

What can research evidence tell us about:

Considerations for Improving HPV Vaccination Uptake among Adolescent girls in Mukono district

Key messages

- ➔ Majority of parents believe the HPV vaccine is good for the health of their children as it confers protection to children against cervical cancer.
- ➔ Despite the appreciation; there are multiple factors that can HPV vaccine uptake including: the choice of vaccine delivery strategy, fear of side effects, ignoring authority of parents over their children, poor record keeping and lack of information in the community and poor communication strategies which allow for misinformation.
- ➔ Poor uptake of the HPV vaccine is not determined by acceptance but by awareness of the vaccination program.
- ➔ Major steps to improve vaccine uptake might include comprehensive sensitization of stakeholders about the HPV vaccination program, requiring HPV vaccination as a pre-requisite to attend school at certain level and reverting to the group-based strategy of vaccine delivery.

Where did this Rapid Response come from?

This document was created in response to a specific question from a policymaker in Uganda in 2021. It was prepared by the Center for Rapid Evidence Synthesis (ACRES), at the Uganda country node of the Regional East African Community Health (REACH) Policy Initiative.

+ Included:

- **Key findings** from research
- **Considerations about the relevance** of this research for health system decisions in Uganda

✗ Not included:

- Recommendations
- Detailed descriptions



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Summary

Background:

Uganda's Mukono district is grappling with a persistently suboptimal coverage of the second dose of HPV vaccination among 10-year-old school girls. While they are not sure about what exactly to attribute this low uptake to, the Mukono district health authorities asked ACRES to summarize and provide evidence about how they can improve uptake of the second dose of HPV vaccine among 10 years girls in schools in Mukono district.

Rapid Response Question:

How can uptake of HPV Vaccine be improved among 10-year-old girls in Mukono district?

Findings:

To know how to improve uptake of the HPV vaccine, we need to first understand why some adolescents do and other do not take the vaccine.

Causes of low HPV vaccine uptake

1. Choice of delivery strategy
2. Fear of side effects
3. Inadquate parental involmnet
4. Poor record keeping
5. Ignoring private schools and parental consent
6. change of school
7. Lack of information about HPV in the community
8. Vaccine hesitancy

To improve HPV vaccine uptake, these strategies are suggested:

1. Awareness and sensitization – different groups of people should be sensitized in order to create a positive mindset and attitude towards HPV vaccination
2. Making HPV vaccination mandatory – this would mean that all children of a certain age or group are required by law or policy to be vaccinated against HPV in order for them to attend school
3. Proper documentation and follow-up – maintain proper records of all who have taken the vaccine and when they would need to take the follow-up jab in a proper register, and follow them up actively for follow up jabs.
4. Change of the delivery strategy – it might be considered to revert to the group-based strategy that has been shown to deliver better coverage results

Conclusions:

Low uptake of HPV might be a consequence of a multiplicity determinants and so, interventions to improve uptake should look to solve multiple issues. Uptake challenges of follow-up doses might be consequences of inadequacies in process of giving the first dose and so, focus should not only be on the second dose but rather, on the whole cascade.

Background

Cervical cancer is caused by the Human Papilloma Virus (HPV). It is the fourth most common cancer globally, with 85% of the burden in developing countries. In Uganda, there has been a consistent 1.8% increase in the rates of cervical cancer in Uganda per annum over the two decades. Availability of the HPV vaccine presents a golden opportunity to prevent cervical cancer. The World Health Organization (WHO) recommends that the HPV vaccine is given to girls from 9 to 14 years of age before their sexual debut.

Mukono district is grappling with a challenge of low coverage of the HPV vaccine. The District reports a coverage of approximately 70% for the first dose of the vaccine followed with a significant drop to 27% for the second dose. This is pausing a major challenge to the control and prevention of cervical cancer in the district.

Mukono district Local Government has used a group-based strategy where learners in grade four of primary level education (Primary Four) were the target of the vaccination program. It was assumed that learners in this class were aged 10 years and had not had their sexual debut. However, during implementation, it was observed that quite a number of learners aged 10 were missed because they were in lower or higher classes and quite a number of learners who were above 10 years of age were receiving the vaccine. The Mukono district administration opted for the alternative strategy, age-based vaccination. Following adoption of the age-based strategy, there has been a prominent difference between in coverage of the first (70%) and second (27%) doses of the HPV vaccine. While they are not sure about what exactly to attribute this difference to, a member of the Mukono District Health Team (DHT) asked ACRES for evidence on how to improve uptake of the second dose of HPV vaccine among 10 years girls in schools. However, basing on the evidence around HPV vaccine uptake and coverage, we thought it is prudent to provide evidence that considers the whole cascade of HPV vaccine administration and we answered the question stated below.

Rapid Response Question: *How can uptake of HPV Vaccine be improved among 10-year-old girls in Mukono district in Uganda?*

Summary of findings

The evidence provided here is not limited to the HPV vaccine but to vaccines that have multiple doses and are targeting similar populations. The evidence doesn't speak directly to uptake of the second dose of the HPV vaccine, but to general vaccine uptake that includes first dose and follow-up doses of vaccines among adolescents. This evidence should be considered in context and reflect on what is or not currently done in Mukono district.

First off, it is important to note that majority of people believe vaccines are good for the health of their children. In Uganda, Peru, India and Vietnam, majority of the parents who had their children vaccinated for HPV during the pilot stages of the HPV Vaccination programs in the respective countries stated that they believe the vaccine is good for the health of their children as it protects them from getting cervical cancer. It is also equally important to know that there are dissenting voices to the vaccination program. If not addressed, these dissenting voices can affect vaccine coverage, unduly influencing other parents who would have taken their children for vaccination [1].

How this Rapid Response was prepared

After clarifying the question being asked, we searched for systematic reviews, local or national evidence from Uganda, and other relevant research. The methods used by the SURE Rapid Response Service to find, select and assess research evidence are described here:

www.evipnet.org/sure/rr/methods

To decipher how to improve uptake of the HPV vaccine, we need to first understand why some adolescents do and other do not take the vaccine. This would then guide the options for addressing the identified barriers to low vaccine coverage. Below is a schematic showing causes of and possible solutions for addressing low uptake of the HPV vaccine.

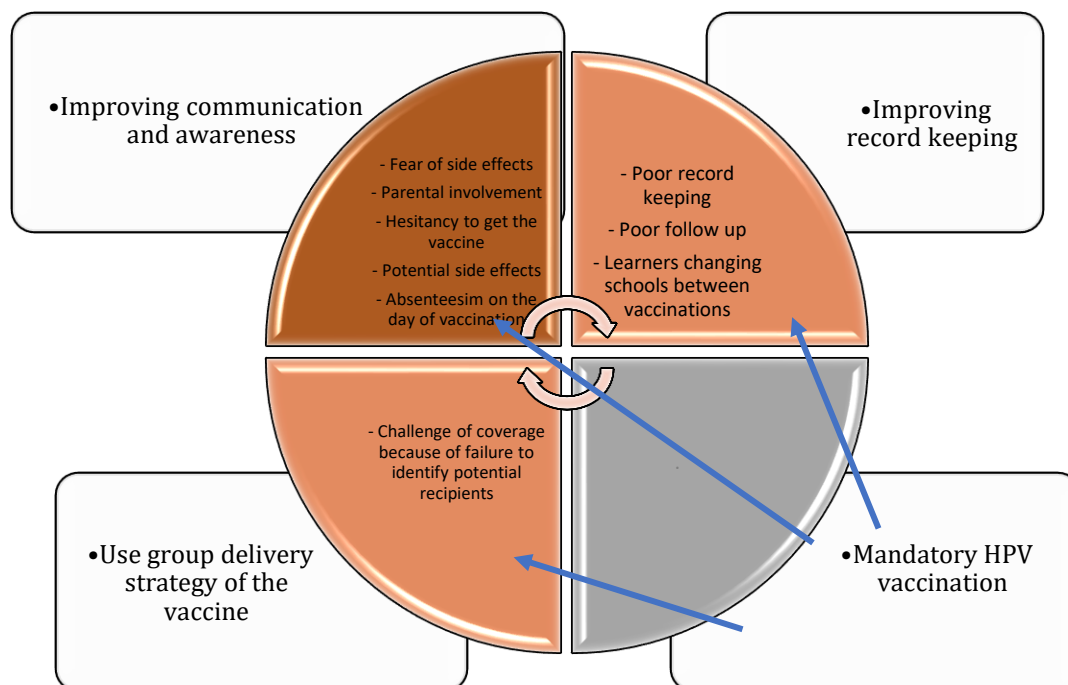


Figure 1: A schematic showing causes of and possible solutions for addressing low uptake of the HPV vaccine

Determinants of Low Uptake of the HPV Vaccine

In this section, we provide evidence on the possible causes of low uptake of the HPV vaccine.

1. Choice of Delivery strategy

There are basically two delivery strategies, that is, group-based and age-based strategies with modifications according to the context within which they are applied. The group-based strategy targets people who are classed together, for example, children in the same class in a school. The age-based strategy targets people of a certain age, for example, girls aged 10 years [1]. Strategies might be modified according to the context within which they are being applied. For example, the vaccine might be fused into other vaccination programs or it might be an independent school-based, et cetera. Studies show that among all strategies tested in Uganda, Peru, Viet Nam and India, all program variants whose foundation is the group-based strategy resulted in better coverage as compared to those program variants whose foundation is the age-based strategy.

2. Fear of side effects

All medication, including vaccines have side effects which might be real or perceived and communicated by people with or without authority. Some parents and children have fears for potential side effects that might as a result of receiving the vaccine such as infertility, early

menopause and cancers. This has greatly affected the uptake of the vaccine in some populations [2-4].

3. Parental involvement

Ignoring parents/guardians in the vaccination process causes a lot of resistance to vaccine uptake. Parents/guardians including fathers/male guardians have a lot of influence in decision-making about girls (not) taking the HPV vaccine [2, 5]. Parents have raised concern about not being well involved in the vaccination program, and so end up shielding their children from receiving the vaccine or not encouraging their children to get vaccinated [5]. It was reported in Kenya that women were facing disapproval from the fathers of the children at first dose and follow-up doses simply because fathers were ignored during the stakeholder engagement process [2].

4. Poor record keeping

This can be a major problem. Vaccines that have follow up doses require proper record keeping for adequate follow up. Records should capture information such as who, where and when an individual received the vaccine and when they are expected to receive their next jab [5]. Poor record keeping negatively affects follow up of individuals and consequently, the number receiving follow up doses.

5. Ignoring Private schools and Parental Consent

Some private schools are not given the HPV vaccines. This creates inequity in access to vaccination for those girls in private schools. Key personnel in district health offices cite the fact that private schools do not report to them, that is why they are not given the vaccine. Other offers cite the fact that if the vaccine is given to private schools, it would require parental consent to administer the vaccine to the girls, yet in public schools, the heads of schools provide consent at institutional level which eliminates the need for parental consent [4]. This practice of administering the vaccine without parental consent might be the reason as to why learners don't turn up for the second dose and parents might feel that their authority over their children has been overrun by not consenting them. It might as well raise suspicion about what the motive of the vaccination is. This might as well mean that absenteeism on school vaccination days is intentional so that children don't receive follow up doses.

6. Change of school

There is a challenge of girls changing schools before they complete the vaccination schedule and so tracing them to receive the second dose is hectic [6].

7. Lack of information among the populace

People are not informed enough about cervical cancer. It is possible that people don't know the burden of cervical cancer, how it affects people and how many lives it claims. The target population and their parents not being extensively informed about vaccine affects vaccine uptake means they don't understand the importance of taking the vaccine. Some scholars suggest that not knowing about possible side effects and where to report in case they develop one, number of doses and intervals at which they are supposed to receive them also affects uptake of the vaccine [4]. Some sources actually state that poor HPV vaccine uptake is not determined by acceptance of the vaccine but by awareness of the vaccination program [2].

8. Vaccine hesitancy

Vaccine hesitancy is a historical challenge worldwide and can be traced back to the very first vaccine to be developed [7]. However, with the emergency of new and widespread digital communication technologies, there is rapid dissemination of anti-vaccination sentiments which include concerns

about vaccine safety, doubts over whether vaccines work or not and conspiracy theories [7]. In Uganda, in 2018, false information made rounds on social media alleging that the HPV vaccine is dangerous to the health of young girls and that it causes cancer, hormonal imbalance and early menopause [8]. Despite scientific evidence disputing these allegations, the rapid spread and persistence of these anti-vaccination allegations and beliefs has created massive public distrust and loss of confidence in vaccines, consequently affecting coverage of vaccination programs [7].

9. Inadequate communication

To get adequate buy-in, cooperation and build trust in the community, there is need for communication from the authorised institutions and persons to the community. A break in communication significantly affects the immunisation program with the community view the intervention with suspicion.

In Uganda in 2018, in a bid to clear the air about false information that was making rounds on social media about the purported dangers of the HPV vaccine, the Ministry of Health (MoH) released a statement reassuring the public about the safety of the HPV vaccine. In the same statement, the MoH also mentioned that the cause of cervical cancer is unknown, yet the HPV vaccine is advertised as a magic bullet that protects girls from cervical cancer [8]. Such ambiguous statements throw more doubt on the purpose of the vaccination drive and they leave people wondering why they should take the vaccine.

Other reasons for not taking the vaccine include: fear of injections, absenteeism on the day of vaccination, doubting efficacy of the vaccine and inconsistent supply of vaccines [4].

Possible ways of Improving HPV Vaccine Uptake

Most of the causes of low coverage of HPV vaccine are related to poor communication and awareness of the importance of the vaccine, existence of side effects, the vaccination programs and parental involvement and consent. Addressing the challenge of poor communication and awareness can go a long way in addressing low coverage, but it on its own is not sufficient to achieve maximum coverage. Interventions with the largest positive effect are those that: 1) directly target unvaccinated or under vaccinated populations; 2) aim to increase knowledge and awareness surrounding vaccination; 3) improve convenience and access to vaccination; 4) target specific populations; 5) mandate vaccinations or impose some type of sanction for non-vaccination; 5) employ reminder and follow-up; and 6) engage influential leaders to promote vaccination in the community [9]. In contexts where there are multiple determinants of vaccine uptake at play, no one intervention should be used in isolation. Multiple interventions should be applied to tackle each particular issue [9].

It is important to restate that parents are willing and want their children vaccinated against HPV because of its perceived importance. The low uptake of the HPV vaccine is not a question of acceptance of the vaccine but rather an awareness and communication challenge. Improving uptake of the second dose might be a bit of work if the inadequacies in the process of giving the first dose are not dealt with. In otherwards, low uptake of the second dose might be a reflection of the inadequacies of the first dose process and so, the whole cascade should be treated as a single event. Below are some of the strategies that might be used to improve uptake:

1. Awareness and sensitisation

The target community deserves to know the burden of cervical cancer, how it affects victims and how many lives it claims. Through health education and sensitisation, parents (including fathers), teachers, eligible adolescents and the general community should be sensitized and made aware of

what it means to have cervical cancer, the risk they are exposed to and the importance of taking the HPV vaccine in its full schedule. The community should be reassured about the safety and effectiveness of the vaccine. Also, a clear explanation about possible side effects and chances of developing them should be given so that they don't get caught unawares. They should also be made aware of where to report and get help when they develop the side effects. Efforts should be made to ensure that a positive attitude and mindset towards HPV vaccination are cultivated among parents, teachers and the children [4, 6, 10].

When using the school-based strategy, like in Mukono istrict, teachers at schools should be sensitised about the importance, safety and effectiveness of the vaccine. This is because they have prominent influence in moulding health behaviour and perception of learners especially adolescents and so their (teachers) perception and mindset about the HPV vaccine can influence acceptance and accessibility of the HPV vaccine by learners [11]. All communications should be clear and might be better received when they are recorded by influential figures like religious leaders [9].

2. Proper documentation

It is important to maintain proper records of all who have taken the vaccine and when they would need to take the follow-up jab in a proper register. Children should then be actively followed-up to ensure that they take the second follow-up jab on time as suggested in the register [5]. In the same spirit, every child should have a vaccination card stating their vaccination status, whether they completed the vaccination schedule or not, or when they should be receiving the follow-up dose [12].

3. Making HPV vaccination mandatory

Many scholars believe that this strategy might be a magic bullet to solve the persistently suboptimal coverage of HPV vaccination. It would mean that all children of a certain age or group are required by law or policy to be vaccinated against HPV in order for them to attend school [11, 13, 14]. There might be a worry of parents having stigma towards giving HPV vaccination to their children as they might relate HPV vaccination to giving their children a go ahead to engage in sex but this should be ably resolved with proper awareness and sensitisation [13]. In some localities, requiring some vaccinations including HPV to attend school has increased coverage of those vaccines by over 20 percentage points although in some jurisdictions making HPV a requirement for school didn't bring about bigger change, this might be attributed to stigma by parents specifically towards the HPV vaccine [14, 15]. Requiring HPV Vaccination for school attendance might however present policymakers with a dilemma that rests at the intersection of policy, right to autonomy on the side of those receiving the vaccine and public health matters [16].

4. Change of delivery strategy

One of the strategies that might be considered is adopting a group-based strategy for the delivery of the vaccine. Health authorities might consider selecting a school class or classes within which adolescents of a certain age expected to be. This group-based strategy has delivered excellent coverage results in different countries, including Uganda, compared to age-based compatriot. It is easier to identify eligible recipients for the first and follow-up doses, causes minimal disruptions to school programs and healthcare services [1, 17].

Conclusion

Low uptake of HPV might be a consequence of a multiplicity of determinants, and so, interventions to improve uptake should look to solve multiple issues. Uptake challenges of follow-up doses might be consequences of inadequacies in giving the first dose, and so, the focus should not only be on the second dose but rather on the whole cascade.

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What is a Rapid Response?

Rapid Responses address the needs of policymakers and managers for research evidence that has been appraised and contextualised in a matter of hours or days, if it is going to be of value to them. The Responses address questions about arrangements for organising, financing and governing health systems, and strategies for implementing changes.

What is ACRES?

ACRES – The Center for Rapid Evidence Synthesis (ACRES) is a center of excellence at Makerere University- in delivering timely evidence, building capacity and improving the understanding the effective, efficient and sustainable use of the rapid evidence syntheses for policy making in Africa. ACRES builds on and supports the Evidence-Informed Policy Network (**EVIPNet**) in Africa and the Regional East African Community Health (**REACH**) Policy Initiative (see back page). ACRES is funded by the Hewlett and Flora foundation. <http://bit.do/eNQG6>

ACRES' collaborators:



Regional East African Community Health Policy Initiative



EVIPnet

Glossary

of terms used in this report:

www.evipnet.org/sure/rr/glossary

17. Mugisha, E., et al., *Feasibility of delivering HPV vaccine to girls aged 10 to 15 years in Uganda*. Afr Health Sci, 2015. **15**(1): p. 33-41.

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Conflicts of interest

None known.

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