

HPV Vaccination in the Americas: Lessons learned from the introduction and communication strategies

La Antigua Guatemala, Guatemala
October 24 - 26, 2017

REPORT

I. Objectives.

1. To exchange experiences on:
 - a. The decision making process for introduction of the vaccine;
 - b. The main strategies for reaching the target population;
 - c. Methodologies for calculating coverage.
2. To promote social communication tools in order to:
 - a. Maintain the dissemination of the vaccine;
 - b. Respond to rumors and crises.

II. Participants.

In total, 72 people participated in the meeting, representing: the Immunization Programs of the Ministries of Health of 24 countries in the Region, PAHO representative offices in the participating countries, PAHO headquarters, GAVI, other guests.

The countries represented were Antigua and Barbuda, Argentina, Barbados, Belize, Bolivia, Brazil, Chile, Colombia, Costa Rica, Cuba, Dominican Republic, Ecuador, El Salvador, Granada, Guatemala, Guyana, Honduras, Jamaica, Nicaragua, Panama, Paraguay, Peru, Saint Kitts and Nevis, and Uruguay.

III. Activities.

Tuesday, October 24.

The workshop was officially opened by Orlando Escobar, who is responsible for the mother and child component of the Directorate of Hospitals at the Ministry of Health; Mario Martínez, PAHO immunization consultant in Guatemala; and Lucia De Oliveira, PAHO regional advisor on new vaccines.

Morning sessions.

During the morning, two sessions were held.

Session I – HPV: Disease and prevention

1. HPV-related diseases, diagnosis and immune response. Malda Kocache, George Mason University, USA.

Malda Kocache reviewed the main characteristics of human papillomavirus (HPV), diseases related to HPV infection, the epidemiology and burden of disease, immune response, and treatment and prevention of this infection. Among the most noteworthy aspects, she mentioned:

- There are more than 150 types of HPV, which are grouped according to their infection site, whether the skin or mucous membranes.
- The majority of HPV types are benign and the primary manifestations are warts on the skin or mucous membranes.
- Some types such as HPV-16 and HPV-18 are considered high risk and cause cervical cancer, penile cancer, anal cancer, oropharyngeal carcinoma and cancers of the head and neck.
- Other high risk types are 31 and 33.
- The highest prevalence of HPV in cervical tissue is found in Africa, followed by Latin America and the Caribbean (LAC).
- It is estimated that one in every 100 women will have cervical cancer before the age of 75 in developing countries.
- Currently, there are three types of vaccines to prevent HPV infection: the bivalent vaccine (includes types 16 and 18), the quadrivalent vaccine (types 6, 11, 16 and 18) and the 9-valent vaccine (types 6, 11, 16, 18, 31, 33, 45, 52 and 58).

2. Prevention of cervical cancer. Claudia Camel, Organization for Women's Health and Development (ISDM), Guatemala.

Claudia Camel made a presentation on the epidemiology of cervical cancer in LAC, showing that the prevalence of the disease is higher in areas with higher poverty. She reviewed the different strategies currently used in our Region for early diagnosis of cervical cancer, mentioning cytology, visual inspection with acetic acid, the identification of HPV in cervical epithelial cells and new ablative treatments. Based on the evidence reviewed by her institution, they recommend the use of the DNA detection test, which has higher sensitivity for the detection of precancerous lesions and is well accepted in low-income populations. In their experience, users called it the “little brush” test.

3. HPV vaccination in the Region of the Americas. Lucia De Oliveira, PAHO.

Lucia De Oliveira made a presentation on the process of introducing the HPV vaccine in the Americas, the current status of HPV vaccination in the Region, the phases of vaccine introduction, vaccination coverage and recommendations of the PAHO Technical Advisory Group on Vaccine-preventable Diseases (TAG) in 2017. Among the most significant points made were:

- Introduction of the HPV vaccine in national immunization programs began in 2006 (United States), and now 30 countries and territories have this vaccine.
- The vaccine used most frequently is the quadrivalent.
- The TAG reiterated the importance of prioritizing high vaccination coverage in adolescent girls, especially in the 9 to 14 age group, using two doses separated by an interval of at least 6 months, and preferably not exceeding 15 months.
- The TAG encourages the countries and territories of the Region that have not yet introduced the vaccine to assess the feasibility of introducing it by means of a cost effectiveness analysis, among other relevant criteria.

Session II – Performance of the immunization program: global perspective

4. WHO tool for calculating HPV vaccine coverage. Paul Bloem, WHO (virtual).

Paul Bloem made an online presentation on the objectives of HPV vaccination programs, the challenges of monitoring vaccination coverage, WHO recommendations on calculating coverage and WHO HPV vaccination estimates. In his presentation, he highlighted WHO recommendations

on HPV vaccination, as well as monitoring and reporting challenges, the most important of which he said were the identification of denominators, the use of doses in different calendar years, changes in the two or three-dose schedule, and the sex of the target population (only girls or both boys and girls). In addition, he mentioned that WHO estimates HPV vaccination coverage based on analysis of the age cohort when vaccinated, due to which coverage estimates are always a little behind, since coverage is calculated at age 15, but doses received since the age of 9 years are taken into account.

5. Global HPV vaccine coverage. Laia Bruni, Instituto Catalán de Oncología, Spain.

Laia Bruni made a presentation showing the results of analyses made by the Instituto Catalán de Oncología, in order to measure global use of the HPV vaccine, as well as projections of the reduction of cervical cancer in the cohorts vaccinated and the impact of decreases in vaccination coverage. In this regard, she explained the methodology used for these purposes to obtain data as well as to compensate for missing data and calculate the corresponding estimates. Results through 2016 at both the global level and that of the Americas were shown. Among the most noteworthy results, it is estimated that in the Americas a total of 32.3 million girls from 10 to 19 years of age have been vaccinated, with 40.7% coverage of the population from 10 to 14 years of age and 21% of the population from age 14 to 19. In Colombia, it is estimated that for every 1% of coverage, 40 new cases of cervical cancer and close to 18 deaths before the age of 75 are avoided. Lastly, she showed the number of people that need to be vaccinated in order to avoid one case of cervical cancer and one death per country in the Region. The figures ranged from 29 in Bolivia and Guyana to 238 in Canada and the United States in order to avoid a case of cervical cancer, and from 57 in Guyana to 714 in Canada in order to avoid one death.

Afternoon sessions

Two sessions were also held during the afternoon:

Session III – Immunization program performance: regional perspective

6. Calculation of HPV vaccine coverage. Ana Goretti, National Immunization Program, Brazil.

Ana Goretti presented the Brazilian experience on the calculation of HPV vaccine coverage levels. They use the approach of calculating coverage levels per age cohort upon receiving the vaccine in the 9 to 15 age range. The calculation shown included the years 2013 - 2017. For this purpose, they use a matrix of consolidated data with the year in the rows and the age groups in the columns, which makes it possible to calculate the number of doses administered by age group, by vaccination year and by cohort. The main result shown was that as of June 2017, 48.1% of the girls from 9 to 15 years of age had been vaccinated with two doses and 28.3% of the boys from 12 to 13 years of age had received the first dose.

7. Good practices for delivering HPV vaccination in the population. Gladys Ghisays, representing the Ministry of Health of Ecuador.

Gladys Ghisays shared Ecuador's experience with regard to the chronology of the introduction, strategies for delivering the vaccine to girls from 9 to 11 years of age and the lessons learned from this. Among the most remarkable aspects, she showed two schedules that had been used, since vaccination had begun when the recommendation was 3 doses, which was later changed to two doses, in addition to the current two-dose schedules differentiated by 0 – 6 months for coast and highland areas, based on when schools are in session, since the delivery of the vaccine for regular doses is carried out at schools. In order to improve coverage levels, this activity is complemented with catch-up vaccination campaigns, which have proven to be very effective for this purpose. The calculation of coverage levels is made by age cohort without using individual databases, which resulted in coverage levels of over 100% for 2015 (many girls may have been

revaccinated). What stands out as the main lessons learned are that of not implementing the use of the informed consent form for HPV vaccination, the need to strengthen the cancer screening program in order to appropriately estimate the impact of vaccination and communication directed toward health care workers and parents.

Session IV – Monitoring of the HPV vaccine following introduction

8. Vaccine impact assessment. Nathalie El Omeiri, PAHO.

Nathalie El Omeiri made a presentation in which she reviewed the definitions of the vaccine effects, the importance of measuring the impact of the HPV vaccine, the most common methods used, the specific challenges for the HPV vaccine, and published findings on the impact of the HPV vaccine. Thus, the concepts of efficacy, effectiveness, indirect effects and total effects were explained. The concept and how the impact of a vaccination program is measured, as well as the assumptions of the impact studies, were reviewed. Among the main reasons for measuring the impact of vaccination, she emphasized the need to obtain evidence in order to guide policies and prevention measures, sustain investment in the vaccine, and show the population its benefits. Having LAC data would be ideal, since compared to other regions of the world, LAC countries use schedules, vaccines, strategies, and target groups that may vary, and present different coverage levels, health care systems, and prevalence of HPV types. She stressed the importance of conducting robust studies using rigorous methods and good quality data. Among the main effects to be studied, HPV-related infections, condylomas, precancerous lesions and HPV-related cancers were mentioned. She emphasized that the greatest impact is always achieved by reaching high coverage levels in target groups before they are exposed to the virus. According to a systematic review of the impact studies of both vaccines used globally (Drolet et al. 2015), in countries/regions with coverage levels over 50%, a reduction in HPV 16/18 infection of 68% was reported between the period prior to the vaccine introduction and the post-introduction period, with the reduction beginning in the first year. A reduction of 28% was also noted in HPV types 31, 33 and 45 in girls from 13-19 years of age; of 34% in condylomas in boys under 20 years of age; of 32% in condylomas in women from 20-39 years of age; and 31% in high-grade precancerous lesions in girls from 13-19 years of age. Herd effect and cross-protection were observed in studies conducted in countries/regions with high vaccination coverage levels. Lastly, in the studies reviewed, no increase was recorded in the circulation of high-risk viruses not included in the vaccine following its introduction. During 2018, PAHO will launch a regional initiative for measuring the impact of the HPV vaccine in LAC, providing methodological guidance for a multicentric study in selected countries. This initiative would be a good opportunity for an integrated effort among immunization, cancer prevention, women's and adolescent health teams, among others.

9. The United Kingdom's experience assessing the impact of the HPV vaccine. David Mesher, Centre for Infectious Disease Surveillance and Control, Public Health England.

David Mesher made a presentation on the achievements of vaccination in the United Kingdom, from the perspective of the impact achieved with the introduction of the HPV vaccine. In his presentation, he showed the changes observed in the prevalence of HPV infection types 16, 18, 31, 33 and 45 (16 and 18 are included in the vaccine used in the country) related to vaccination coverage. Additionally, he presented the changes in the rate of diagnosis of genital and anal warts, showing the trend of these diseases in the population of young women compared to that of young men of the same age and MSM. There was a significant reduction in the frequency of diagnosis in women and MSM from 15-17 years in comparison with men of the same age and with women, men and MSM from 19 to 24 years of age. The effect was even more pronounced in women and in MSM following the introduction of the quadrivalent vaccine.

10. Controversies surrounding HPV: lessons learned in the European Region. Katrine Bach Habersaat, WHO/EUR (virtual).

katrine Bach Habersaat made an online presentation on challenges related to the introduction of the HPV vaccine in Europe, especially with regard to biased and sensationalist information against vaccination disseminated by the media. She showed how in countries such as the Netherlands that have high vaccination coverage levels, the presentation of a documentary seriously affected vaccination coverage. Then when it was broadcast in Ireland, it had the same effect. Among other causes, the most important were the difference in the perception of the risk among the public and health care workers, strong advocacy against vaccination by individuals with an influential voice in the media, misinformed media with an interest in sensationalism, and the skepticism of health care workers. The most significant challenges related to the program have been problems with trust in the vaccine and a lack of adequate preparation, adequate communication resources, a timely response, timely information for girls, and adequate means of countering rumors.

11. Adverse Events Following Immunization (ESAVI). Maria Tereza Da Costa Oliveira, PAHO.

Maria Tereza Da Costa made a presentation on ESAVI that have been described in relation to the HPV vaccine. Among the local events related to the vaccine, injection site reactions consisted of pain (84% of cases), followed by swelling and erythema (25%). Intense pain that hinders arm movement has been reported in 6% of cases. Local reactions are less frequent in boys from 9 to 15 years of age. The most frequent vaccine-related systemic events are headache (33%) and fever (10%). Dizziness, myalgias, arthralgias and gastrointestinal discomfort have also been described. In addition, in her presentation she discussed vasovagal syncope and its prevention. It has been described as an event related not only to the HPV vaccine, but also to the use of injectables in general, including taking blood samples. Lastly, she presented the topic of mass sociogenic events characterized by the mass presentation of symptoms suggestive of organic illness, but without an identifiable origin. This type of events has been reported not only in relation to vaccines, but also to other events that lead to the perception of a threat or vulnerability, such as a disaster, an epidemic or the bite of a poisonous animal. She showed a video on a fit of uncontrollable laughter that occurred in Tanzania at a mission-run girls' school in the district of Bukoba, where **an epidemic of contagious laughter suddenly broke out** among the school girls and more than 1000 people were affected. The epidemic began in January 1962 and lasted 18 months. The mass events that have occurred in relation to HPV vaccination have negatively impacted vaccination coverage levels, so they need to be prevented. Lastly, she mentioned that a population-based study and review of surveillance data have not revealed a greater risk of Guillain-Barré Syndrome following HPV vaccination. She also mentioned that there is no evidence that other diseases such as complex regional pain syndrome (CRPS or reflex sympathetic dystrophy syndrome) and postural orthostatic tachycardia syndrome (POTS) are direct effects of the HPV vaccine, despite the difficulty of diagnosing both. Lastly, she concluded that HPV vaccines are safe and that the events following immunization were mild to moderate with spontaneous evolution; immunization anxiety may occur and should be prevented. An anxiety-related reaction is one of the hypotheses to be tested. However, reactions related to the vaccine and immunization errors need to be ruled out and it must be determined that there are no coinciding events that could explain the case.

Wednesday, October 25

Morning and afternoon sessions.

12. Workshop on communication for the HPV vaccine.

This part of the conference was led by Sebastián Oliel and Maricel Seeger. During the workshop, they reviewed the concepts of the basic elements of a communication plan and the process of

preparing a communication plan using the SOCO (Single Overarching Communication Outcome) strategy, that is, gearing communication efforts toward the change desired in the target audience.

The topics of key messages, strategies, activities and channels of the communication plan, and materials for the campaign were also reviewed.

As components of the communication plan, they mentioned the need for a communication team; clear identification of the objectives of the communication program; analysis of the situation, SMART objectives, the target audience and the messages for each audience; strategies, activities and channels for reaching the audience; materials with the name of the campaign; the crisis communication plan and monitoring and assessment of the plan. With regard to crisis communication, advocacy for the purpose of prevention, response to indignation, crisis communication and health education were mentioned as the main strategies. The work plan must have an adequate budget.

Thursday, October 26

Morning and afternoon sessions.

13. Workshop on lessons learned from the introduction of the HPV vaccine.

Five work groups were formed for this workshop for the purpose of identifying lessons learned in relation to the process of introducing the HPV vaccine in national immunization programs. The distribution of the work groups was the following:

Group 1. Lessons learned in the Caribbean from the introduction of the HPV vaccine	
Members: <ul style="list-style-type: none"> - Antigua and Barbuda - Barbados - Belize - Granada - Guyana - Jamaica - Saint Kitts and Nevis 	Moderator: Karen Lewis Secretary: Nathalie El Omeiri

Group 2. Decision making for the introduction of the HPV vaccine	
Members: <ul style="list-style-type: none"> - Costa Rica - El Salvador - Guatemala - Panama 	Moderator: Gladys Ghisays Secretary: Dilsa Lara

Group 3. Planning for the introduction of the HPV vaccine	
Members: <ul style="list-style-type: none"> - Cuba - Guatemala - Honduras - Uruguay - Dominican Republic 	Moderator: Ida Molina Secretary: Odalys García

Group 4. Vaccination strategies for the HPV vaccine	
Members: <ul style="list-style-type: none"> - Colombia - Nicaragua 	Moderator: Samia Abdul Secretary: Nancy Váscónez

- Paraguay	
- Peru	

Group 5. Estimation and monitoring of HPV vaccine coverage	
Members: - Argentina - Bolivia - Brazil - Chile - Guatemala	Moderator: Lely Guzmán Secretary: Maria Tereza Da Costa Oliveira

For the group work, methodological guidelines were developed for reflection by each group of participants from each country, followed by an exchange of experiences and opinions among the members from each country in each working group. Briefly, the work began with the identification of challenges encountered in the introduction process, each country's strengths and opportunities for dealing with them, and the lessons learned from this experience. Each of the lessons learned was discussed by the group and then justified and prioritized. The results of this workshop are summarized on the following tables.

Group 1. Topics: Decision making; Planning for the introduction; Vaccination strategies; Coverage estimation and monitoring. Caribbean countries.

Lessons Learned	Justification and Prioritization (Describe the assumption or situation where it applies, its importance, the countries where it has been proven and its priority level)
1. A strong collaboration between ministry of health and education at all levels (policy, service provision) as well as utilization of existing resources and opportunities facilitates HPV vaccination implementation.	<ul style="list-style-type: none"> • Description: It was difficult to conduct school based vaccination activities due to resistance from different levels of the education sector, where no school health programs existed, where teachers were not sensitized adequately or there was no/weak relationship between community health services and schools. • Countries where it has been applied: Barbados, Jamaica, Belize, Guyana. St Kitts and Nevis, Grenada, Antigua, though without vaccination endorsed the lesson learned. • Level of importance: Essential.
2. Sensitization and training of health care workers in both technical aspects and communication on HPV vaccination are critical for successful implementation. They play an important role in disseminating information and facilitating acceptance of the vaccine.	<ul style="list-style-type: none"> • Description: HCWs who were not convinced of the safety and effectiveness of the vaccine and had personal doubts passed these on to parents, decreasing vaccine uptake. • Countries where it has been applied: Barbados, Jamaica, Belize, Guyana. St Kitts and Nevis, Grenada, Antigua, though without vaccination endorsed the lesson learned. • Level of importance: Essential.
3. Careful stakeholder analysis with strategic targeted approaches for communication helps anticipate, mitigate and address potential barriers to HPV vaccine acceptance. - Tailored messages for parents, religious groups, - Use of all media types (use same media as	<ul style="list-style-type: none"> • Description: Because all stakeholders have different perspectives, communication and education messages had to be tailored to each one of them with emphasis on parents, religious groups and counteracting antivaccine groups. Use of champions and positive testimonials facilitated acceptance. • Countries where it has been applied: Barbados,

<p>antivaxers)</p> <ul style="list-style-type: none"> - Use of champions and endorsement from key influencers - special media training and sensitization - use of testimonials 	<p>Jamaica, Belize, Guyana.</p> <ul style="list-style-type: none"> • Level of importance: Essential.
<p>3. Promotion of HPV vaccine as part of a comprehensive cancer prevention and control program as opposed to sexually transmitted disease prevention.</p>	<ul style="list-style-type: none"> • Description: Associating HPV with sexual transmission had negative connotations and created some resistance to vaccination for young girls. When message switched to cancer prevention, acceptance increased. • Countries where it has been applied: Barbados, Jamaica, Belize. • Level of importance: Important.
<p>4. Sustained and early engagement of policy, technical and legal teams in the health sector as well as adequate financial resources are needed to protect the implementation.</p>	<ul style="list-style-type: none"> • Description: There were different opinions even within the same sector about the use of a consent form and the need for highest level approval (Cabinet) which created challenges and delays in the implementation as well as impacted on resources provided, especially for communication. • Countries where it has been applied: Barbados, Jamaica, Belize, Guyana. Antigua, though without vaccination endorsed the lesson learned. • Level of importance: Essential.
<p>6. Ensuring a sustained period of sensitization and public education prior to and during implementation facilitates a successful HPV vaccination program.</p>	<ul style="list-style-type: none"> • Description: When sensitization and education campaigns were too short or too close to the launch, it generated more media and public resistance. • Countries where it has been applied: Jamaica, Belize, Guyana. • Level of importance: Essential.
<p>7. Adequate and detailed planning prior to HPV vaccine introduction, including adjustments to cold chain capacity and timely procurement will facilitate vaccine delivery.</p>	<ul style="list-style-type: none"> • Description: Immunization program should be ready to receive the vaccine. • Countries where it has been applied: St Kitts and Nevis, though without vaccination endorsed the lesson learned. • Level of importance: Essential.

Group 2. Topic: Decision making. Countries: Costa Rica, El Salvador, Guatemala, Panama.

<p>Lessons learned</p>	<p>Justification and Prioritization (Describe the assumption or situation where it applies, its importance, the countries where it has been proven and its priority level)</p>
<p>1. The participation of all stakeholders (technicians, scientists, politicians and civil society) ensures successful planning for the introduction of the HPV vaccine.</p>	<ul style="list-style-type: none"> • Description: The participation of all stakeholders makes it possible to expedite processes, facilitate the resources required to implement vaccination, strengthen all of the components of the immunization program, avoid mistrust and conflicts between the parties and reduce the risk that vaccination will be unsuccessful. • Countries where it has been applied: Guatemala. The decision was made without the participation of the Ministry of Health, which led to scheduling and funding problems. • Importance: Essential.
<p>2. Political support is essential in order to</p>	<ul style="list-style-type: none"> • Description: Although the Ministry of Health

<p>initiate the decision making process for the introduction of the HPV vaccine.</p>	<p>contributes technical information that is key in decision making on the introduction of the HPV vaccine, the decision to introduce the vaccine is not usually within its authority, but rather that of other government entities.</p> <ul style="list-style-type: none"> • Countries where it has been applied: Costa Rica. The Ministry of Health contributed scientific and technical evidence, but the decision to introduce a vaccine is not up to the ministry, but rather to the Social Security Fund. • Importance: Essential.
<p>3. The creation of each country's own scientific and technical evidence is necessary to sensitize decision makers on the decision to introduce the HPV vaccine.</p>	<ul style="list-style-type: none"> • Description: The production of scientific and technical evidence, such as disease burden and cost effectiveness studies, is important for decision making on HPV vaccine introduction. The contribution of this evidence makes it possible to: 1) estimate the potential effect on the target disease(s), 2) build technical capacity for developing and assessing evidence, 3) prepare a baseline for comparing and measuring impact. • Countries where it has been applied: Costa Rica, Ecuador. • Importance: Important.
<p>4. A guarantee of economic resources is necessary, not only for decision making on the introduction of the HPV vaccine, but also to ensure the sustainability of the regular vaccination program.</p>	<ul style="list-style-type: none"> • Description: The allocation of sufficient economic resources ensures the entire procurement and implementation process. • Countries where it has been applied: Guatemala, Panama. In the case of Panama, it was necessary to present a justification to the National Assembly in order for an extraordinary budget item to be created for the procurement and introduction of the vaccine. • Importance: Essential.
<p>5. Technical and managerial capacity is needed in the EPI to support the decision to introduce the HPV vaccine and implement it successfully throughout the country.</p>	<ul style="list-style-type: none"> • Description: When health care workers have no knowledge of the vaccine and have their doubts about its benefits or its safety, this hinders or slows introduction of the vaccine. Technical and managerial capacity in the EPI makes it possible to: 1) gain the commitment of health care workers and population awareness, 2) build confidence in the EPI and increase acceptance of vaccination, 3) avoid programmatic errors and limit the impact of AEFI. • Countries where it has been applied: Costa Rica, Ecuador, Guatemala and Panama. • Importance: Important.
<p>6. Communicate documented evidence in a simple, manner accessible to the entire population in relation to the safety of the HPV vaccine, which helps to overcome misgivings among the population, thereby facilitating introduction of the vaccine.</p>	<ul style="list-style-type: none"> • Description: When high-level health care workers receive adequate and complete technical information, they become facilitators and advocates for the decision to introduce the vaccine. • Countries where it has been applied: Ecuador. • Importance: Important.

Group 3. Topic: Planning for introduction. Countries: Cuba, Dominican Republic, Guatemala, Honduras, Uruguay.

<p style="text-align: center;">Lessons learned</p>	<p style="text-align: center;">Justification and Prioritization (Describe the assumption or situation where it applies, its importance, the countries where it has been proven and its priority level)</p>
<p>1. Place the matter on the public agenda and facilitate actions that support the introduction of the vaccine in order to achieve national consensus.</p>	<ul style="list-style-type: none"> • Description: Inclusion of the topic of HPV vaccination and its benefits is necessary, since its implementation is not feasible without political support. • Countries where it has been applied: Dominican Republic, Honduras and Uruguay. • Importance: Essential.
<p>2. Have an Introduction Plan that lists the actions required in the different components, with a budget.</p>	<ul style="list-style-type: none"> • Description: Having an Introduction Plan is necessary in order to guide actions and to achieve the objectives efficiently. • Countries where it has been applied: Dominican Republic, Guatemala, Honduras and Uruguay. Cuba was in agreement, although the vaccine has not yet been introduced. • Importance: Essential.
<p>3. The identification of human resource and logistical needs in the Introduction Plan is necessary in order to ensure adequate vaccination management and sustainability.</p>	<ul style="list-style-type: none"> • Description: Given that there are limited human resources with the competencies required and scarce logistical resources to meet the demand of the immunization program, it is vital that needs in these areas be correctly identified in the implementation plan, in order to attend to them appropriately and ensure the implementation and sustainability of HPV vaccination. • Countries where it has been applied: Dominican Republic, Guatemala, Honduras and Uruguay. Cuba was in agreement, although the vaccine has not yet been introduced. • Importance: Essential.
<p>4. Establish extra-institutional partnerships for funding vaccination.</p>	<ul style="list-style-type: none"> • Description: Insufficient allocation of financial resources for the procurement of vaccines may compromise the implementation of vaccination and its sustainability. The search for initial support from other government institutions can facilitate the introduction process while budget is being secured for the sustainability of the program. • Countries where it has been applied: Dominican Republic. The Ministry of Education procured the vaccine doses required for the implementation of the HPV vaccine in the immunization program. • Importance: Important.
<p>5. Institutional and intersectoral coordination for supporting the implementation of the National Plan.</p>	<ul style="list-style-type: none"> • Description: Intrasectoral and intersectoral coordination is necessary in order to reach a consensus in relation to the importance of vaccination and to the processes to be carried out for its implementation. • Countries where it has been applied: Dominican Republic, Guatemala, Honduras and Uruguay. Cuba was in agreement, although the vaccine has not yet been introduced. • Importance: Important.
<p>6. Turn access to short-term funds into an opportunity (GAVI).</p>	<ul style="list-style-type: none"> • Description: Seeking sources of resources external to the country that complement national resources is

	<p>important for the purpose of implementing vaccination in the country.</p> <ul style="list-style-type: none"> • Countries where it has been applied: Honduras. • Importance: Important.
7. Having a Vaccine Law in force and strict enforcement is fundamental in order to facilitate the process of introducing the vaccine.	<ul style="list-style-type: none"> • Description: Having a legal framework facilitates the financial and technical sustainability of the introduction of the HPV vaccine in the National Immunization Program. • Countries where it has been applied: Dominican Republic, Guatemala, Honduras and Uruguay. Cuba was in agreement, although the vaccine has not yet been introduced. • Importance: Important.
8. For the definition of the type of vaccine to be introduced, the participation of the Committee on Immunization Practices and other key stakeholders is fundamental.	<ul style="list-style-type: none"> • Description: The selection of the type of vaccine to be introduced is an issue that should be addressed in the country's National Immunization Technical Advisory Group, in order to provide adequate advice on the matter and technical support that strengthens the credibility of vaccination and the immunization program. • Countries where it has been applied: Dominican Republic, Guatemala, Honduras and Uruguay. Cuba was in agreement, although the vaccine has not yet been introduced. • Importance: Important.
9. Ensure the availability of the vaccine and supplies in the country at least one month prior to the start of vaccination.	<ul style="list-style-type: none"> • Description: The availability of the vaccine and vaccination supplies is necessary so the execution of the plan can proceed as scheduled. • Countries where it has been applied: Dominican Republic, Guatemala, Honduras and Uruguay. Cuba was in agreement, although the vaccine has not yet been introduced. • Importance: Important.
10. The incorporation of other stakeholders, such as the Secretariat of Education, in the National Committee is fundamental in order to achieve its empowerment and support throughout the vaccination process, starting with the introduction of the HPV vaccine.	<ul style="list-style-type: none"> • Description: Greater awareness and empowerment of the education sector makes it possible to ensure the vaccination strategy in schools, which is fundamental to reach the school-aged target population. • Countries where it has been applied: Dominican Republic, Honduras and Uruguay. • Importance: Important.
11. Designing and implementing a participatory communication strategy with a gender- and rights- based approach, according to the context of each country is essential for the successful introduction of the HPV vaccine. This strategy should be monitored and assessed.	<ul style="list-style-type: none"> • Description: An adequate communication strategy makes it possible to raise awareness and mobilize the population, as well as to neutralize misinformation and negative rumors. • Countries where it has been applied: Dominican Republic, Honduras and Uruguay. • Importance: Important.
12. Strengthening primary health care and raising awareness of health care workers at every level and in every sector is fundamental prior to the introduction of any vaccine.	<ul style="list-style-type: none"> • Description: Adequate care of the target population, both in and outside of health care services, depends on the strengthening of primary health care services and the awareness and training of health care workers. • Countries where it has been applied: Dominican Republic, Honduras and Uruguay. • Importance: Important.

<p>13. Change should be seen as an opportunity rather than a threat, favoring adaptation and identification of strengths for the EPI.</p>	<ul style="list-style-type: none"> • Description: In relation to reforms being made in the health sector, these changes should be taken advantage of as an opportunity to achieve better integration of health services, in particular vaccination services. • Countries where it has been applied: Dominican Republic, Honduras. • Importance: Desirable.
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Group 4. Topic: Vaccination strategies. Countries: Colombia, Nicaragua, Paraguay, Peru.

<p>Lessons learned</p>	<p>Justification and Prioritization (Describe the assumption or situation where it applies, its importance, the countries where it has been proven and its priority level)</p>
<p>1. Have a communication campaign including all of the elements, with cultural inclusion of every audience and prior validation.</p>	<ul style="list-style-type: none"> • Description: An adequate communication campaign will facilitate dealing with the threat of rejection of vaccination by anti-vaccination groups that for spurious reasons have caused low vaccination coverage levels in some countries. Coordination with the Ministry of Education, regional and local governments, and civic organizations is vital. • Countries where it has been applied: Colombia, Paraguay, Peru. Nicaragua was in agreement, although it has not yet introduced the vaccine. • Importance: Essential.
<p>2. Continuously train and raise awareness of all personnel involved in the different vaccination strategies.</p>	<ul style="list-style-type: none"> • Description: Continuous training and awareness of health care workers involved in vaccination will make it possible to offset the high turnover of health care workers, facilitate completion of vaccination schedules, achieve high vaccination coverage levels and reinforce acceptance and confidence in vaccination among the population. • Countries where it has been applied: Colombia, Paraguay, Peru. Nicaragua was in agreement, although it has not yet introduced the vaccine. • Importance: Essential.
<p>3. Establish a single denominator according to the different databases available.</p>	<ul style="list-style-type: none"> • Description: It is important to determine the target population and the vaccination goal, for which the identification of a single denominator is critical in order to measure progress in vaccination coverage. • Countries where it has been applied: Colombia, Paraguay, Peru. Nicaragua was in agreement, although it has not yet introduced the vaccine. • Importance: Essential.
<p>4. Monitor the goal using different tools such as a database of the number of people vaccinated (vaccine meter), a nominal registry of those who have not been vaccinated, and applications that facilitate recording and following up on the target population.</p>	<ul style="list-style-type: none"> • Description: The progress made in vaccination coverage should be measured using tools that facilitate recording and following up on those vaccinated in order to complete vaccination schedules and achieve the coverage goal. • Countries where it has been applied: Colombia, Paraguay, Peru. Nicaragua was in agreement, although it has not yet introduced the vaccine. • Importance: Important.
<p>5. Have access to innovative technology for</p>	<ul style="list-style-type: none"> • Description: It is important to have access to

nominal recording and follow-up on the population vaccinated.	<p>technology that facilitates individual recording and follow-up on those vaccinated.</p> <ul style="list-style-type: none"> • Countries where it has been applied: Colombia, Paraguay, Peru. Nicaragua was in agreement, although it has not yet introduced the vaccine. • Importance: Desirable.
6. Adapt vaccination strategies to reach the goal.	<ul style="list-style-type: none"> • Description: The need to approach a target population different from traditional ones makes it necessary to seek more efficient strategies in order to vaccinate them and reach the goal. • Countries where it has been applied: Colombia, Paraguay, Peru. Nicaragua was in agreement, although it has not yet introduced the vaccine. • Importance: Important.
7. The vaccination strategies defined must have legal backing through resolutions, regulations and guidelines.	<ul style="list-style-type: none"> • Description: Having official technical documents and legal support is crucial to ensure access to the target population and to implement the vaccination strategies selected. • Countries where it has been applied: Colombia, Paraguay, Peru. Nicaragua was in agreement, although it has not yet introduced the vaccine. • Importance: Important.
8. Have political and inter-institutional support at all levels.	<ul style="list-style-type: none"> • Description: Achieving the vaccination goal is only feasible with the support of the authorities at the different decision-making levels that make adequate implementation of the vaccination strategy possible. • Countries where it has been applied: Colombia, Paraguay, Peru. Nicaragua was in agreement, although it has not yet introduced the vaccine. • Importance: Essential.
9. Have the support and commitment of civil society at all levels (youth, parents, student leaders).	<ul style="list-style-type: none"> • Description: The target population, parents and civil society in general should be adequately informed in order to obtain their support and commitment to HPV vaccination. • Countries where it has been applied: Colombia, Paraguay, Peru. Nicaragua was in agreement, although it has not yet introduced the vaccine. • Importance: Important.
10. Have a comprehensive crisis plan in order to be able to respond immediately to different events that threaten the success of vaccination.	<ul style="list-style-type: none"> • Description: The presentation of Adverse Events Following Immunization (AEFI), as well as the presence of false information on social networks or in the media may cause mistrust in vaccination among the population, due to which it is important to have a crisis plan to attenuate and offset this potential effect. • Countries where it has been applied: Colombia, Paraguay, Peru. Nicaragua was in agreement, although it has not yet introduced the vaccine. • Importance: Essential.

Group 5. Topic: Estimation and monitoring of coverage. Countries: Argentina, Bolivia, Brazil, Chile, Guatemala.

Lessons learned	Justification and Prioritization (Describe the assumption or situation where it applies, its importance, the countries where it has
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	been proven and its priority level)
1. The target population should be defined according to each country's operating capacity.	<ul style="list-style-type: none"> • Description: An adequate determination of the target population and the cohorts to be vaccinated is crucial for adequate scheduling and follow-up on progress and assessment of the vaccination goal. • Countries where it has been applied: Argentina, Bolivia, Brazil and Chile. • Importance: Essential.
2. The information system must be appropriately implemented and articulated between the country's different levels of government, and there must be adequate equipment and Internet access for recording information.	<ul style="list-style-type: none"> • Description: In order to maintain an adequate flow of information, the information system must be adequately implemented at every level of government. In addition to using the latest mobile technologies, it facilitates the timeliness and quality of information, as well as the monitoring of progress toward achieving goals and information-based decision making. • Countries where it has been applied: Argentina, Bolivia, Brazil and Chile. • Importance: Essential.
3. The population denominators must be adequately updated and must correspond to official data.	<ul style="list-style-type: none"> • Description: Once the target population has been determined, the calculation/determination of the size of the population is critical for adequate vaccination scheduling and follow-up. In some countries data from the latest census is used, while in others data from the Ministry of Education on the number of students enrolled per year is used. • Countries where it has been applied: Argentina and Brazil use data from the national census; Bolivia and Chile use data on the number of girls enrolled in school; Guatemala uses the database of births and crosschecks the data with the Ministry of Education. • Importance: Essential.
4. In accordance with the target population and the vaccination strategy selected, a methodology must be developed that facilitates the calculation of coverage levels and follow-up on the cohorts vaccinated at every level of government.	<ul style="list-style-type: none"> • Description: Recording the first and second doses is central for adequate vaccination follow-up and assessment. The fact that the doses are administered in different years can pose a significant challenge for this purpose. The use of a nominal database would facilitate vaccination follow-up and assessment significantly. • Countries where it has been applied: Brazil, Bolivia and Guatemala use age cohorts to make the calculations; Chile uses grade-level cohorts to conduct follow-ups and administers the doses every 12 months. • Importance: Essential.
5. Have an AEFI surveillance system officially implemented and adequately regulated.	<ul style="list-style-type: none"> • Description: It is important to have an AEFI surveillance system, as it makes it possible to treat and follow up on a person who may be affected and to evaluate the safety profile of the vaccine. This will facilitate responding to events that may prompt discussion of the quality and safety of the vaccine and lead to greater trust in the vaccination and the program. • Countries where it has been applied: Argentina, Bolivia, Brazil, Chile and Guatemala. • Importance: Essential.
6. Implement a nominal vaccination	<ul style="list-style-type: none"> • Description: Having a nominal system to register those

<p>registration system.</p>	<p>vaccinated, which includes the national identification number, doses, dates, vaccine type, vaccine lot, vaccinator and vaccination site, is of great help not only for follow-up and achieving coverage levels, but also for assessing the vaccination strategy, measuring achievement of the goal and AEFI surveillance.</p> <ul style="list-style-type: none"> • Countries where it has been applied: Argentina, Bolivia and Guatemala are developing a system for HPV; Brazil has it operational in 60% of its municipalities; and Chile has an operational system in 100% of its municipalities. • Importance: Important.
<p>7. Vaccination data from private facilities must be included in the information system.</p>	<ul style="list-style-type: none"> • Description: Although the contribution to national vaccination coverage by private facilities is small in our Region, having these data will make it possible to have more complete data on vaccination coverage. • Countries where it has been applied: Bolivia and Guatemala do not yet have information from private facilities; Argentina has data from the province of Buenos Aires; Brazil and Chile have 100% of the data from private facilities. • Importance: Desirable.

IV. Conclusions, Recommendations and Next Steps.

- **Lessons learned**

- Concern about AEFI

- Despite the fact that the HPV vaccine is a safe vaccine, with mild-to-moderate local and systemic adverse events, rumors and sociogenic events that have occurred in the Region have caused parents to be concerned, which has had a negative impact on coverage levels.

- Calculation of coverage

- According to analysis of the data from countries available on the JRF for 2016, some problems mentioned in relation to calculation of coverage were:

- Some countries do not report the doses administered, but rather only coverage;
 - Some do not report the target population;
 - Some have considered the girls enrolled for vaccination as the target population to receive the first dose;
 - Some consider the girls enrolled for the first dose as the target population to receive the second dose;
 - Some do not consider the cohorts and report more girls vaccinated with the second dose than the first.

- Scope of coverage (goal >80%)

- The countries have had difficulty achieving the goal of vaccinating 80% of the girls. School-based vaccination has been shown to facilitate the scope of coverage. However, complementary strategies must be sought in order to vaccinate those who do not go to school or who attend school but reject the vaccine. One strategy is to make the vaccine available through healthcare facilities as well, but girls do not usually seek the vaccine.

- Communication (summary of main lessons learned according to responses of 24 countries surveyed):

- - An integrated communication plan is needed, including crisis response and messages tailored to each audience.

- There should be a permanent communication team.
 - The Ministry of Health should maintain the communication budget.
 - Communication actions should be carried out at least twice a year (continuously, if possible); it has been difficult to communicate the second dose.
 - There should be an intersectoral communication, promotion and social mobilization committee.
 - More time needs to be dedicated to gaining the commitment of key partners such as schools, parents and decision makers prior to introduction of the vaccine.
 - More effort is required in working with doctors.
 - Strategic partners in the media need to be identified and the media needs to be made aware of the vaccine. The influence of social networks in disseminating information should not be underestimated. Rapid response to rumors and crises is required.
 - Monitoring is important in order to change and adjust the campaign; anti-vaccination movements should be monitored in order to be prepared to respond to them. Attention should be paid to the situation in neighboring countries.
- **TAG-based recommendations – July 2017**
 - The TAG reiterates the importance of prioritizing high coverage in cohorts of adolescent girls in order to ensure full protection against HPV in girls and induce herd immunity in populations of boys.
 - The TAG encourages Member States that have yet to introduce the vaccine in their routine vaccination schedules to assess its feasibility, cost effectiveness and other relevant criteria for decision making at the national level, in order to consider the incorporation of this vaccine.
 - The TAG urges PAHO Member States to carefully consider their approaches to communication about the HPV vaccine, ensuring the generation of tailored messages.
 - The TAG requests that PAHO support the Member States in their efforts to better document HPV vaccination coverage.
 - Wherever possible, countries should monitor the impact of HPV vaccination.
- **Commitments**
 - Publication of report on lessons learned.
 - Handbook on calculation of vaccination coverage.
 - Review of methodologies in order to assess the impact and effectiveness of the HPV vaccine: selected countries will be invited to conduct impact studies.
 - Development of communication material: videos, documents on HPV vaccination (frequently asked questions).