HPV vaccine acceptability

Vaccine acceptability was assessed differently depending on the target group (policymakers, health workers, parents, eligible girls). Key research questions for the policymaker group were designed to understand the decision-making process of government at all levels toward integrating a new vaccine into a national health program. Health workers and teachers were asked if it is feasible and acceptable to include HPV vaccine in the health and education systems. For parents and girls, the study explored the reasons for vaccine acceptability, as well as the decision-making process for vaccination.

Reasons for vaccine acceptance: parents' and girls' perspectives

Three main reasons for vaccine acceptance were reported: risk perception and/or vaccine-related reasons, trust in government programs, and economic benefits (free vaccination).

Perception of risk and/or vaccine-related reasons

Perception of the risk of vaccination may positively or negatively influence vaccine acceptance (whether a girl is vaccinated). If people view the risk of getting a vaccine-preventable disease as important, it is more likely that they will have their child vaccinated. Findings from both the midterm and final household surveys confirmed this tendency. In the midterm survey, 79.0% of parents gave one of following reasons for having had a daughter vaccinated: "Believe that vaccine is good for health"; "Want the girl to be protected from cervical cancer or infection"; "Believe that prevention is good." In the final survey, the number was 90.7%. Although parents were unclear about the link between the HPV infection and cervical cancer, the majority understood that cancer is a deadly disease.

Trust in government programs

The EPI system in Vietnam has a strong history, with nearly 30 years of recognized performance. This has contributed significantly to a reduction in the burden of vaccine-preventable diseases. It has also fostered a positive attitude in the population toward vaccination, building trust with the community by demonstrating the effectiveness of vaccination and prevention of disease through vaccines. In our research, participants implicitly viewed vaccination as a government-funded program and specifically referred to the EPI program. In general, they believed in these programs, since there exists in Vietnam a common perception that the "government cannot harm people's health," as heard from one participant from Thanh Hoa. If a program is believed to be government funded, it is more likely to garner community support.

Economic benefits

Although responses from parents and girls in all project sites mentioned free vaccines as one of the reasons for vaccination acceptance, there was slightly more focus on economic benefits in Nong Cong district in Thanh Hoa province. The responses also indicated that within the context of poverty in rural areas, the freely delivered HPV vaccine helped to increase the acceptability of the vaccine:

"For those who are living in the rural area like us, we are still very poor. When we were told that vaccination helped women to prevent diseases, we found that it was really helpful. In fact, in the rural area, we cannot afford to take a child or a family member to the hospital for health care services. So when we heard that information on the loudspeaker and even on television, we found it did bring benefits, and we took the girls to get vaccination."

-Focus group discussion, parents of fully vaccinated girls, Trung Chinh, Nong Cong, Thanh Hoa

However, in the larger picture of vaccine acceptance, economic benefits were not key factors. Formative research in Vietnam found that even when people must pay for a vaccine, they are willing to get vaccinated as long as the price is affordable. Additionally, findings from our midterm and final surveys indicated that only a small proportion of respondents mentioned "free vaccine" as their reason for acceptance (11.4% in the midterm survey and 13.7% in the final survey).

Peer pressure and girls' perspective

Other reasons for vaccination were mentioned, such as not witnessing adverse events with vaccinated girls in the first round. Parents' decisions to have their girls vaccinated may also have been influenced by other people, such as health workers, teachers, or neighbors. For eligible girls, according to focus group discussions and interviews across geographic regions, there was little variation in reasons for vaccine acceptance. Most stated that the recognized effectiveness of the HPV vaccine in preventing cervical cancer were key factors in vaccine acceptance. This pattern was seen across all groups of girls. Other reasons for vaccine acceptance that were mentioned included: the vaccines were free of charge and eligible girls were unlikely to have a similar chance to access free HPV vaccine.

Reasons for vaccine acceptance: community leaders', health workers', and teachers' perspectives

Community leaders declared their support during project implementation, which was considered by researchers as an indicator of vaccine acceptance. In general, at the commune level, an executive committee, including the commune health center as a permanent member, coordinated project activities. Leaders of the commune People's Committees directed the operation of the executive committees, which were comprised of members from various sectors, such as education and Women's Unions. This mechanism ensured that project activities were conducted smoothly. Group leaders highlighted HPV vaccination as a crucial component in improving women's health. They also actively participated in community mobilization and vaccination days, including delivering speeches prior to vaccination sessions. These activities enhanced perception and acceptability of HPV vaccine in the communities and with leaders in other communes.

Health workers at all levels demonstrated their acceptance of the vaccine by their continuous participation in project activities, including not only vaccinating, but also planning, training, and communicating. Commune health workers' perspectives are less likely to have an impact on health policy at the national level; however, their work can be used as a foundation for changes at a higher level. They played a very important role in creating the list of eligible girls and organizing and performing vaccinations. Similar to the community leaders, health workers emphasized the importance of the vaccine in preventing cervical cancer. Despite the increased workload of health workers due to the project, they were able to perform their regular work as well.

Teachers* also demonstrated their enthusiasm for vaccination and were effective collaborators with the health sector in a number of ways. They understood the role of HPV vaccination in improving girls' health, and were able to enrich their knowledge and communication skills through project activities. In general, the HPV program was well received in schools, with active participation by teachers in making the lists of eligible girls and organizing meetings with parents. These actions were clear indicators of their acceptance of the HPV vaccination effort.

* In the project sites, school staff involved in the project were either health officers or teachers in biology. For the purpose of this document, they are referred to as teachers.

Fully vaccinated girls during a focus group discussion in midterm evaluation.

Reasons for non-acceptance

Non-acceptance refers to vaccine refusal or failure to complete the three doses, which happened for several reasons. Although the coverage surveys showed a high vaccine coverage in both strategies, some parents hesitated to have their daughters vaccinated. In the midterm coverage survey, 17.0% of girls in strategy A and 6.1% in strategy B refused full vaccination; however, this was reduced to low levels in the final evaluation—3.9% and 1.4% for strategies A and B, respectively. Ninh Kieu district had the highest number of girls whose parents refused vaccination. Similar patterns for non-acceptance of vaccination (vaccine refusal and failure to complete the series) were found in the qualitative research and surveys, highlighting the following key factors:

- Vaccine-related reasons include concern about side effects, safety, effectiveness, potential effect on girls' health and fertility, and the fact that the vaccine is new. Findings showed that fear of vaccine-related side effects constituted one of the major reasons for HPV vaccine refusal. Side effects in this case may include unexpected impact on girls' health and fertility, as well as worries about the safety of a new vaccine.
- The evaluation also revealed that mothers' suspicion/misinformation/misconceptions led to refusal of vaccination. This behavior generally derived from their misconception or suspicion of the program. For example, in Thanh Hoa, people were proud of their participation in the project; while in Can Tho, respondents indicated their suspicion about the quality of a free vaccine when in fact it is very expensive.

- Participants also emphasized duration of HPV vaccine protection and the appropriate age for HPV vaccination as important reasons for refusal. They believed that HPV vaccine is effective for only five years and then requires additional doses. Based on this misinformation, they believed it was unnecessary to administer HPV vaccine at an early age (e.g., 11 years old), and that it would be better to wait until girls were older (i.e., high school age), closer to the time when they start their sexual life.
- Inaccessibility of vaccination sites for participants was another reason for non-acceptance. In Thanh Hoa, most parents of non- or partially vaccinated girls expressed their willingness to join the program; however, they were not able to make it due to unexpected circumstances (e.g., a health problem on vaccination day, which prevented them from visiting the vaccination site). Additionally, some girls were absent or no longer lived in the project areas by the time of vaccination day.

Community sensitization and mobilization

Program implementation

IEC activities were implemented to increase knowledge among local communities and to mobilize community support. The messages were delivered before and during HPV vaccination sessions through a wide range of communication channels, including mass media, group meetings and discussions, direct communication by communicators, counseling, school and health facility events, and leaflets. Table 4 presents information on communication channels and message content used in the project.

Table 4. Forms and content of IEC in the HPV vaccine demonstration project in Vietnam from 2008 to 2010

Communication forms	Communication content
Indirect communication using local radio, billboards, posters, and leaflets. Direct communication in schools, including talk shows, meetings with targeted girls, and meetings with parents. Direct communication in the community, including home visits. Communication campaign prior to vaccination sessions. Counseling in schools and commune health stations.	Basic knowledge of cervical cancer. Causes of cervical cancer and the relationship between HPV and cervical cancer. Specific and non-specific preventive measures. HPV vaccines, including features, vaccination schedule, vaccination targets, and potential side effects.

The communications team developed and distributed more than 20,000 IEC materials on cervical cancer, HPV, and prevention through vaccination, including leaflets for parents and girls, communication booklets, question and answer booklets, billboards, posters, and banners. Communicators, teachers, and commune health workers were trained on communication skills. The project regularly broadcast messages through the loudspeaker system before and during vaccination days. Additionally, teachers, health workers, and communicators organized many meetings with parents and girls at schools and in villages. Staff from IEC centers (at the national and provincial levels) and district PMCs conducted hundreds of supportive supervision visits for IEC activities in all communes to provide timely modifications.

Information received

Communication activities included both direct and mass communication. Findings from the final evaluation showed that most participants confirmed their exposure to at least one

of the project's communication activities. In strategy A, the participants were exposed to the following forms of communication: leaflets (75.8%), posters (81.8%), banners (73.3%), loudspeaker announcements (65.5%), commune health workers (63.9%), and teachers (80.7%). For strategy B, the pattern was similar; however, the frequency was higher than in strategy A: leaflets (83.6%), posters (87.2%), banners (85.4%), loudspeaker announcements (87.2%), commune health workers (70.8%), and teachers (66.8%).

From the focus group discussions, findings showed that girls received consistent key messages on HPV vaccine. Girls in all regions knew that vaccination helps to prevent cervical cancer. However, girls in rural regions (Nong Cong district) and mountainous regions (Quan Hoa district) knew more about the vaccination program, including topics such as eating well before vaccination, the vaccination schedule, eligible groups, and side effects of the vaccine. Parents received different information than girls, and this information varied by geographic area. Parents in the mountainous and rural regions received consistent information, which was mainly related to eligible age, preparation before/after vaccination, and price of the vaccine in the market. Parents in the urban regions received similarly consistent information about the project as those in the mountainous and rural areas. However, there were more frequent reports of rumors, circulated by newspaper articles and internet sources, related to vaccine side effects, effectiveness and cost of the vaccine in the private market.

Key messages and preferred communication channels

Although comprehensive information on the program and HPV vaccine was provided to communities, when asked about it during various focus group discussions, people listed only the information they could remember and what they were most concerned about. In making a decision, people rely on select information that is judged to be important to them. Identifying key points in communication messages and suitable communication channels to convey those messages would help to enhance vaccine acceptability. Table 5 presents the key communication messages retained by participants across geographic regions. Based on observations from FGDs, people in urban regions tend to collect more information prior to decision-making than those in rural and mountainous regions, which highlights the need to tailor communication channels to suit each region.

Table 5. Key messages for target groups

	Mountainous	Rural	Urban
Fully vaccinated girls	Number of doses. Effect of vaccine. Side effects. Preparation before vaccination. Cervical cancer in Vietnam.	Vaccination schedule and targeted groups. Number of doses. Preparation before and after vaccination. Cervical cancer in Vietnam.	Effect of vaccine. Cervical cancer in Vietnam.
Parents of fully vaccinated girls	Free vaccine. Preparation before and after vaccination. Targeted groups. Number of doses.	Free vaccine. Targeted groups. Effect of vaccine. Preparation before vaccination.	Implementers. Expert advice. Dealing with rumors. Other project activities. Effect of vaccine. Side effects.

In the qualitative study, participants were asked to list the most important messages to them that they received from IEC activities under project. Most girls said the most important information to them was related to HPV vaccine and cervical cancer. Girls in mountainous regions mentioned a detailed list of key messages, including pre- and post-vaccination activities, time between doses, etc. Meanwhile, girls in rural and urban regions listed general information such as cervical cancer and vaccination.

Regarding the most helpful channel, quantitative data showed that the parents' choices were clustered around four channels: commune health workers (28.7%), teachers (19.1%), loudspeaker announcements (17.0%), and leaflets (12.3%). However, from qualitative data, people in Can Tho city preferred "official" communication channels, like television, while Thanh Hoa province preferred local communication channels, direct communication, or communication with visual aids.

Remaining concerns about HPV vaccine

During focus group discussions and interviews in both the midterm and final evaluations, parents in all three regions were most interested in the possible long-term positive and negative impact of HPV vaccine (e.g. duration of protection, fertility). Additionally, some mothers in Can Tho mentioned the ability of the vaccine to prevent other types of HPV, since the current vaccines are effective only against 2 HPV types (see Table 6).

Table 6. List of parents' concerns about HPV vaccine gathered during focus group discussions and interviews across midterm and final evaluations

	Midterm evaluation	Final evaluation
Long-term impact of HPV vaccine	x	x
Duration of immunity	x	x
Project-related information	x	
New vaccine and its safety	x	
Prevention of other HPV types		x
Vaccination for young girls		x
Vaccine trial	x	

In comparison with findings from the midterm evaluation, there were considerable changes in the concerns parents expressed in the final evaluation. Concern remained in year two about the impact of HPV vaccine on fertility; however, it was less than the concern shown in the midterm evaluation. In the final evaluation, there was no concern about the safety of the vaccine. However, there were two new concerns raised: the potential impact of vaccination on health status of young girls and the ability of the vaccine to prevent other HPV types.

Feasibility of HPV vaccine introduction

Readiness of the health system

HPV vaccine introduction had a clear impact on personnel and regular activities of commune health centers, including:

- Lack of personnel on vaccination day (noted in both years). To address this challenge many commune health centers, in both strategies, mobilized additional personnel from commune mass organizations or health staff from districts and provinces, a common practice for community activities at the local level.

Information and counseling session prior to vaccination session.

- Increased workload for health staff (midterm evaluation). Participants argued that introduction of a new vaccine usually requires an important investment in communication activities and training, when local officials already participate in many other national health programs, which leads to significant changes in the workload of health staff. Additionally, during vaccination sessions, standard procedures and the process of immunization were followed according to project guidelines, which required more staff in comparison to other immunization days. The project also required more supervision, which placed a greater burden of work on health staff in provinces and districts.
- The effect of HPV vaccine introduction on regular activities of commune health centers. Findings from the second year evaluation showed that in Nong Cong and Quan Hoa, HPV vaccination had no significant impact on regular operation of the commune health center. Meanwhile, participants in Can Tho reported a clearer impact of HPV vaccine introduction on regular activities of the commune health center, such as reduced services for health checks and treatment during the vaccination session.

Although they recognized the impact of HPV vaccination, they also highlighted the ability to mitigate and control it. Based on observations from supervisory visits during vaccination sessions , it appeared the impact was minor since most vaccination sessions took only half a working day, with one session per vaccine dose required. In many locations they took less, while in one exceptional case (in Ninh Kieu only), the session extended to a second half day. In addition, even when the regular activities of the commune health centers were disturbed, they were able to maintain at least emergency services.

Example of information, education, and communication materials for eligible girls.

Observeration also noted very positive reactions from health workers at all levels regarding cold chain capacity and vaccine transport. In general, vaccines are vertically transported along the administrative levels from the province to the district by specialized car and/or cold boxes, and from the district to the commune by motorcycle and vaccine boxes. Health workers greatly appreciated that the transport and storage procedures for HPV vaccines followed usual MOH guidance. At the provincial level, the cold chain is equipped with sufficient capacity in terms of storing and transporting vaccine to lower administrative levels. Communes often receive vaccines at the time of the monthly staff meeting, then transport and store them at the commune. After the vaccination campaign, remaining vaccines can be kept in commune health centers and returned to the district at the next monthly staff meeting. For the HPV vaccine, the district carefully checked vaccine transport and storage. In some locations, mainly in Quan Hoa district, Thanh Hoa province, district staff brought vaccines themselves or accompanied commune staff transporting vaccines from districts to communes. This is not common practice compared to other routine vaccines; however, staff wanted to ensure safe transport given the cost of the vaccine. They also noted that the presence of health workers at the district level could provide commune-level health workers with more confidence, particularly in treating AEFIs, if any were observed.

Impact on schools

Findings from both the midterm and final evaluations showed that the impact of HPV vaccination on school activities varied by strategy. In strategy A, the involvement of schools was more intensive than in strategy B, because vaccination took place in the schools. The most frequently cited impacts included the following: