



CERVICAL CANCER
PREVENTION IN LATIN AMERICA
AND THE CARIBBEAN

CERVICAL CANCER PREVENTION AND CONTROL PROGRAMS: A RAPID ASSESSMENT IN 12 COUNTRIES OF LATIN AMERICA





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TABLE OF CONTENTS

EXECUTIVE SUMMARY	5
INTRODUCTION.....	6
OBJECTIVES	7
METHODOLOGY.....	7
RESULTS.....	8
1. Section I: Demographic data	8
2. Section II: Burden of disease.....	8
3. Section III: Components of the cervical cancer prevention and control program.....	8
3.1. General characteristics	8
3.2. Primary prevention: HPV vaccination	11
3.3. Secondary prevention: screening tests and treatment of precancerous lesions.....	11
3.4. Treatment and palliative care.....	13
4. Section IV: Monitoring	13
5. Section V: Funding	14
6. Section VI: General assessment of the situation	14
DISCUSSION	16
CONCLUSIONS	19
REFERENCES.....	20
ANNEX 1 SITUATION ANALYSIS CERVICAL CANCER PREVENTION AND CONTROL PROGRAM	21

INDEX OF TABLES

Table 1	Countries invited to participate in the Latin America Subregional Meeting on Cervical Cancer Prevention, 2-3 June 2010, Panama.....	7
Table 2	Relevant demographic data for planning cervical cancer programs, by country.	9
Table 3	Studies on the prevalence of HPV infection reported by the countries surveyed.....	9
Table 4	General characteristics of cervical cancer prevention and control programs, by country.	10
Table 5	Cervical cancer prevention and control guidelines or protocols, by country.	11
Table 6	Components of secondary prevention through screening with Pap tests and VIA.....	12
Table 7	Monitoring of cervical cancer prevention and control programs.	13
Table 8	Financing for cervical cancer prevention and control programs.....	14
Table 9	Respondents' general assessment of cervical cancer prevention and control programs.	15

ACRONYMS

LA Latin America | **HDI** Human Development Index | **HPV** Human Papillomavirus
IARC International Agency for Research on Cancer | **NGO** Nongovernmental Organization
PAHO Pan American Health Organization | **VIA** Visual Inspection with Acetic Acid | **WHO** World Health Organization



EXECUTIVE SUMMARY

This report synthesizes the results of a survey on cervical cancer programs in selected countries of Latin America. The survey was completed by cervical cancer program managers from the Ministry of Health, in anticipation of the *Latin America Subregional Meeting on Cervical Cancer Prevention* held in Panama in June 2010. A rapid assessment of the status of the programs was obtained from the survey, and used as a basis for discussions during the *Subregional meeting* on priorities to improve program effectiveness.

This analysis shows that most countries acknowledge the high burden of cervical cancer and the need to improve cervical cancer program effectiveness to have a greater impact on incidence and mortality rates. In this regard, all countries have a national plan in place for cervical cancer prevention and control. Regarding HPV vaccines for primary cervical cancer prevention, Panama and Mexico have included HPV vaccines into their national public health programs, although countries such as Bolivia and Peru have demonstration projects under way. With regard to secondary prevention, the introduction of new cervical cancer screening technologies is still in the very early stages; the Pap test is the screening test included in the guidelines of all programs. Although the target population and recommended frequency for the Pap test vary, the survey results show that there is considerable difficulty in achieving adequate coverage, guaranteeing test quality, and ensuring appropriate monitoring and timely treatment of women with precancerous lesions and invasive cancer. In addition, almost all countries have challenges with their information systems, which hinders monitoring of the process and the continuity of care. Finally, although nearly all the countries report some form of cancer registry, in most cases, the registries are very limited in scope.

The survey results reveal a clear need to:

- 1 Continue to lobby for the introduction of new technologies and ensure the financial sustainability of comprehensive cervical cancer programs;
- 2 Increase efforts to expand the coverage of screening programs and improve access to timely, appropriate treatment of cervical cancer and precancerous lesions; and
- 3 Establish information systems that permit systematic standardized monitoring of cervical cancer prevention and control programs.

INTRODUCTION

Cervical cancer is the second most common cancer, both in incidence and mortality, in women of all ages in Latin America (LA). It is currently estimated that 63,068 women are diagnosed with cervical cancer each year, and 29,222 die from this disease¹. This high burden of disease could be prevented with effective primary and secondary prevention strategies, combined with adequate diagnosis and treatment. Although many Latin American countries have used the Pap test as a screening technique for over 30 years, they have not attained a reduction in incidence and mortality comparable to that of developed countries. However, the limitations of screening programs in LA are not only attributed to the limitations of the Pap test, but also to the organization of health services and social, cultural and economic factors.

In this context, the Pan American Health Organization (PAHO) developed a *Regional Strategy and Plan of Action for Cervical Cancer Prevention and Control*² which was endorsed by the Ministers of Health of the Americas in the 2008 Directing Council. It aims to improve country capacity to implement effective cervical cancer prevention and control programs, generating synergies with related programs such as adolescent health, sexual and reproductive health, and immunization. As part of the activities to promote the implementation of the Regional Strategy, a Latin America Subregional Meeting on Cervical Cancer Prevention was held in Panama on 2-3 June 2010³. The purpose was to review scientific evidence on the use of new technologies for cervical cancer prevention, share successful experiences from Latin American countries, and plan collaborative activities to strengthen programs.

As preparation for the working groups at the Subregional Meeting, a survey was conducted to rapidly assess the situation of cervical cancer prevention and control programs in the Region. It aimed to gather information on the countries' response capacity from the perspective of the Ministry of Health cervical cancer program managers, with a focus on coverage, monitoring, and quality-of-care data to facilitate priority setting to improve program effectiveness and impact.

OBJECTIVES

1. Conduct a survey to obtain a rapid assessment of the situation of cervical cancer prevention and control programs in Latin America, from the perspective of Ministry of Health cervical cancer program managers. The survey included components on prevention, screening and early detection, diagnosis, treatment, palliative care, program management, and information systems.
2. Obtain a general assessment of the programs' situation that facilitates, as preparatory work for the Latin America Subregional Meeting on Cervical Cancer Prevention, the identification of short-, medium-, and long-term priorities and activities for improving program effectiveness and impact.

METHODOLOGY

The situation analysis was conducted via a six-section questionnaire (*Annex 1*) designed to compile basic information on:

- I) Demographic data;
- II) Disease burden;
- III) Components of the cervical cancer prevention and control program: general characteristics, human papillomavirus (HPV) vaccination, screening tests, and treatment of precancerous lesions, cancer treatment, and palliative care;
- IV) Monitoring;
- V) Financing;
- VI) General assessment of the situation.

The questionnaire and instructions for its administration were sent by email in April 2010 to Ministry of Health cervical cancer program managers in the 14 countries invited to participate in the Latin America Subregional Meeting on Cervical Cancer Prevention (*Table 1*).



Table 1. Countries invited to participate in the Latin America Subregional Meeting on Cervical Cancer Prevention, 2-3 June 2010, Panama.

South America	Argentina, Bolivia, Chile, Colombia, Paraguay, Peru
Mexico, Central America, and the Latin Caribbean	Mexico, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, Panama, Dominican Republic

RESULTS

Twelve country program managers completed the survey (*Table 1*). The main results, grouped according to the sections in the questionnaire, are described below.

1 Section I: Demographic data

All countries provided up-to-date demographic data from their national statistics and census institutes (Argentina, Bolivia, Chile, Colombia, Costa Rica, El Salvador, Guatemala, Nicaragua, Panama, and Paraguay) and from the PAHO Basic Health Indicators (Honduras and the Dominican Republic). Table 2 summarizes the most important demographic information necessary for adequate planning of cervical cancer prevention and control.

Women make up some 49.3% to 53.1% of the total population in the countries surveyed. Women aged 30-59, the target population group of strategies for secondary prevention of cervical cancer, make up 28.5% to 39.6% of the total female population, except in Bolivia, where only 17.5% of women belong to this age group, and Nicaragua, where they account for 52.7% of the total. Furthermore, the rural population ranges from 24.6% to 48.4% of the total population, except in Argentina and Chile where it makes up 10.5% and 13.4%, respectively.

Table 2 shows the number of girls aged 9-12 belonging to the 9-13 age group, which is the primary target group recommended by the World Health Organization (WHO) for HPV vaccination⁴. Finally, the survey asked about the percentage of girls who complete primary education, since schools are a potential venue for HPV vaccination. In this regard, the high dropout rate in countries such as El Salvador, Guatemala, and the Dominican Republic should be noted.

2 Section II: Burden of disease

Eight countries (Bolivia, Chile, Costa Rica, El Salvador, Guatemala, Nicaragua, Panama, and Paraguay) indicated that they have information on cervical cancer incidence. The information sources used were Globocan, a database created by the International Agency for Research on Cancer (IARC), and various articles in scientific journals. With regard to cervical cancer mortality, all countries provided information on this parameter, except Honduras and the Dominican Republic. Finally, six countries (Argentina, Bolivia, Chile, Costa Rica, Guatemala, and Panama) reported conducting studies on the prevalence of HPV infection (Table 3).

3 Section III: Components of the cervical cancer prevention and control program

3.1. General characteristics

All countries except Panama indicated in the survey that they do have a national cervical cancer prevention and control plan in effect. However, Panama has drafted a national cancer prevention and control plan, which was launched on 2 June 2010. As part of its implementation, a cervical cancer subcommittee has been formed. As Table 4 shows, according to the respondents, the programs are national in scope in all countries except El

Table 2. Relevant demographic data for planning cervical cancer programs, by country.

COUNTRIES (Year ^a)	DEMOGRAPHIC DATA					
	Total population	Women (%)	Total rural population ^b (%)	Number of women aged 30-59 (%)	Number of girls aged 9-12	Girls who complete primary education (%)
ARGENTINA (2001, 2007, 2008)	39,745,613	51	10.5	7,120,196 (35.1)	1,373,484	96.6
BOLIVIA (2010)	10,426,154	50.1	33.6	913,128 (17.5)	469,232	N/A
CHILE (2009)	17,094,270	50.5	13.4	3,422,589 (39.6)	505,867	97
COLOMBIA (2009)	44,977,758	50.6	24.6	8,145,180 (35.8)	1,737,616	100
COSTA RICA (2010)	7,670,881	49.3	32.3	859,897 (37.3)	160,076	N/A
EL SALVADOR (2008)	5,744,113	52.7	37.3	955,876 (31.6)	281,405	62.7
GUATEMALA (2010)	14,361,666	53.1	54	1,690,372 (22.9)	736,857	55
HONDURAS (2009)	7,876,602	49.9	48.4	866,433 (22)	N/A	N/A
NICARAGUA (2010)	5,815,540	50.5	N/A	1,549,177 (52.7)	329,228 ^c	N/A
PANAMÁ (2007)	3,339,781	49.6	30	589,794 (35.6)	154,836 ^c	95
PARAGUAY (2010)	6,451,122	49.5	N/A	952,223 (29.8)	279,178	N/A
DOMINICAN REPUBLIC (2007, 2008)	9,492,676	50.2	35.6	1,358,117 (28.5)	1,423,424 ^c	55.6

Notes: a: Year of demographic data; b: Total rural population, including men and women; c: Total number of girls aged 10-14 years; N/A: Not Available.

Table 3. Studies on the prevalence of HPV infection reported by survey respondents.

COUNTRY	HPV PREVALENCE STUDIES RESULTS
Argentina	Prevalence of 17.7% in a sample of 987 women from the general population; 4% with HPV-16, 2.6% with HPV-35, and 50% with multiple infections ⁵ .
Bolivia*	Series of 50 cases (unpublished)
Chile	Prevalence of 15.6% in a sample of 1,129 women from the general population ⁶ .
Costa Rica	Prevalence of 16% in a sample of 8,582 women aged 18-94 from the general population. Prevalence of oncogenic types was 7.6% and non-oncogenic types 6.7% ⁷ .
Guatemala*	HPV prevalence in housewives and sex workers in Escuintla – Guatemala. Cooperación Española, Instituto Catalán de Oncología y PNSR del MSPAS, 2007.
Panama	Prevalence of 10% in the general population ⁸ .

Notes: * Prevalence data could not be obtained from the references given by the respondents.

Salvador and Nicaragua, where it is being implemented in selected areas.

All respondents indicated that there are referral systems for women with abnormal findings who need follow-up. However, only half the countries (Argentina, Chile, Costa Rica, Nicaragua, Panama, and Paraguay) reported having a referral system both for treatment of precancerous lesions and invasive cancer and for access to palliative care. The remaining countries reported that they did not

include the provision of palliative care in their referral systems.

All respondents indicated that the country program has guidelines or protocols for cervical cancer prevention and control: screening, diagnosis, laboratory tests, treatment of precancerous lesions, and treatment of cancer. Table 5 summarizes the status of guidelines and protocols. Guidelines and protocols were lacking for diagnostic laboratory tests by 41.7% of respondents. Finally, the Pap smear was the only screening test included

Table 4. General characteristics of cervical cancer prevention and control programs, by country.

CERVICAL CANCER PREVENTION AND CONTROL PROGRAMS

COUNTRIES	Is there a national CC prevention and control plan?	Organization of CC prevention and control program	Is there a referral system?	Are there clinical practice guidelines or protocols? ^a	Screening tests included in the program
ARGENTINA	Yes	National, opportunistic	Yes (precancer, cancer, and palliative care)	Yes	Pap
BOLIVIA	Yes	National	Yes (precancer and cancer)	Yes	Pap and VIA
CHILE	Yes	National	Yes (precancer, cancer, and palliative care)	Yes (Diagnostic tests)	Pap
COLOMBIA	Yes	National	Yes (precancer and cancer)	Yes (Laboratory, Precancerous lesions and cancer treatment)	Pap
COSTA RICA	Yes	Opportunistic screening	Yes (precancer, cancer, and palliative care)	Yes (Diagnostic tests, Laboratory)	Pap
EL SALVADOR	Yes	Selected areas	Yes (precancer and cancer)	Yes (Laboratory)	Pap and VIA
GUATEMALA	Yes	National	Yes (precancer and cancer)	Yes (Laboratory)	Pap and VIA
HONDURAS	Yes	National	Yes (precancer and cancer)	Yes	Pap
NICARAGUA	Yes	Selected areas	Yes (precancer, cancer, and palliative care)	Yes (Laboratory)	Pap and VIA
PANAMA	No	National	Yes (precancer, cancer, and palliative care)	Yes	Pap
PARAGUAY	Yes	National	Yes (precancer, cancer, and palliative care)	Yes (Cancer treatment)	Pap
DOMINICAN REPUBLIC	Yes	National	Yes (precancer and cancer)	Yes (Cancer treatment)	Pap

Notes: CC: Cervical cancer; Pap: Pap test; VIA: Visual inspection with acetic acid; a: Cervical cancer prevention and control program components for which the country does not have a guideline or protocol are in parentheses.

in all cervical cancer prevention and control programs. Only the programs of Bolivia, El Salvador, Guatemala, and Nicaragua reported including visual inspection with acetic acid (VIA) screening in their standards. It is worthwhile to note that Peru also includes VIA screening in its national guidelines, and is being successfully used in certain areas of the country, although a survey was not completed by the Peru program manager.

3.2. Primary prevention: HPV vaccination

Panama and Mexico are the countries in LA that have added the HPV vaccine into their national public health programs (although this survey was not completed by Mexico). In Mexico, HPV vaccines are administered to girls aged 12-16 through the program “All women, a single prevention alternative,” run since 2008 by the Secretariat of Health in municipalities with a low Human Development Index (HDI). In Bolivia, the vaccine is being administered to a portion of the target population in a demonstration project. The Ministry of Health of Peru and the international nonprofit organization PATH have been conducting a pilot study of HPV vaccination in three regions of Peru. Finally, survey respondents from Argentina, Bolivia, El Salvador, Guatemala, and Honduras mentioned that their governments are interested in launching HPV vaccination programs.

3.3. Secondary prevention: screening tests and treatment of precancerous lesions

Secondary prevention using cytology

All the cervical cancer screening programs use Pap smear cytology as a screening test for a target population that corresponds to the age segment (approximately 25-65 years) when women are at greatest risk of developing precancerous lesions and invasive cancer. Costa Rica recommends screening in women aged >20. With regard to Pap smear frequency, most countries recommend screening every three years, following two consecutive negative annual tests (Table 6). El Salvador guidelines recommend testing every two years, while Costa Rica, Panama, Paraguay, and the Dominican Republic recommend yearly screening. With regard to Pap test coverage, it should be noted that it is very difficult in most countries to develop and maintain information systems that produce up-to-date standardized indicators that make it possible to connect the different levels of care. Furthermore, there is the additional challenge of collecting the results of Pap smears done by different providers, including private clinics and NGOs. According to the data provided by the respondents, Costa Rica, Bolivia, El Salvador, Nicaragua, and Panama have coverage rates ranging from 10% to 20%. The highest figures were reported by Honduras, Argentina, and Chile, with rates of 41.8%, 47%, and 68%, respectively. Para-

Table 5. Cervical cancer prevention and control guidelines or protocols, by country

PROGRAM COMPONENTS THAT HAVE CLINICAL PRACTICE GUIDELINES OR PROTOCOLS

COUNTRIES	Screening tests	Diagnostic tests	Laboratories	Treatment options for precancerous lesions	Cervical cancer treatment
ARGENTINA	Yes	Yes	Yes	-	-
BOLIVIA	Yes	Yes	Yes	Yes	Yes
CHILE	Yes	-	Yes	Yes	Yes
COLOMBIA	Yes	Yes	-	-	-
COSTA RICA	Yes	-	-	Yes	Yes
EL SALVADOR	Yes	Yes	-	Yes	Yes
GUATEMALA	Yes	Yes	-	Yes	Yes
HONDURAS	Yes	Yes	Yes	Yes	Yes
NICARAGUA	Yes	Yes	-	Yes	Yes
PANAMA	Yes	Yes	Yes	Yes	Yes
PARAGUAY	Yes	Yes	Yes	Yes	-
DOMINICAN REPUBLIC	Yes	Yes	Yes	Yes	-

guay reported 96.8% coverage, although it should be noted that these data refer to the results obtained in a group of 150,000 women representing 15.8% of the population subject to screening in the country. Respondents from Colombia, Guatemala, and the Dominican Republic did not provide coverage data in their questionnaire responses.

Secondary prevention using VIA

Only four of the 12 countries that completed the survey (Bolivia, El Salvador, Guatemala, and Nicaragua) reported using VIA as a screening test for secondary prevention of cervical cancer (Table 6). This test is aimed at a target population of women aged 25-64, with minor dif-

ferences among the four countries; it is done every three years, except in El Salvador, where it is recommended every two years. No VIA coverage data are available for any of the four countries. Finally, it should be mentioned that VIA is not a test in widespread use in these countries and is being used only in selected areas.

Treatment of precancerous lesions

Half of the countries surveyed (Argentina, Colombia, Costa Rica, Guatemala, Panama, and the Dominican Republic) do not have information on the percentage of women with precancerous lesions detected through cytology who receive treatment. In the rest, the figures range from less than 20% in Bolivia to 99.8% in Chile (Table 6).

Table 6. Components of secondary prevention through screening with Pap tests and VIA.

SECONDARY PREVENTION: SCREENING TESTS AND TREATMENT FOR PRECANCEROUS LESIONS

COUNTRIES	Target population age		Screening frequency		Current coverage (%)		Precancerous lesion treatment (%)	
	Pap test	VIA	Pap test	VIA	Pap test	VIA	Pap test	VIA
ARGENTINA	35-64	-	Every 3 years, following 2 consecutive negative years	-	47	-	N/A	-
BOLIVIA	25-64	25-64	Every 3 years, following 2 consecutive negative years	Every 3 years, following 2 consecutive negative years	12	N/A	<20	N/A
CHILE	25-64	-	Every 3 years	-	68	-	99.8	-
COLOMBIA	25-69	-	Every 3 years, following 2 consecutive negative years	-	N/A	-	N/A	-
COSTA RICA	>20	-	Annual	-	20	-	N/A	-
EL SALVADOR	30-59	Reproductive age in rural areas	Every 2 years	Every 2 years	17.8	N/A	68	100
GUATEMALA	25-54	25-54	Every 3 years	Every 3 years	N/A	N/A	N/A	60
HONDURAS	30-59	-	Every 3 years, following 2 consecutive negative years	-	41.84	-	94	-
NICARAGUA	25-64	30-50	Every 3 years, following 3 consecutive negative years	Every 3 years	10	N/A	30	80
PANAMA	25-59	-	Annual	-	13,1	N/A	N/A	-
PARAGUAY	25-49	-	Annual	-	96.8 ^a	-	64	-
DOMINICAN REPUBLIC	35-64	-	Annual	-	N/A	-	N/A	-

Notes: VIA: Visual inspection with acetic acid; N/A: Not available; a: Percentage of coverage refers to an initial target population of 150,000 that does not correspond to the total number of at-risk women likely to benefit from secondary cervical cancer prevention strategies.

The countries that use VIA as a screening test reported high percentages of treatment of precancerous lesions, ranging from 60% to 100% of women in whom abnormalities were found.

ing access to palliative care, only Chile, El Salvador, Nicaragua, and Panama reported data, all with rates of under 20%.

3.4. Treatment and palliative care

With regard to the countries' response capacity in terms of providing surgery, radiation therapy, and palliative care, it is striking that only four countries responded to this section of the survey. The respondents from El Salvador, Chile, and Costa Rica indicated that the percentage of women who receive surgical treatment is 85%, 36.8%, and 10%, respectively. Concerning the percentage of cases treated with radiation therapy, El Salvador, Nicaragua, and Panama reported figures of 85%, 70%, and 60%, respectively, while the Chilean responded that 3% of women receive radiation therapy exclusively and 50% radiation therapy/chemotherapy. Finally, concern-

4 Section IV: Monitoring

All respondents except Colombia, Costa Rica, El Salvador, Panama, and the Dominican Republic indicated that they conduct standardized evaluations of their cervical cancer programs at set intervals. Table 7 shows the date of the last evaluation available for each country. Furthermore, most countries, except Bolivia, El Salvador, Paraguay, and the Dominican Republic, have some form of cancer registry that is hospital- and/or population-based. Thus, Argentina has hospital and population-based registries in Concordia, Bahía Blanca, and Mendoza. Chile has two IARC-recognized population-based registries and a third that is applying for recognition. In

Table 7. Monitoring of cervical cancer prevention and control programs.

MONITORING

COUNTRIES	Program evaluation ^a	Cancer registry	Information system	Quality assurance system
ARGENTINA	Yes (2008)	Yes (Population-based and hospital)	Yes	Yes
BOLIVIA	Yes (2010)	No	No	No
CHILE	Yes (2008)	Yes (Population-based)	Yes	Yes
COLOMBIA	No	Yes (Population-based)	No	No
COSTA RICA	No	Yes (Population-based)	No	No
EL SALVADOR	No	No	No	No
GUATEMALA	Yes (2010)	Yes (Hospital)	No	No
HONDURAS	Yes (2009)	Yes (Hospital)	Yes	Yes
NICARAGUA	Yes (2010)	Yes (Hospital)	Yes	N/A
PANAMA	No	Yes (Population-based)	Yes	No
PARAGUAY	Yes (2010)	No	Yes	Yes
DOMINICAN REPUBLIC	No	No	Yes	No

Notes: a: Date of last available evaluation in parentheses.

addition, implementation of hospital registries as well as a national cervical and breast cancer registry are expected during 2010. Costa Rica and Panama each have a population-based registry under the country's Ministry of Health. In Cali, Colombia, a population-based registry has been kept since 1962. Finally, there are hospital registries in Guatemala (Institute of Oncology), Honduras (San Felipe General Hospital, Tegucigalpa), and Nicaragua (National Radiation Therapy Center).

In addition, seven countries have information systems that permit the registry of women with abnormal screening results to guarantee follow-up (Table 7).

Finally, only Chile, Argentina, Honduras, and Nicaragua reported having a complete quality assurance system for all stages of cytology screening: sampling, transport, processing, reading, and communication of results.

5 Section V: Funding

Argentina, Chile, Colombia, and Paraguay are the only countries that have a specific budget for the cervical can-

cer program. All respondents, except those from Chile, Colombia, and Costa Rica, reported that they collaborate with NGOs and international agencies in service delivery and the strengthening of cervical cancer prevention and control programs. Finally, women have cost-free access to screening, diagnosis, treatment, and palliative care services only in Argentina, Costa Rica, and Nicaragua. In all other countries, payment varies with the type of insurance (Table 8).

6 Section VI: General assessment of the situation

The final section of the survey consisted of a general assessment of the programs and their context (Table 9). Approximately one-third of respondents categorized the burden of disease in their countries as high and the rest as moderate. All countries coincided in pointing out the high or moderate need for improving health services for women and adolescent girls. Three countries (Chile, El Salvador, and Panama) stated that they have few opportunities to obtain external and collaborating organization support. However, the rest of the countries said that their opportunities for support are high or moderate.

Table 8. Funding for cervical cancer prevention and control programs.

FUNDING

COUNTRIES	Specific budget for CC program	Collaboration from NGOs/ international agencies	Out-of-pocket payment?			
			Screening	Diagnosis	Treatment	Palliative care
ARGENTINA	Yes	Yes	No	No	No	No
BOLIVIA	No	Yes	No	No	No	Yes (100%)
CHILE	Yes	No	No	Variable	Variable	Variable
COLOMBIA	Yes	No	No	No	Variable	Variable
COSTA RICA	No	No	No	No	No	No
EL SALVADOR	No	Yes	No	Partial	No	Yes (100%)
GUATEMALA	No	Yes	No	No	Yes (100%)	Yes (100%)
HONDURAS	No	Yes	Partial	Partial	Partial	N/A
NICARAGUA	No	Yes	No	No	No	No
PANAMA	No	Yes	Partial	Partial	Partial	Partial
PARAGUAY	Yes	Yes	No	No	Partial	Partial
DOMINICAN REPUBLIC	No	Yes	Partial	Partial	Partial	Partial

Notes: CC: Cervical Cancer; NGOs: Nongovernmental Organizations

Current country screening policies were considered good by the respondents from all countries except Costa Rica and Honduras, who described them as poor. Concerning the success of such policies, only Chile rated it as high. The rest of the countries described moderate or low levels of success. Respondents were also asked to rate current policies on adolescent immunization and assess their success. In this regard, the respondents from Costa Rica, Honduras, Nicaragua, Argentina, and Paraguay answered that they lack sufficient information to express an opinion. The rest of the countries described the policies as poor and marginally successful, except

Bolivia, which assessed its adolescent immunization policy as good.

A significant phenomenon is the large number of countries with high or at least moderate political interest in improving cancer control in general and cervical cancer control in particular. In this regard, practically all countries expressed a high-moderate possibility of government funding and strengthening of screening services in the coming years. In conclusion, concerning the introduction of the HPV vaccine, most countries indicated that the likelihood of funding in coming years is moderate or low.

Table 9. Respondents' general assessment of cervical cancer prevention and control programs.

GENERAL SITUATION ASSESSMENT *

	HIGH	MODERATE	LOW	UNKNOWN
Cervical cancer burden in the country	9 (75%)	3 (25%)		
Need for improving women's health services	10 (83.3%)	2 (16.7%)		
Need for improving adolescent health services	11 (91.7%)	1 (8.3%)		
Opportunities for receiving external and collaborating organization support	3 (25%)	6 (50%)	3 (25%)	
Rating of current screening policies ^a		10 (83.3%)	2 (16.7%)	
Success of current screening policies	1 (8.3%)	6 (50%)	5 (41.7%)	
Rating of current adolescent immunization policies ^a		1 (8.3%)	6 (50%)	5 (41.7%)
Success of current adolescent immunization policies			7 (58.3%)	5 (41.7%)
Political interest in improving cancer control	6 (50%)	5 (41.7%)	1 (8.3%)	
Political interest in improving cervical cancer control	5 (41.7%)	6 (50%)	1 (8.3%)	
Likelihood of government funding for strengthening screening services	5 (41.7%)	5 (41.7%)	2 (16.7%)	
Likelihood of government funding for introduction of HPV vaccine ^b		4 (36.4%)	3 (27.3%)	3 (27.3%)
Feasibility of strengthening screening programs in the coming years	8 (66.7%)	4 (33.3%)		
Feasibility of introducing HPV vaccination programs in the coming years ^b	1 (8.3%)	5 (41.7%)	4 (33.3%)	2 (16.7%)

Notes: *: Results are shown as the absolute number and percentage of countries that gave a positive answer, over a total of 12 except otherwise specified. a: For this item, response categories are very good, good, poor, and unknown; b: These two questions do not apply to Panama, which added HPV vaccination to the national immunization schedule in 2008; therefore the results for these items were calculated over a total of 11 and not 12 countries.

DISCUSSION

This survey was designed to provide a rapid assessment of the situation of cervical cancer programs in the countries participating at the Latin America Subregional Meeting on Cervical Cancer Prevention and Control³. The results show that most countries recognize the need for action that will have a positive impact on the high burden of disease. In this regard, all countries have an up-to-date national plan for cervical cancer prevention and control, and in most cases it is nationwide in scope.

Concerning the use of HPV vaccination for primary prevention of cervical cancer, only Panama and Mexico have added the vaccine to their national immunization programs, while certain countries, such as Bolivia and Peru, are collaborating with NGOs in the implementation of demonstration projects. Finally, most respondents considered that the likelihood that their government would add the vaccine to the national immunization program is moderate or low and that funding is the main obstacle.

The analysis of the organization of secondary cervical cancer prevention in the countries surveyed showed that the introduction of new screening technologies is in the very early stages and that the Pap test is the only test included in all programs. The target population for this type of screening and the recommended frequency are appropriate in almost every country surveyed. This information is relevant, since in limited-resource environments with multiple health needs, targeting interventions to the population at greatest risk makes it possible to maximize cost effectiveness.

Programs based exclusively on cytology pose three major challenges, especially in medium- or low-resource environments: a)



attaining adequate coverage of the target population; b) guaranteeing screening quality at all stages; and c) ensuring adequate follow-up of women with abnormal results through a referral system among levels that ensures the continuity of care⁹. The survey has made it possible to explore, from the participants' perspective, the situation in the countries with respect to these challenges. Thus, Pap test coverage rates were low in most countries that reported information on this parameter. Only some countries that have structured health systems and organized prevention programs with decades of experience, such as Chile, have achieved acceptable coverage with an impact on incidence and mortality rates¹⁰. Concerning coverage, it is important to point out the difficulty that most countries have in maintaining information systems that permit the systematic standardized collection of information that covers all stages of the screening process. This is compounded by the existence of multiple providers, among them NGOs and private clinics, which makes it even more difficult to obtain exhaustive information on coverage. Concerning quality assurance for cytology screening, only the respondents from Argentina, Chile, Honduras, and Paraguay reported having a quality assurance system that covers the entire process. In fact, 41.7% of countries surveyed reported a lack of guidelines or protocols for diagnostic laboratory procedures. Finally, concerning follow-up for women with abnormal Pap test results, the percentages reported are unacceptably low in countries such as Bolivia and Paraguay and half of the respondents did not have this information. These data reveal the organizational problems, in the context of weak health systems, of screening approach using a cytology-based model that requires multiple visits.

Analysis of the results shows that most of the countries surveyed are experiencing difficulties dealing with the challenges posed by prevention programs based exclusively on cytology. In resource-limited environments with low coverage, difficulties in providing follow-up for women, and deficient or incomplete quality control systems, based on the available scientific evidence, it is highly recommended that alternative cervical cancer screen-

ing technologies be used—for example, VIA or the HPV DNA screening test^{9,11}. In this regard, introducing such alternative technologies into country standards is vitally important since they provide the flexibility necessary for adapting prevention strategies to the characteristics of the women and their environment. However, according to the results reported by the respondents, only Bolivia, El Salvador, Guatemala, and Nicaragua provide VIA. The experience in these countries shows that the percentages of women screened through VIA who receive appropriate treatment for precancerous lesions are substantially higher than for those screened with cytology. This information is consistent with reports in the literature¹² and reveals that it is easier to achieve adequate follow-up when VIA is used, especially when combined with the see-and-treat strategy, which combines VIA and cryotherapy for screening and treatment of precancerous lesions in a single visit.

In short, there are successful experiences in the region with the introduction of new technologies for primary and secondary cervical cancer prevention, such as VIA and HPV vaccination. However, their widespread introduction is being hindered by costs and the lack of training and knowledge about them.

With regard to different cervical cancer treatment methods and access to palliative care, the survey showed that there is a dearth of information on the percentage of women who receive appropriate and timely surgical treatment, radiation therapy, and palliative care. Health system response capacity continues to be limited in many countries in the region, representing one of the principal challenges facing cancer programs.

Finally, although many countries reported the existence of some form of cancer registry, in most cases they are very limited hospital- or population-based registries. Most of the countries need to develop information systems that make it possible to monitor the entire process and guarantee appropriate follow-up of women with an abnormal screening test result, thereby facilitating the continuity of care and patient flow among levels.



CONCLUSIONS

The general assessment of the programs and their context shows that most countries recognize the existence of a high burden of disease and the need to improve health services for women and adolescent girls, while also noting the existence of the political will necessary for promoting the strengthening of cervical cancer programs.

Most countries have cervical cancer prevention programs based exclusively on cytology, but have considerable difficulty in attaining adequate coverage, guaranteeing test quality throughout the process, and achieving appropriate follow-up and timely treatment for women with precancerous lesions and invasive cancer.

The financial and structural hurdles to addressing the challenges posed by cytology, together with the clear scientific evidence endorsing new cervical cancer prevention technologies (VIA, HPV DNA screening test, and HPV vaccines), make it recommendable to introduce changes in the programs that will have an impact in terms of reducing cervical cancer incidence and mortality. In addition, coordinating efforts with health services is fundamental to strengthening service delivery at the primary and specialty care levels, improving access, and facilitating funding.

The large number of countries that reported moderate or high political interest in improving cervical cancer control and the fact that practically all countries have high or moderate opportunities for funding and strengthening screening and treatment services in the coming years imply that the region is at a turning point, where the appropriate conditions exist for having a positive impact on the burden of disease.

In summary, the results reveal the need to:

- 1 continue to lobby to achieve the introduction of new technologies and ensure the financial sustainability of the programs;
- 2 increase efforts to expand the coverage of screening programs and improve access to appropriate, timely treatment of cervical cancer and precancerous lesions; and
- 3 set up information systems that permit systematic standardized monitoring of cervical cancer prevention and control programs.

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SITUATION ANALYSIS

CERVICAL CANCER PREVENTION AND CONTROL PROGRAM

COUNTRY:

Contact information for the person responsible for completing the survey

Name:

Position:

Organization:

Address:

E-mail:

Telephone number:

Date of survey:

This survey has been prepared as a basic data collection instrument that can be used to gain knowledge about the situation of cervical cancer prevention and control programs in Latin America and the Caribbean. For this purpose, five sections have been considered: (I) Demographic data; (II) Burden of disease; (III) Cervical cancer prevention and control program; (IV) Information and monitoring systems; (V) Financing.

SECTION I

DEMOGRAPHIC DATA

1. Total population	
2. Total men	
3. Total women	
4. Urban population	
5. Rural population	
6. Number of women aged 30-59	
7. Number of girls aged 9	
8. Number of girls aged 10	
9. Number of girls aged 11	
10. Number of girls aged 12	
11. Percentage of girls that completed primary school education	

Note: Indicate year and source

SECTION II

BURDEN OF DISEASE

1. Incidence of cervical cancer	
2. Mortality associated with cervical cancer	
3. Number of cases per year	
4. Number of deaths per year	
5. Has any HPV infection prevalence study been done in your country?	
If so, provide reference:	

SECTION III

CERVICAL CANCER PREVENTION AND CONTROL PROGRAMS

1. GENERAL CHARACTERISTICS

- 1.1. Is there a national plan for the prevention and control of cervical cancer? Yes No

If so, indicate the date it was prepared, the period in which it is in effect, and its availability:

- 1.2. Mark the description that is most appropriate for the cervical cancer prevention and control program in your country Organized at the national level Organized in selected areas Opportunistic screening
- 1.3. Is there a referral system for women that require Treatment of precancerous lesions Treatment of cervical cancer Palliative care
- 1.4. Are there clinical practice guides or protocols about the following aspects of cervical cancer prevention and control? Screening tests Diagnostic tests Laboratories Treatment options for precancerous lesions Treatment of cervical cancer
- 1.5. Which screening tests are included in the cervical cancer prevention and control program? Pap smear VIA HPV DNA test

Remarks:

2. PRIMARY PREVENTION: HPV VACCINATION

- 2.1. Is there an HPV vaccination program financed by the government? Yes No
- 2.2. Are there any nongovernmental agencies or organizations that have begun demonstration projects for introducing the HPV vaccine in a region in the country? Yes No

If so, specify:

- 2.3. If there is no national HPV vaccination program, do you intend to begin a program? Yes No

If so, indicate the needs identified for introducing the vaccine:

3. SECONDARY PREVENTION: SCREENING TESTS AND TREATMENT OF PRECANCEROUS LESIONS

Which screening test is used in the country?

SCREENING TEST	PAP SMEAR	VIA	HPV DNA TEST
3.1. What is the age of the target population group?			
3.2. How often is screening recommended?			
3.3. How much screening coverage is there?*	Coverage: <input type="text"/>	Coverage: <input type="text"/>	Coverage: <input type="text"/>
What is the program's objective?	Objective: <input type="text"/>	Objective: <input type="text"/>	Objective: <input type="text"/>
3.4. What percentage of women with pre-cancerous lesions receive treatment?			

Remarks:

4. TREATMENT AND PALLIATIVE CARE

4.1. What percentage of women diagnosed with cervical cancer receives surgical treatment?	<input type="text"/>
4.2. What percentage of women diagnosed with cancer receives radiation therapy?	<input type="text"/>
4.3. What percentage of women with cancer agrees to palliative care?	<input type="text"/>

Remarks:

SECTION IV

MONITORING

- 1.1. Is evaluation of the cervical cancer program (e.g., coverage, impact) performed with a standardized method and at established intervals? Yes No

If so, indicate the date of the last evaluation report and the agency in charge of preparing it:

- 1.2. Is there a cancer registry? Yes No

If so, specify whether it is a hospital- or population-based registry and the location:

- 1.3. Is there an information system that provides for registry of women with abnormal screening results in order to ensure follow-up? Yes No

- 1.4. Is there a system that guarantees the quality of cytology during all stages of the screening test (i.e., sampling, transportation, processing, interpretation, reporting results) and the maximum time for each step? Yes No

Remarks:

SECTION V

FINANCING

- 1.1. Is there a specific budget for the cervical cancer prevention and control program? Yes No

- 1.2. Is the collaboration of international and local agencies/organizations available in order to strengthen the cervical cancer prevention and control program? Yes No

If so, list these agencies/organizations and the areas in which they work:

- 1.3. Should women pay out-of-pocket for the cervical cancer screening test? Full payment Partial payment Free-of-charge

- 1.4. If the screening test result is abnormal, should women pay for the diagnostic tests (i.e., colposcopy, biopsy)? Full payment Partial payment Free-of-charge

- 1.5. Must women pay out-of-pocket for treatment of cervical cancer? Full payment Partial payment Free-of-charge

- 1.6. Must women pay out-of-pocket for access to palliative care? Full payment Partial payment Free-of-charge

Remarks:

SECTION VI

GENERAL EVALUATION OF THE SITUATION

After analysis of the different components of the cervical cancer prevention and control program has been completed in the previous sections, you are requested to do a general evaluation of the situation. Complete the following questions by marking one of the 4 options:

H: High; **M:** Moderate; **L:** Low; **U:** Unknown

VS: Very satisfactory; **S:** Satisfactory; **UN:** Unsatisfactory; **U:** Unknown

1.1.	The burden of cervical cancer in your country is considered to be:	<input type="checkbox"/> H	<input type="checkbox"/> M	<input type="checkbox"/> L	<input type="checkbox"/> U
1.2.	The need to improve the health services provided to women is:	<input type="checkbox"/> H	<input type="checkbox"/> M	<input type="checkbox"/> L	<input type="checkbox"/> U
1.3.	The need to improve the health services provided to adolescents is:	<input type="checkbox"/> H	<input type="checkbox"/> M	<input type="checkbox"/> L	<input type="checkbox"/> U
1.4.	The possibility of receiving external support and collaboration by organizations is:	<input type="checkbox"/> H	<input type="checkbox"/> M	<input type="checkbox"/> L	<input type="checkbox"/> U
1.5.	How would you rate the current screening policies?	<input type="checkbox"/> VS	<input type="checkbox"/> S	<input type="checkbox"/> UN	<input type="checkbox"/> U
1.6.	The success of the current screening policies is:	<input type="checkbox"/> H	<input type="checkbox"/> M	<input type="checkbox"/> L	<input type="checkbox"/> U
1.7.	How would you rate the current adolescent immunization policies?	<input type="checkbox"/> VS	<input type="checkbox"/> S	<input type="checkbox"/> UN	<input type="checkbox"/> U
1.8.	The success of the current adolescent immunization policies is:	<input type="checkbox"/> H	<input type="checkbox"/> M	<input type="checkbox"/> L	<input type="checkbox"/> U
1.9.	The political interest in improving cancer control is considered to be:	<input type="checkbox"/> H	<input type="checkbox"/> M	<input type="checkbox"/> L	<input type="checkbox"/> U
1.10.	The political interest in improving cervical cancer control is considered to be:	<input type="checkbox"/> H	<input type="checkbox"/> M	<input type="checkbox"/> L	<input type="checkbox"/> U
1.11.	The possibility that the government will finance strengthening of the screening services is:	<input type="checkbox"/> H	<input type="checkbox"/> M	<input type="checkbox"/> L	<input type="checkbox"/> U
1.12.	The possibility that the government will finance introduction of the HPV vaccine is:	<input type="checkbox"/> H	<input type="checkbox"/> M	<input type="checkbox"/> L	<input type="checkbox"/> U
1.13.	The feasibility of strengthening the screening programs in the future is:	<input type="checkbox"/> H	<input type="checkbox"/> M	<input type="checkbox"/> L	<input type="checkbox"/> U
1.14.	The feasibility of introducing HPV vaccination programs in the future is:	<input type="checkbox"/> H	<input type="checkbox"/> M	<input type="checkbox"/> L	<input type="checkbox"/> U



CERVICAL CANCER
PREVENTION IN LATIN AMERICA
AND THE CARIBBEAN