HPV VACCINATION IN MALAWI:

Lessons Learned from JSI's Experience Supporting Vaccine Introduction and Routinization



BACKGROUND

Malawi has one of the highest age-standardized incidence rates of cervical cancer in the world, with it accounting for 45 percent of all cancers in the country (Arbyn et al. 2020; Malawi Ministry of Health 2020). To prevent human papillomavirus (HPV) infection and, therefore, cervical cancer, the Government of Malawi implemented an HPV vaccine demonstration pilot in 2012–2015. The pilot took place in two districts— Rumphi and Zomba—and achieved a coverage rate of 90 percent.

Following the successful demonstration pilot, the Ministry of Health (MoH), in collaboration with the Ministry of Education, Science, and Technology (MoEST) and other partners, introduced the HPV vaccine into the national routine immunization schedule in January 2019. Malawi adopted a blended strategy to vaccinate a single-age cohort of 9-year-old girls with the HPV vaccine: A school health platform was used to deliver both the first and second doses to girls in school, and static and outreach clinics were used to reach girls who were not in school.

In the first two years, the HPV vaccine was delivered using a campaign approach. Vaccination of 9-year-old girls took place in January 2019, with follow-up activities implemented in February and March 2019 to reach the cohort. A subsequent campaign was held in January 2020. Thus, girls receiving their first dose in January 2019 received their second dose in January 2020. Also in January 2020, a first dose was given to the next cohort of girls who had turned 9 years old. Follow-up activities were again implemented in February and March 2020.

In February 2021, Malawi changed its strategy to deliver the HPV vaccine to all girls once they turn 9 years old through the routine immunization system year round—at static and outreach clinics and periodically in schools—instead of through yearly campaigns in January. Girls who received their first dose in the January 2020 campaign began receiving their second dose through the routine immunization system in 2021. Figure 1 illustrates the evolution of the HPV vaccine introduction in Malawi.

JSI Research & Training Institute, Inc. (JSI), with funding from Gavi, the Vaccine Alliance, provided technical support to the MoH for the HPV vaccine introduction in 2019–2021.¹ The key areas of JSI's technical support are illustrated in Box 1.

JSI's Key Areas of Technical Support





To learn more about our work supporting HPV vaccine introduction and routinization in Malawi, visit: <u>https://www.jsi.com/global-human-papillomavirus-vaccine-introduction/</u>.

Figure 1. Timeline of the HPV vaccine introduction in Malawi (2012-current)



PLANNING FOR HPV VACCINE INTRODUCTION

JSI supported Malawi's Expanded Program on Immunization (EPI) to develop an HPV vaccination introduction plan and corresponding timeline for implementation in 2019. The introduction plan outlined activities, quantity of supplies, and budgets required. Although all planned activities were ultimately conducted, delayed funding, competing priorities in the EPI, and changes to funding commitments affected the planning and implementation of activities. JSI also supported the EPI in planning for the 2020 round of vaccinations and in revising the service delivery approach from a campaign approach to incorporation in the routine immunization system.

Key considerations for other countries: Effective planning for HPV vaccine introduction is important to its overall success. Introduction plans and timelines should build in buffers for potential delays in activity implementation—due to resource constraints or other unexpected events—to prevent significant delays in the HPV vaccine introduction timeline. Country EPIs should also consider what activities will be necessary for continuing success of the HPV vaccination program beyond initial introduction. Sustained resource mobilization, particularly for activities related to capacity building and communication, is important to plan for in the introduction and long term.

Routinizing the HPV Vaccine

Initially, Malawi planned to introduce the HPV vaccine to a multi-age cohort (MAC) of girls ages 9–14. Due to a global shortage of the HPV vaccine, the government decided to vaccinate a single-age cohort of 9-year-old girls using a blended approach in a campaign mode. In 2021, Malawi shifted from a campaign delivery strategy to a routine delivery strategy due to the high cost of campaigns. The routine approach delivers HPV vaccines quarterly in schools and routinely through static and outreach clinics.

Although the shift in delivery strategy was planned to begin as of February 2021, most districts were not prepared for the change. Delayed implementation of preparatory activities, combined with inadequate funding for training and the shift in strategy, led to delayed routinization in some districts. These delays led to a rise in misconceptions about the HPV vaccine and fertility, negatively impacting demand. Additionally, challenges presented by the COVID-19 pandemic and vaccine rollout, a teacher strike, and associated school closures affected the EPI's ability to conduct mobile vaccinations. Even when schools reopened, the teacher strike prevented the EPI from using schools as a vaccination or advocacy platform.

Risk communication—which entailed engaging parents one on one and sharing messages on the HPV vaccination's role in preventing cervical cancer—helped increase acceptance of the vaccine despite the challenges that arose. By July 2021, 27 of Malawi's 29 districts had started delivering the HPV vaccine through the routine immunization system, and the frequency of vaccination and community engagement sessions had increased.

ENGAGING TRADITIONAL AND NON-TRADITIONAL IMMUNIZATION PARTNERS

The MoH and MoEST collaborated with local and international partners, including JSI, to conduct stakeholder workshops across health and nonhealth sectors—including education, cervical cancer, non-communicable diseases, and the media—to build consensus around the HPV vaccine introduction strategy. Consensus helped mobilize partner support for the blended strategy and helped mobilize participation in planning and implementing preparatory and introductory activities. Cross-collaboration between the MoH and MoEST and collaboration with their Directorates and local and international partners ensured that activities were conducted for the initial introduction and subsequently.

Partnership with the MoEST and teachers was critical to the successful vaccine introduction and continues to be vital to the program's sustainability. The MoH's Reproductive Health Department is now working with the EPI on revising the national cervical cancer strategy. Additionally, JSI is working with the MoH to facilitate more purposeful linkages with cancer, adolescent, and gender programs to consider activities that require sustained resources to ensure the HPV vaccine program continues to reach more girls.

Key considerations for other countries: As noted by Hannah Hausi, JSI Senior Immunization Technical Officer, "the EPI and technical partners cannot work alone" to successfully introduce the HPV vaccine (Hausi and Nicks 2021). Collaboration with both traditional and non-traditional immunization partners can help provide access to networks and communities that can support the program.

However, countries should also be aware of the intricacies of coordination with partners such as the education sector. For example, the education sector can help conduct vaccination activities, such as outreaches in school, if the activities do not disrupt class and exam schedules and if contingency plans are in place for vaccination during school closures (e.g., during a health emergency such as the COVID-19 pandemic or during teacher strikes, which are common in Malawi). Engagement with these partners can help the country EPI leverage existing platforms to integrate key HPV messaging and training.

Finally, EPIs need to consider their long-term strategies as they plan to introduce the HPV vaccine. This will help EPIs not only identify partners and resources that can support the program beyond introduction, but also gain early buy-in for changes to the vaccine delivery strategy, such as Malawi's shifting from campaigns to routine delivery.

MAPPING ELIGIBLE GIRLS FOR VACCINATION

To identify eligible girls in Malawi, Health Surveillance Assistants (HSAs) and School Health and Nutrition (SHN) teachers worked with village heads and head teachers to map and register girls for HPV vaccination. Using school registers, they reached out to girls and their parents to conduct the mapping exercise. However, after engaging the

Box 2.

The Value of Multi-Partner Strategies

HPV vaccination targets pre-adolescent and adolescent girls, a population with whom many EPIs have not previously engaged. Building partnerships across multiple stakeholders, including with nontraditional EPI stakeholders, provides opportunities to develop innovative strategies and to access existing platforms that can better identify and reach girls with the HPV vaccine.

In Malawi, the MoH collaborated with the MoEST and international partners and consulted civil society organizations, private sector stakeholders, and other HPV stakeholders to develop the vaccine introduction strategy. Additionally, the MoH established a National Task Force (NTF) and District Task Forces (DTFs) composed of representatives from partners in different areas, including education, cervical cancer, and non-communicable diseases, to support planning and implementation of the HPV vaccine.



National Statistical Office (NSO) to better understand the target population, the EPI found a significant difference between NSO's projected population and the number of girls registered through the mapping exercise. Due to this discrepancy, JSI led a mapping verification process to assess the eligibility of the registered girls for HPV vaccination (see Box 3).

Key considerations for other countries: Identifying eligible girls for HPV vaccination requires the use of multiple data sources. National statistical offices can be excellent sources of information to project the target population for vaccination at the national and district levels. Also, in addition to school registers, parents can be a source of information on DOB that may be more accurate than the school registers. Data from all sources should be collected early enough to allow time for verification before vaccination begins.

STRENGTHENING THE CAPACITY OF HEALTH WORKERS AND TEACHERS

Malawi's successful introduction of the HPV vaccine relied upon effective training of health workers, teachers, and volunteers. Training was particularly important because HPV was a new vaccine being introduced to a new cohort with a service delivery strategy that required the education sector's involvement. JSI, in collaboration with partners, supported the development of training materials on HPV infection and cervical cancer; the HPV vaccine's characteristics; vaccine eligibility; vaccine administration; microplanning; monitoring for HPV vaccination; communicating about the HPV vaccine; and supportive supervision.

Prior to the 2019 introduction, JSI and partners supported the EPI to train 290 district trainers in HPV vaccination, including in the topics mentioned above, and then supervised trainings conducted by the district trainers for health workers and teachers. The initial HPV introduction plan was to train 14,000 health workers and 12,130 teachers. However, due to resource constraints prior to the introduction, only 7,601 health workers (including HSAs, Environmental Health officers, clinicians, and nurses) and 6,536 teachers (including SHN teachers, head teachers, and Primary Education Advisors) were trained, for a total of 14,137 trained.

Malawi faced several resource-related challenges while training health workers and teachers during the 2019 and 2020 campaigns, including inadequate funding to train all health workers and teachers and to print an adequate amount of training materials. Delayed funding also resulted in delayed implementation of district-level preparatory and introductory activities and delayed payment to district trainees.

To overcome funding constraints, the EPI adopted some alternative training measures in preparation for routinizing the HPV vaccine. The EPI sent a memo to inform health workers and other staff about the change in vaccine delivery strategy, held a virtual briefing, and optimized the existing national EPI WhatsApp group. HPV materials were incorporated into COVID-19 training to leverage financial resources. Following the

Box 3.

Age Verification

JSI, with the help of other partners, sampled a portion of registered girls in Malawi to confirm their eligibility for HPV vaccination. Data collectors asked individual girls in schools for their date of birth (DOB) or visited girls' homes to ask parents for their daughter's DOB. This enabled the EPI to verify girls' DOB, compare it to the information in the school register, and confirm eligibility to receive the vaccine. Using a mapping verification tool, JSI found that only 55 percent of the registered girls were within the 9-year-old eligible age for HPV vaccination.

To remedy this with future cohorts, the verification exercise became part of the registration process in the 2020 vaccination campaign and will continue to be conducted as part of routine vaccine delivery.

change in vaccine delivery strategy in February 2021, JSI conducted supportive supervision in 20 districts to supplement the virtual training as the districts began to routinize the vaccine.

Key considerations for other countries: Country EPIs must adequately budget for HPV vaccination training and continuous capacity building and consider alternative ways to train health workers and teachers in the event of unexpected challenges. The EPI must be prepared for health workers and educators to transition in and out of their roles, requiring capacity building of new staff. This preparation can help to prevent delays in vaccination and enable quicker transitions to different service delivery strategies.

Virtual webinars, pre-recorded videos, and other platforms could be used as alternatives to in-person training to ensure that training is ongoing and can continue despite resource constraints or other unexpected disruptions, such as school closures or health emergencies. Information about HPV vaccinations can also be incorporated into other existing training opportunities, which may have more dedicated funding.

CREATING DEMAND FOR THE HPV VACCINE

Activities to generate demand for the HPV vaccine must be implemented extensively prior to vaccine introduction. The MoH, in collaboration with partners, developed a communication strategy to establish HPV vaccination as a health care-seeking norm, and to drive advocacy and social mobilization activities to create demand for the vaccine. The EPI engaged mass media to increase public knowledge of the vaccine. For HSAs and teachers, radio programs were designed to strengthen their capacity to communicate about the vaccine and effectively answer community members' questions. The EPI also held several advocacy sessions with national and local leaders to raise awareness about the HPV vaccine and the connection between HPV and cervical cancer.

Community engagement was critical to the HPV vaccine introduction. HSAs actively engaged girls, their families, and communities to dispel rumors about HPV vaccination, such as misconceptions about the vaccine's effect on reproductive health, and to share information about how the vaccine can prevent cervical cancer. HSAs utilized community meetings, Parent Teacher Association meetings, mother support groups, and other public forums to provide information about both the vaccine and its delivery strategy to communities. Additionally, the EPI provided HPV vaccination orientation to drama groups so they could perform plays in their communities to share information about and create demand for the HPV vaccine.

While these communication activities were successful in generating demand for the HPV vaccine, particularly during the 2019 campaign, the COVID-19 pandemic created multiple communication challenges. School closures related to COVID-19 made it difficult to communicate with girls. Delays in communicating about the COVID-19 vaccine contributed to misconceptions about that vaccine and the belief that multiple health interventions, including HPV vaccination, were related to COVID-19 vaccination. However, communities with high levels of community engagement and collaboration with teachers and other partners had less confusion about the two vaccines and greater acceptance of the HPV vaccine.

Key considerations for other countries: The girls receiving the HPV vaccine should be centered in all messages and communication products and should be actively engaged in the development of communications strategies and products. Country EPIs should engage with other partners, such as those working in adolescent health or cervical cancer programs, to help develop and integrate key messages within their existing programs and to enable these partners to advocate for HPV vaccination among their clients and stakeholders.

Communication about the HPV vaccine must be consistent across partners and frequent; communication should occur at least two to three months before the vaccine is introduced and should continue beyond introduction. Moreover, communication campaigns must be designed to reach communities; country EPIs should ensure that messages are shared not only on national but also local platforms (such as local radio stations).

MONITORING OF HPV VACCINATION

JSI played a significant role in monitoring HPV vaccination. For example, following both HPV vaccination campaigns in January 2019 and January 2020, the JSI team provided post-introduction supportive supervision at district health offices, health facilities, and schools in February and March of 2019 and 2020. JSI visited 10 districts to monitor: vaccine coverage, the recording of doses, vaccine usage, collaboration, and the implementation of social mobilization activities. JSI then shared this information with the MoH and partners and followed up with districts that were not reporting data to the EPI via district coordinators in the first two rounds of HPV vaccination. (With routinization, data are reported through the District Vaccination Data Management Tool, which is used routinely for immunization data.)

Box 4.

Community Engagement for Designing Communication Strategies

HPV vaccine communication strategies must engage girls in content creation and center girls in any messaging. In Malawi, communication products were developed in consultation with 9-year-old girls and pre-tested among them to ensure their relevance and acceptability. The EPI and partners created posters to display in schools, as well as fliers, leaflets, and public banners. Girl Effect²—an organization that creates different media for girls on health, nutrition, education, and other topics—included HPV as a topic in Zathu, a magazine that promotes adolescent health, to encourage girls to take the HPV vaccine, and developed drama and talk show radio programs to provide information about the vaccine.

To learn more about Girl Effect's work in Malawi, visit <u>https://global.girleffect.org/where-we-work/africa/malawi/</u>.





Following HPV vaccine routinization, JSI conducted supportive supervision visits in 20 districts to ensure that district coordinators were up to date on the change in delivery strategy. Given that formal, in-person training on HPV routinization was not possible due to lack of funding, these visits were particularly important to understand if districts had started vaccinating girls through the routine system and to address any challenges. During these visits, JSI found that health facilities had several challenges to overcome. For example, only 15 percent of health facilities incorporated the HPV vaccine into their completed 2021 microplans, and most health facilities did not have monitoring charts or identification (ID) cards. As a result, JSI was able to provide the EPI with several recommendations to overcome these challenges, such as using health passports in the absence of ID cards.

The lessons learned from these supportive supervision visits also informed JSI's recommendations for a sustainable HPV vaccination program, which were incorporated into the revised EPI 2022–2027 Comprehensive Multi-Year Plan that will be developed later in the year. **Key considerations for other countries:** Routine monitoring of HPV vaccination during and following introduction helps ensure that vaccination is occurring and is an opportunity to identify and solve challenges and share lessons learned across health facilities, districts, and provinces. Country EPIs should provide sufficient resources for consistent meetings at sub-national levels with health workers and other relevant professionals to guide them on improving HPV vaccine implementation and/or routinization activities and facilitate peer-topeer exchange. Using platforms such as WhatsApp at the national and sub-national levels can also help to overcome challenges by enabling peers to offer solutions and share best practices.

Routine monitoring and supportive supervision can also help strengthen the capacity of health workers to effectively communicate about HPV vaccination. In the context of the COVID-19 pandemic, the EPI can utilize supportive supervision visits to encourage health workers to leverage the ongoing COVID-19 vaccine rollout as an opportunity to build awareness on HPV vaccination.

VACCINATION COVERAGE AND RECOMMENDATIONS FOR THE MALAWI HPV VACCINE PROGRAM

Malawi's 2019 HPV vaccination campaign vaccinated 231,802 girls with their first dose, achieving 83 percent coverage of the NSO target and 66 percent of the mapping exercise target. In the 2020 campaign, 224,839 girls received their first dose, which achieved 78 percent coverage of the NSO target and 85 percent of the mapping exercise target. For the second dose, delivered in 2020 to girls who received their first dose in 2019, vaccination coverage was 73 percent of the NSO target and 79 percent of the mapping target (see Table 1).³

Based on administrative data from February to April 2021, routine delivery of the HPV vaccine reached 7 percent of girls with dose 1 and 9 percent of girls with dose 2. Lower coverage rates resulted from delayed routinization in districts (see case study of routinization on page 6) and challenges presented by both the COVID-19 pandemic and teacher strikes. The coverage rate is expected to increase, as almost all districts (as of July 2021) are delivering the HPV vaccine routinely and vaccination sessions have increased.

Table 1. HPV Vaccination Coverage in 2019 and 2020 by NSO and Mapping Targets, 2019-2020

1st Cohort of 9 year old girls							2nd cohort of 9 year old girls		
HPV 1_2019			HPV 2_2020				HPV 1_2020		
Girls vaccinated	Coverage (NSO target)	Coverage (Mapping target)	Girls vaccinated	Coverage (NSO target)	Coverage (Mapping target)	Drop-out rate	Girls vaccinated	Coverage (NSO target)	Coverage (Mapping target)
231,802	83%	66%	204,111	73%	79%	13%	224,839	78%	85%

³ Data were collected immediately after the campaigns and are documented in: Malawi Ministry of Health. 2020. "HPV Vaccine Roll out in Malawi: Technical Report and Lessons Learnt." Unpublished document.

As Malawi continues to promote routine HPV vaccination and transition to its new service delivery strategy, JSI has identified several lessons learned and recommendations:



The identification of 9-year-old girls requires multiple data sources as well as eligibility verification. Malawi can continue to use the NSO for target population estimates while also conducting the mapping verification exercise. The verification activities should be conducted regularly and early on in the budgeting and vaccine procurement process.

Malawi's MoH has successfully collaborated with the MoEST and leveraged schools and teachers for HPV vaccination and advocacy. While this partnership is vital to maintain and foster, the EPI should expand partnership and continuously engage adolescent health programs, cervical cancer screening and treatment programs, and other preventive health care programs to integrate HPV vaccination services, messages, and advocacy across the health system. This engagement could support the continuation of vaccination during school closures and also expand vaccine coverage.

Training for health workers and teachers must occur prior to vaccination, be aligned with the routine service delivery strategy, and be adequately funded long term. Funding constraints and challenges posed by the COVID-19 pandemic demonstrated the need for alternative and blended capacity-building methods. The EPI should consider developing training videos that can be used for HPV vaccination and shared with partners. Additionally, the EPI should leverage the resources of other health programs to integrate HPV vaccine training and strengthen the capacity of stakeholders across the health system to communicate about and potentially deliver the HPV vaccine.

Community engagement, advocacy, and social mobilization activities must be well resourced and occur frequently. The girls receiving the vaccine should be centered in existing and new messaging.

The EPI should work with partners, including those active with adolescents, to design a strategy to monitor the use of communications products and evaluate the effectiveness of the communications strategy.

The EPI should strengthen its communication mechanisms to be prepared for potential interruptions in vaccination or events that may create confusion about vaccination. While challenges such as teacher strikes and school closures often arise unexpectedly, the EPI can plan for such events. Health workers should be notified as soon as a challenge arises that would prevent vaccination from taking place in schools so they can communicate more proactively and effectively with clients and communities. Communication must be targeted to girls, their families, and communities so that they know where they can receive the vaccine when disruptions occur.

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