longer be enrolled/attending school.

TARGET POPULATION: AGE VS GRADE BASED

TRANSITION FROM AGE- TO GRADE-BASED ELIGIBILITY – ZIMBABWE EXAMPLE

HPV vaccine was introduced nationwide in **Zimbabwe** in 2018 through a 1-week school-based campaign to a multiple age cohort (MAC; all girls 10–14 years old), followed in 2019 by a single cohort (SAC; grade 5 girls in school and age 10 girls out-of-school). During the 2019 campaign, the MAC's second dose was delivered concurrently with the SAC's first dose. Zimbabwe's experience identifying eligible girls by both age and grade offers useful insights for HPV vaccine introduction planning.

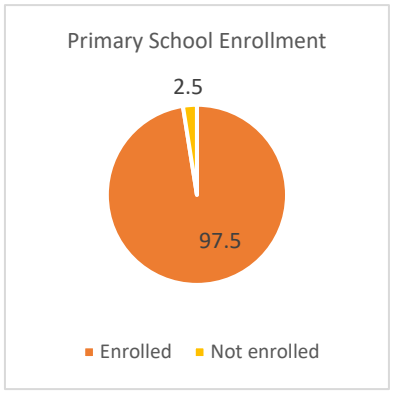


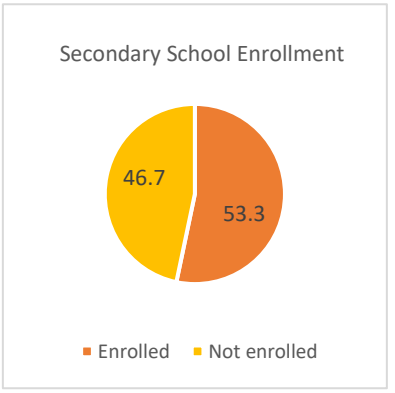
Decision-Making – Key Considerations

- A MAC in the first year of introduction provided an opportunity to reach as many girls as possible; adequate vaccine supply was available (Cervarix).
- Grade 5 routine cohort followed; a large proportion of girls in grade 5 are 10 years old (Ministry of Primary and Secondary Education data) and there was a desire to maintain consistency with the 10-year-old cohort targeted in the demonstration project.
- A single-grade target group provided simplicity in identifying and vaccinating eligible girls in the routine cohort.

Best Practices

- Eligible girls were identified by a variety of methods: current age documented on school records, birth year, or reported age.
- Eligibility for age-based MAC (girls aged 10–14 years) was well understood when HPV vaccine was introduced for cohort 1 (2018 campaign).
- A broad catch-up strategy allowed girls who were missed in 2018 (but fell within the initial MAC) to be vaccinated in 2019, including out-of-school girls.
- Girls were rarely turned away from vaccination unless they had contraindications to vaccination or fell outside the initial MAC eligibility group.





Lessons Learned

- Understanding eligibility is critical.
- The shift from age-based to grade-based eligibility was not well understood by health workers, school health coordinators, village health workers, or community leader respondents.
- While a grade-based cohort was easy to identify in a school-based campaign, record-keeping and coverage monitoring proved more difficult because these practices more frequently capture data by age.
- Clear guidance (training, IEC materials, other channels) regarding eligibility is needed for all stakeholders.

SINGLE-AGE COHORT (SAC) SELECTION IN SUPPLY CONSTRAINED SETTINGS: 9 YEARS VS 14 YEARS

9-YEAR-OLD GIRLS, SINGLE-AGE COHORT – SENEGAL

Limited HPV vaccine supply compelled **Senegal** to choose a single-age cohort (SAC) of 9-year-old girls for vaccination. Senegal expects to receive enough vaccine to vaccinate a multiple age cohort (MAC; -14-year-old girls) in coming years; the size of the MAC would be reduced each year that vaccination is delayed because some age-eligible girls will have already been reached through SAC vaccination. Following the MAC vaccination, Senegal will resume targeting 9-year-old girls for routine vaccination.

Decision-Making – Key Considerations

- Age group to achieve highest coverage based on delivery strategy:
  - 90% primary school enrollment (UNESCO, 2017)
  - 47% secondary school enrollment (UNESCO, 2017)

Best Practices

- The SAC of 9-year-old girls was chosen with input from and in collaboration with the Ministry of Education.
- SAC target age group is the same as the routine target age group following the MAC.

Lessons Learned

- School outreach only needed at primary schools (9-year-old girls found only in primary schools).
- Support from the Ministry of Education was critical to educate and inform 9-year-old in-school girls and their parents.
- Beneficial to maintain the same routine age cohort before and after the MAC to maintain program consistency for health workers and community members.

14-YEAR-OLD GIRLS, SINGLE-AGE COHORT – TANZANIA

Limited HPV vaccine supply compelled **Tanzania** to choose a single-age cohort (SAC) of 14-year-old girls for vaccination. Tanzania expects to receive vaccine adequate to vaccinate a multiple age cohort (MAC; 9-14-year-old girls) in coming years. Following the MAC vaccination, Tanzania will establish 9-year-old girls as the routine target age group.

Decision-Making – Key Considerations

- High burden of cervical cancer in Tanzania
- Did not want to miss girls who later would not be age eligible (≥15 years old) based on WHO recommendations.
- High primary and secondary school enrollment (14-year-olds span both).

Best practices

- Given vaccine supply constraints at the time of introduction, Tanzania selected a SAC at the upper end of the WHO recommended age range so that girls in this age group could receive HPV vaccine before aging out of the recommended eligibility bracket.

Lessons Learned

- Challenges sustaining high coverage among this target group; anticipated receiving sufficient vaccine supply for the MAC sooner.
- Outreach to both primary and secondary schools is needed because 14-year-old girls are found in both, requiring more resources (human and financial) than expected.
- Larger percentages of out-of-school girls than expected; only primary school is mandatory in Tanzania.
- Tanzania's HPV vaccination program has been vaccinating 14-year-old girls since 2018 and changing the routine target population to 9-year-old girls could require additional health worker education and community social mobilization efforts.

COMMUNICATION AND SOCIAL MOBILIZATION: ADDRESSING VACCINE HESITANCY AND RUMORS

VACCINE ACCEPTANCE

Overall, HPV vaccine was well accepted among all key stakeholder groups in **Zimbabwe**, **Tanzania**, and **Senegal** (Figure 1). Although HPV vaccine was widely accepted, there were still instances of hesitancy and misinformation in all three countries.

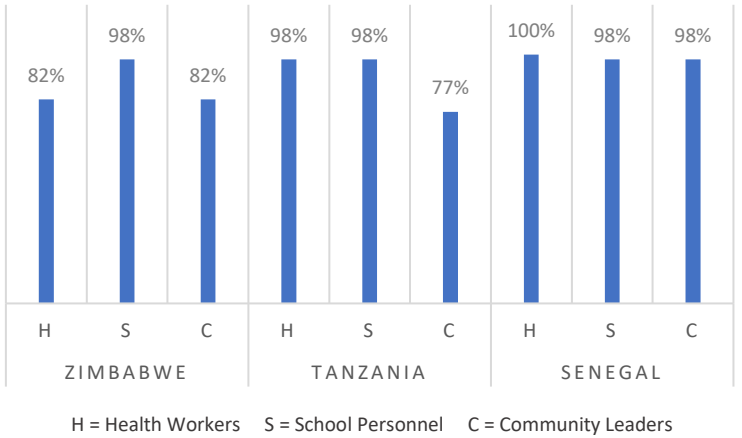


Figure 1. HPV vaccine acceptance among key stakeholder groups in Zimbabwe, Tanzania, and Senegal

VACCINE HESITANCY, RUMORS, AND MITIGATION STRATEGIES – COUNTRY EXPERIENCES

Zimbabwe

Vaccine Hesitancy & Rumors

- Vaccine hesitancy was found among some religious groups in **Zimbabwe**.
- Key rumors reported by respondents include that HPV vaccine will affect a girl's fertility and that HPV vaccine is not safe, is experimental, or will cause side effects.
- Overall, rumors were not found to have significant impact on uptake of HPV vaccine.

Mitigation Strategies

- Continued widespread social mobilization efforts with focus on girls as well as messaging through health workers, teachers, and community members helped to maintain high coverage.

HPV vaccination poster, Tanzania

TANZANIA

Vaccine Hesitancy & Rumors

- In **Tanzania**, one religious radio station aired programming at the start of the national introduction stating that HPV vaccine causes infertility, and similar rumors of infertility circulated in a region on Tanzania's southern border.
- Post-introduction, rumors about effects on girls' fertility and that the vaccine causes cervical cancer have circulated in small areas; however, these rumors were not found to be a large issue nationwide.

Mitigation Strategies

- Health communication specialists mitigated HPV vaccine introduction rumors by implementing their crisis communication plan (developed during planning for introduction) and speaking to the public over the radio.
- Since introduction, Tanzania has addressed rumors through their communication plan and community re-sensitization efforts (supplementary orientations, media advocacy, etc.).

SENEGAL

Vaccine Hesitancy & Rumors

- **Senegal** experienced a series of rumors near the start of HPV vaccine introduction; these were exacerbated by health worker strikes (2017–2018).
    - Rumors circulated on social media (Facebook and WhatsApp) claiming that the government wanted to sterilize and kill young girls.
    - Rumors drove down demand for HPV vaccine significantly.

HPV vaccination launch event, Senegal

Mitigation Strategies

- A committee was formed to handle the crisis, with Ministry of Health and Social Action spokespersons to share key messages. Other activities included:
    - Updating an existing cervical cancer informational video to include information on HPV vaccine.
    - Regularly providing clear, consistent key messages through multiple channels rather than responding to rumors individually.
    - Academics and experts providing key messages about HPV vaccine in Wolof.
    - Taking an approach of "Ask the questions, we'll resolve them together."
    - Creating a crisis communication plan to respond to future rumors.
    - Strengthening AEFI (Adverse Event Following Immunization) surveillance and establishing a committee for causality assessments.

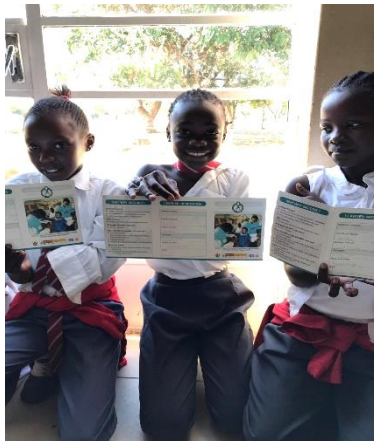
LESSONS LEARNED

Pre-Introduction

- Begin planning and developing social mobilization materials well in advance of HPV vaccine introduction.
- Develop communications and crisis communications plans even in areas that have not experienced problems in the past and do not expect vaccine hesitancy to be a concern.
- Ensure an adequate supply of print materials for all key stakeholder groups and distribute early.

Post-Introduction

- Continuous, targeted social mobilization for HPV vaccine, including engagement of community members, is mandatory for the continued success of the program, particularly around the second dose.
- Implement the communication and crisis communication plans that were developed prior to introduction.
- Redistribute communications and social mobilization materials as needed.
- Leverage and involve experts and community members to mitigate rumors.
- Develop and provide additional tools and materials targeted toward key issues as they become known (e.g., rumors around fertility and vaccine safety).



Girls showing vaccination cards after receiving HPV vaccine, Zimbabwe

ADDITIONAL RESOURCES

Country-developed tools and resources

- Zimbabwe, Senegal, Tanzania

Comprehensive slide decks on HPV vaccine national introduction

- Zimbabwe, Senegal, Tanzania

Manuscripts (manuscripts under review – links to be added when available)

Programmatic Decision-making

- *Nationwide introduction of HPV vaccine in Zimbabwe 2018-2019: Experiences with multiple cohort vaccination delivery*
- *National HPV vaccine introduction in Senegal – Successes, challenges and lessons learnt*
- *National introduction of human papillomavirus (HPV) vaccine in Tanzania: programmatic decision-making and implementation*
- *Impact of the human papillomavirus (HPV) vaccine supply shortage on Tanzania's national HPV vaccine introduction*

Program feasibility & Vaccine acceptability

- *Multiple cohort HPV vaccination in Zimbabwe 2018-2019: program feasibility, awareness and acceptability among health, education, and community stakeholders*
- *Feasibility and acceptability of HPV vaccine introduction in Senegal: Results from community-level cross-sectional surveys*
- *Tanzania's human papillomavirus (HPV) vaccination program: community awareness, feasibility, and acceptability of a national HPV vaccination program, 2019*

Vaccination coverage

- *HPV vaccination coverage in three districts in Zimbabwe following national introduction of 0, 12-month schedule among 10-14-year-old girls*

Costs of HPV vaccine introduction

- *Cost of HPV vaccine service delivery in multi-age cohort, school-based vaccination program: Zimbabwe*
- *Cost of HPV vaccine introduction in routine vaccination program for 9-year-old girls: Senegal*

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