

Situation analysis

STRATEGIES FOR CERVICAL CANCER SCREENING WITH VISUAL INSPECTION WITH ACETIC ACID AND TREATMENT WITH CRYOTHERAPY IN LATIN AMERICA AND THE CARIBBEAN



PREVENCIÓN DEL
CÁNCER CERVICOUTERINO
EN AMÉRICA LATINA Y EL CARIBE



**Pan American
Health
Organization**

Regional Office of the
World Health Organization

UNite
in the fight against
NCDs

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PREVENTION IN LATIN AMERICA
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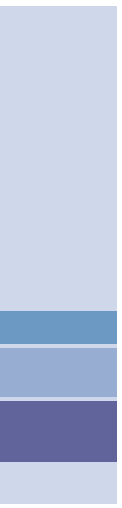
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Executive summary

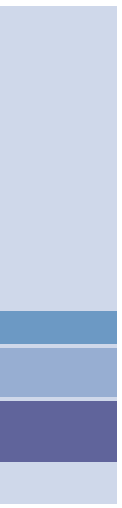
This report reviews the results of a survey administered to professional managers of cervical cancer programs and participants in the PAHO Workshop on VIA and Cryotherapy held in Guatemala City in June 2011. The survey was designed to identify the challenges and opportunities resulting from the introduction of visual inspection with acetic acid (VIA) as a screening tool, coupled with the “screen and treat” approach, as well as to find out how these services are being organized within public health cervical cancer prevention and control programs.

The results showed that all the countries use VIA and the “screen and treat” approach within the framework of their cervical cancer programs. They also agree on the advantages of these techniques over other forms of screening and treatment, and they intend to scale up their delivery of these services. Furthermore, most of the countries have incorporated VIA and the “screen and treat” approach into their national regulations. These specify the target population, the recommended frequency of screening, the follow-up protocol for women who have an abnormal result, and the professional profile and type of health facility authorized to provide these services.

In all the countries, the Ministry of Health is responsible for training VIA and cryotherapy providers. Although the training courses offered are fairly similar in terms of their structure, content, and evaluation methods, there remains a need to strengthen the accreditation systems and continuing education programs that ensure the competency of providers after their initial training. On the other hand, the results indicate that a sizable percentage of the providers who received training have not had the opportunity to implement the skills they acquired, which suggests the need for better planning prior to offering the courses.

Even though all of the countries have a quality control mechanism in place and a list of specific indicators for the evaluation and monitoring of VIA and cryotherapy, there is still need to establish and/or strengthen information systems which will evaluate the programs’ progress and impact, identify gaps, and make it possible to initiate corrective measures when necessary.

Ultimately, the experiences and challenges identified in this report will help to facilitate cooperation among countries and foster the support being offered by international organizations in the Region.



1. Introduction

Cervical cancer is the second most common malignant neoplasm with regards to both incidence and mortality, in women of all ages in Latin America and the Caribbean (LAC). It is currently estimated that 67,801 women in LAC are diagnosed with cervical cancer each year, and there are 31,467 reported deaths from this disease. The highest age-adjusted incidence rates are seen in Jamaica, Guyana, Nicaragua, Honduras, and El Salvador, and the lowest, in Chile, Trinidad and Tobago, Uruguay, and Costa Rica.¹

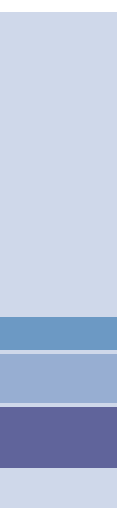
This high burden of disease poses a serious public health problem, yet it could be prevented with effective primary and secondary prevention strategies, combined with adequate diagnostic and therapeutic measures. Although many LAC countries have used cytology as a screening technique for more than 30 years, they have not observed a reduction in incidence and mortality rates comparable to those observed in developed countries. This failure of prevention programs is due not only to the limitations of cytology as a screening test, but also to the organization of health services and certain sociocultural factors. In this context, the availability of alternative approaches, such as visual inspection with acetic acid (VIA) and treatment of precancerous lesions with cryotherapy are very instrumental. These offer new opportunities to improve the impact of prevention efforts, especially in resource-limited settings.

VIA involves examining the cervix with the naked eye and a bright light after applying diluted acetic acid (3%-5%). When anomalous cervical and uterine tissue comes into contact with the acetic acid solution, it temporarily takes on a whitish color ("acetowhite"), making it possible for the health provider to know whether the result is positive (abnormal) or negative (normal). This is a simple, effective, low-cost test that can be performed by first-level health personnel after a relatively brief training. Moreover, the infrastructure requirements are minimal and the supplies needed are readily accessible in all areas. The great advantage of

VIA is that the results of the examination are immediate and therefore the "screen and treat" approach can be applied at the first level of care. "Screen and treat" means administering cryotherapy to positive women with eligible lesions during the same session as their screening and diagnosis. Despite these many advantages, however, VIA does have a limitation: interpretation of the result is subjective and depends on the precision of the person performing the test. Thus, as with other screening tests, training and supervision of providers, quality control, evaluation, and monitoring are vital to programs that use VIA to minimize performance variability.²

Because of the potential that these strategies offer to improve program effectiveness and impact, the *Regional Strategy, and Plan of Action for Cervical Cancer Prevention and Control*,³ developed by the Pan American Health Organization (PAHO) and endorsed by the Ministries of Health of the Region of the Americas in 2008, recommends incorporation of the single-visit VIA-based approach ("screen and treat" approach) in settings where resources are not available to offer quality cytological screening and adequate follow-up of women with precancerous lesions. This recommendation is based on a broad and solid body of scientific evidence. Indeed, a recent systematic review⁴ revealed an estimated sensitivity level of 80% (Confidence interval (CI) 95%, 79-82%) and an estimated specificity level of 92% (CI 95%, 91-92%) for the detection of grade 2 cervical intraepithelial neoplasia (CIN) using VIA. These estimates resulted from the analysis of 26 studies where all the women screened underwent a reference test (colposcopy) regardless of whether their VIA result was positive or negative. The use of this methodology, in which verification bias is minimized, reinforces the robustness of the results, which showed similar or higher sensitivity and specificity levels for VIA than for cytology.⁵

Encouraged by the recommendation contained in the Regional Strategy, and challenged by the need to



improve the impact of the cervical cancer programs, a number of countries in LAC have introduced VIA plus cryotherapy treatment in recent years and several international organizations are providing technical assistance in this area. The experience to date with these techniques has shown that there is room for growth regarding training, quality control, and evaluation and monitoring. In the meantime, the growing number of countries seeking to introduce these techniques in the near future increases the need to set regional standards for these fundamental aspects—namely, training, quality control, monitoring, and evaluation.

Accordingly, PAHO, in collaboration with the Ministry of Health of Guatemala, convened the *PAHO Workshop on Cervical Cancer Prevention Strategies: Visual Inspection with Acetic Acid (VIA) Screening and Cryotherapy Treatment*, held in Guatemala City on 1–2 June 2011. This meeting took place as part of the framework of activities for implementing the Regional Strategy and Plan of Action for the Cervical Cancer Prevention and Control, following a Latin American

meeting that considered new technologies for cervical cancer prevention, held in Panama in June 2010.⁶ The purpose of this workshop, the content and results of which have been published in a separate report,⁷ was to share experiences and establish the best way to ensure quality control and to set standards for the performance of VIA and cryotherapy treatment.

As preparation for the workshop, a survey was conducted to review the experience thus far with VIA and the “screen and treat” approach in the Region. The intention was to learn, from the perspective of program managers and clinical leaders in the field, how these services are being introduced and organized in public health cervical cancer programs, with special emphasis on training, quality control, evaluation, and monitoring. The present report reviews the main results and conclusions drawn from the responses to this survey.

2. Methodology

To review the countries' experience with VIA and the "see and treat" strategy, a two-part questionnaire was developed (*Annex 1*). The first part contained questions regarding the challenges and opportunities presented by these techniques, as well as the individual countries' expectations regarding the PAHO Workshop. The second part was designed to collect information on VIA and the "see and treat" strategy under the following headings:

- I) *Regulations and standards*
- II) *Health care activities*
- III) *Human resources and training*
- IV) *Material resources*
- V) *Quality control, evaluation, and monitoring*
- VI) *Technical assistance and cooperation*

The questionnaire and instructions for administering it were distributed by e-mail to cervical cancer program managers in the Ministries of Health through the corresponding focal points in the PAHO/WHO Representative Offices in the 10 countries participating in the Workshop which have introduced VIA and the "screen and treat" approach or hope to do so in the immediate future. The survey was completed by key informants from the Ministry of Health in collaboration with the focal point of the corresponding country. *Table 1* summarizes the profile of the professionals surveyed in each country.

Table 1. Countries participating in the PAHO Workshop on Cervical Cancer Prevention Strategies: Visual Inspection with Acetic Acid (VIA) Screening and Cryotherapy Treatment (Guatemala, 1–2 June 2011) and profile of the professionals who responded to the survey.

COUNTRIES	Profile of the respondents
Bolivia	» Lizeth O. Soraide Iriarte, Head, National Sexual and Reproductive Health Program
Colombia	» Omaira I. Roldan Sánchez, Specialized Officer, General Directorate of Public Health, Ministry of Social Protection » Carolina Weisner Ceballos, Coordinator, Planning and Program Management Group, National Cancer Institute
El Salvador	» Guildo C. Larrave Rivas, Medical-technical collaborator, Sexual and Reproductive Health Unit
Honduras	» Rosa María Duarte, Head of National Cancer Program
Guatemala	» Erick J. Álvarez Rodas, Head of Cancer component, National Reproductive Health Program
Guyana	» Narine Singh, Director of Regional Health Services, Ministry of Health
Nicaragua	» Ana Cecilia Silva Ramírez, National Coordinator, Cancer Component » Álvaro Fidel García Gómez, Assistant Director for Training
Paraguay	» Gladys Aquino Orrego, Head of Cervical Cancer Prevention Program
Peru	» H Carlos Santos Ortiz, Training directos, National Institute of Neoplastic Diseases, Peru
Suriname	» Lily Soekhlal-Olmtak, Gynecologist-obstetrician, Ministry of Health » Antoon Grungberg, Representative of Reproductive Health Program, Ministry of Health

3. Results

Responses were received by all of the 10 countries invited to participate in the PAHO Workshop (Table 1). They were all filled out extensively and in detail, based on the information available in each country. Paraguay and Honduras were not able to answer the second part of the questionnaire because they have yet not introduced VIA and the “screen and treat” approach into their cervical cancer prevention and control programs, although they expect to do so in the near future.

The main results are reported below, separated by sections of the survey. The results reported here correspond to the responses provided by the program managers and professionals who completed the survey and in no way reflect the position, policies, or recommendations of PAHO.

3.1. 1. USE OF VIA AND THE “SCREEN AND TREAT” APPROACH

As shown in Table 2, all the countries surveyed use VIA and the “screen and treat” approach in their public health programs for cervical cancer prevention and control, although Nicaragua, Peru, and Colombia only offer them in the form of demonstration projects.

VIA is the visual inspection method used in all the countries except Colombia, where VIA is followed by visual inspection with Lugol’s iodine (VILI). With regard to the scope of service and its delivery, visual inspection

is implemented at the national level in Guatemala, Suriname, and Guyana, while the rest of the countries offer this form of screening in selected areas that have limited or no access to cytology.

All the countries use the “screen and treat” approach in the same manner as VIA except Suriname, where it is only applied in the interior of the country, after biopsy for histological confirmation of the lesions.

Table 2. Use of visual inspection with acetic acid (VIA) and the “screen and treat” approach in the countries surveyed

USE	Visual inspection with acetic acid	“Screen and treat” approach
As part of the cervical cancer program at the national level	Guatemala, Suriname, Guyana	Guatemala, Guyana
As part of the cervical cancer program in selected areas, with limited or no access to cytology	El Salvador, Bolivia	El Salvador, Bolivia, Suriname
As part of the cervical cancer program in selected areas, with limited or no access to cytology and in demonstration projects	Nicaragua, Peru, Colombia ^a	Nicaragua, Peru, Colombia ^a
Nongovernmental organizations (NGOs)	Honduras, Nicaragua	Honduras, Nicaragua
Possible incorporation under the cervical cancer program in the near future	Honduras, Paraguay	Honduras, Nicaragua

Notes: NGO: Nongovernmental organization; a: In Colombia, the VIA screening strategy is followed by visual inspection with Lugol’s iodine (VILI).

3.2. ADVANTAGES, LIMITATIONS, AND CHALLENGES ASSOCIATED WITH VIA AND THE “SCREEN AND TREAT” APPROACH

3.2.1. Advantages

Table 3 summarizes the advantages identified by the participating countries with regard to the use of VIA and the “screen and treat” approach. The advantages cited by most of the respondents were: relative simplicity, low cost, immediate availability of results, and possibility of administering treatment with cryotherapy at the same consultation. Furthermore, the “screen and treat” approach was perceived to have the added advantages of reducing the likelihood of losing patients in follow-up and making it easier for more women to have access to treatment. This is because it gets around the economic, geographical, and family-related barriers that often arise when screening is based on performing cytology. Another important advantage of these techniques is that they reduce women’s anxiety and increase their satisfaction with the health services.

3.2.2. Limitations and challenges

With regard to the challenges and limitations presented by these procedures (Table 4), the majority of respondents indicated that the aspects that are most difficult and demanding are those related to training, continuing education of the providers, adequate quality control, evaluation, and monitoring. They were also several countries that saw challenges in getting their authorities to commit to the institutionalization of VIA and the “screen and treat” approach, including its incorporation into the cervical cancer program and related regulations. In the case of Colombia, this difficulty has been addressed by preparing guidelines and evidence-based recommendations and entering into an agreement with the Ministry of Social Protection.

With regard to the “screen and treat” approach, some of the main barriers identified were resistance on the part of gynecologists, pathologists, and cytologists and difficulties in obtaining the equipment needed to administer cryotherapy. Some of initiatives implemented to overcome these obstacles have included a research project to show the effectiveness of visual inspection with the participation of gynecologists associated with the academy (Colombia), initiation of dialogue at the national level to raise awareness about the advantages of these procedures (Guyana), and the creation of micro-networks to ensure the availability of cryotherapy equipment in strategically located reference centers (Peru).

3.2.3. Plans for expanding visual inspection with acetic acid and the “screen and treat” approach

All the countries except Suriname indicated that they plan to expand their use of both visual inspection screening and the “screen and treat” approach. Suriname only intends to increase their delivery of VIA services. The majority of countries plan to increase their number of trained providers and to acquire the necessary equipment for implementing these procedures in the service portfolio of additional centers. In Nicaragua this process will be strengthened by the results of the evaluation of the ongoing demonstration projects, Peru will include VIA and the “screen and treat” approach in the national cancer program that will be launched in 2012 in 10 priority regions where access to services is difficult and socioeconomic conditions are poor, with intent to ultimately extend this form of screening and treatment to all 24 of the country’s regions. Guyana has included cervical cancer screening

in the essential package of health services guaranteed to the public by all second- and third-level health establishments. This action is expected to contribute to the expansion of VIA screening and cryotherapy

treatment. Finally, starting in 2010, Colombia made agreements with the health insurance plans and the department-level health directorates to establish new service delivery centers in five selected regions.

Table 3. Advantages of visual inspection with acetic acid (VIA) and the “screen and treat” approach, according to the countries surveyed

ADVANTAGES
VISUAL INSPECTION WITH ACETIC ACID
» Relatively simple and inexpensive.
» Immediate application reduces losses in follow-up.
» At least as sensitive as cytology, if not more so.
» Easy to implement at the first level of care.
» Enables broader coverage.
» Can be performed by a broad range of professionals after a brief training.
» Increases women’s level of satisfaction.
» Requires minimum infrastructure.
“SCREEN AND TREAT” APPROACH
» Immediate treatment reduces losses in follow-up.
» Makes it possible for more women to receive timely treatment of precancerous lesions (women with economic or geographical hardships or family-related issues regarding consent to evaluation with colposcopy).
» Reduced cost to the program.
» Can be performed by personnel at the first level of care.
» Reduces women’s anxiety by offering them treatment at the same consultation, thus increasing satisfaction and confidence in the health services.
» Improved compliance with post-treatment follow-up.
» Relatively simple.
» Effective alternative with high pathological correlation and low rate of over-treatment.

Table 4. Challenges and limitations involved in visual inspection with acetic acid (VIA) and the “screen and treat” approach, according to the countries surveyed

CHALLENGES AND LIMITATIONS^a
VISUAL INSPECTION WITH ACETIC ACID
» Training and continuing education of providers.
» Adequate quality control, monitoring, and evaluation.
» Institutionalization of VIA: <ul style="list-style-type: none"> • Incorporation of VIA into existing regulations • Implementation of VIA in the cervical cancer program <i>– Development of evidence-based guidelines with national participation, as well as recommendations that include visual inspection techniques</i>
» Resistance on the part of gynecologists, pathologists, and cytologists. <ul style="list-style-type: none"> <i>– Research project to evaluate the sensitivity and specificity of visual inspection and cytology techniques with the participation of gynecologists associated with the academy.</i> <i>– Communication and education, including discussions in the media regarding the advantages of VIA over cytology.</i>
» Migration of the professionals trained, difficulties working with the procedures, other obligations, limited commitment to the program.
» Achievement of adequate coverage.
» Establishment of an information system that includes adequate follow-up of the women.
» VIA is not replicable, does not provide a written confirmation of the result.
» Convincing the general public that VIA is as effective as cytology.
» Reluctance of women to be attended by nursing personnel, since these services have traditionally been provided by physicians. <ul style="list-style-type: none"> <i>– Public education campaigns launched by the Ministry.</i>
“SCREEN AND TREAT” APPROACH
» Availability of needed material resources (liquid nitrogen, cryotherapy guns). <ul style="list-style-type: none"> <i>– Creation of partnerships for providing equipment.</i>
» Resistance on the part of gynecologists, pathologists, and cytologists.
» Institutionalization of the “screen and treat” approach: <ul style="list-style-type: none"> • Incorporate the “screen and treat” approach into existing regulations • Get authorities to commit to training providers and procuring equipment <i>– Development of a technical assistance agreement with the Ministry of Social Protection to implement the techniques in five regions of the country with access to health services.</i>
» High cost of cryotherapy equipment. <ul style="list-style-type: none"> <i>– Creation of micro-networks so that a group of health posts that use VIA can rely on a health center with cryotherapy capability.</i>
» Training and continuing education of providers.
» Risk that cancer cases fail to be diagnosed . <ul style="list-style-type: none"> <i>– See-diagnose-treat strategy.</i>

Nota: a: Italics indicate some of the strategies suggested by the countries to address the challenges identified.

3.4. REGULATIONS AND STANDARDS

3.4.1. VIA and the “screen and treat” approach in national standards for cervical cancer prevention and control

VIA and the “screen and treat” approach are part of the standards placed into effect for cervical cancer prevention and control in all the countries except in Colombia and Suriname (*Table 5*). In the case of Colombia, although VIA-VILI and the “screen and treat” approach are not covered by any national regulations, the Ministry of Social Protection and the National Cancer Institute (INC) have prepared a manual on cervical cancer detection and the “screen and treat” approach that addresses the use of these procedures. In addition, a technical assistance agreement has been reached under which the Ministry authorizes the use of VIA-VILI and the “screen and treat” approach by trained professional nurses at first-level care centers in five selected regions of the country. Suriname, has begun the process of drafting national regulations that will include VIA only.

All of the countries surveyed contributed information regarding the target group, recommended frequency of screening, and type of personnel and health facility authorized to perform VIA and the “see and treat” strategy (*Table 5*). The target group for these procedures is women between 25 and 59 years of age, with minor variations between the countries. For example, Peru and El Salvador recommend focusing screening efforts on women between 30 and 49, while Guyana recommends screening women between 25 to 49 years, with priority given those aged 35 to 39 in places where it is likely that the women will only be screened once in their lifetime. With regard to frequency, Colombia, Guatemala, Bolivia, and Peru

recommend performing VIA every three years; Guyana, every five years; and Suriname, every two years. The remainder of the countries surveyed did not provide specific information.

The profile of the professionals authorized to provide VIA services was similar in all of the countries: it included gynecologists, general practitioners, family doctors, and nursing personnel. In El Salvador, only gynecologists are authorized to perform the procedures indicated; in Guatemala, health promoters are also allowed; and in Guyana, midwives and medex are also authorized. For the most part, the professionals authorized to perform “screen and treat” are the same as those authorized to perform VIA in the countries surveyed, except Peru and Suriname, where nursing personnel cannot administer cryotherapy; Nicaragua, where nursing personnel can only provide this treatment after one year of supervision; and Guatemala, where it can be provided by certified health care providers (*Table 5*).

As for the type of health facility, the regulations and standards allow for VIA and the “see and treat” strategy to be implemented in first- and second-level health facilities. Colombia and Peru are the only exceptions, where they are only offered in the first level. Suriname only offers the “see and treat” strategy once a biopsy has been taken in primary care services, and only in the interior of the country. In Guyana, the establishments currently authorized to use VIA and the “see and treat” strategy include all the regional hospitals, several district hospitals, and some health centers, and these health facilities have to meet all of the criteria specified in the *Evaluation of the Preparation of a Health Center* before they can start providing the services.

ⁱ Medex corresponds to a professional category similar to physician assistants who typically provide services at health centers in the country's interior. They are usually nurses or registered midwives who undergo an additional two years of training in clinical medicine and public health. Once trained, they: (a) carry out prevention and health promotion activities in the community; (b) provide prenatal, postnatal, and pediatric care; (c) diagnose and manage certain pathologies and refer cases to the supervising physician, hospital, or emergency services if needed; and (d) attend normal deliveries and refer cases that involve any kind of complication to a hospital.

Table 5. Visual inspection with acetic acid (VIA) and the “screen and treat” approach incorporated in existing national standards for cervical cancer prevention and control, according to responses from the professionals surveyed.

COUNTRY	Included in national regulations?		Target group/ frequency of screening	Authorized personnel		Type of establishment	
	VIA	“Screen and treat”		VIA	“Screen and treat”	VIA	“Screen and treat”
Bolivia	Yes	Yes	25-59 / 1-1-3	G, GP, professional nurses	Same as for VIA	1 st ,y 2 nd level	Same as for VIA
Colombia	No	No	25-50 /every 3 years	G and professional nurses	Same as for VIA	1 st level	Same as for VIA
El Salvador	Yes	Yes	30-49 / NE	Gynecologists	Same as for VIA	1 st ,y 2 nd level	Same as for VIA
Guatemala	Yes	Yes	25-54 /every 3 years; HIV+ and immunosuppressed women and sex workers every 1-2 years	G, GP, nurses, nursing auxiliaries	Certified health care providers ^a	1 st ,y 2 nd level	Same as for VIA
Guyana	Yes	Yes	25-49 and all HIV+ / every 5 years; at least once in a lifetime for those aged 35-39	G, GP, professional midwives, professional nurses, medex	Same as for VIA	1 st ,y 2 nd level, hospitals and private clinics	Same as for VIA
Nicaragua	Yes	Yes	30-50 / NE	G, GP, nurses	G, GP, nurses after 1 year of supervision	1 st level and some 2 nd level	Same as for VIA
Peru	Yes	Yes	30-49 /every 3 years	G, midwives, family physicians, GP, nurses	G, GP, family physicians	1 st level (health centers and health posts)	Same as for VIA
Suriname	No (en desarrollo)	No	23-55 / every 2 years	G, selected GP and trained nurses	G, trained GP who work in the interior	1 st and 2 nd level (staffed by trained personnel)	1 st level in the interior when staffed with trained personnel and 2 nd level

Notes: VIA- visual inspection with acetic acid; NS: not specified; HIV: Human Immunodeficiency Virus; G: Gynecologists; GP: General practitioners; a: Health care providers include gynecologists, general practitioners, nurses and nursing auxiliaries.

3.4.2. Protocol for implementing VIA and the “screen and treat” approach

All the countries indicated using an algorithm for implementing VIA and following women who have a positive result. Most of them recommend treatment with cryotherapy during the same visit or referring the patient for a colposcopic evaluation based on the characteristics of the lesions identified. However, Suriname and Guyana reported a different policy for the management of women with abnormal results. In the case of Suriname, all VIA-positive women are referred for colposcopy except in the interior of the country, where cryotherapy is administered during the same visit after a biopsy is taken. In Guyana, in places where colposcopy services are not available, the lesions, depending on their characteristics, are treated with either cryotherapy or the loop electrosurgical excision procedure (LEEP).

Table 6 shows each country's recommendations for following women with a VIA-positive result after they have been treated with cryotherapy. The choice of tests varies. Some countries, like El Salvador, perform cytology even when the initial screening test used was VIA. Guatemala uses further VIA monitoring for woman treated with cryotherapy under the “screen and treat” approach and cytology when the patient was referred to a clinic for colposcopy after the initial VIA. Even though this country's protocol states that VIA-positive women with eligible lesions should be treated with cryotherapy during the same consultation (the “screen and treat” approach), in the absence of personnel certified to perform the treatment, or the proper equipment, the patients are referred to a clinic for colposcopy.

Table 6. Follow-up of VIA-positive women treated with cryotherapy, by country.

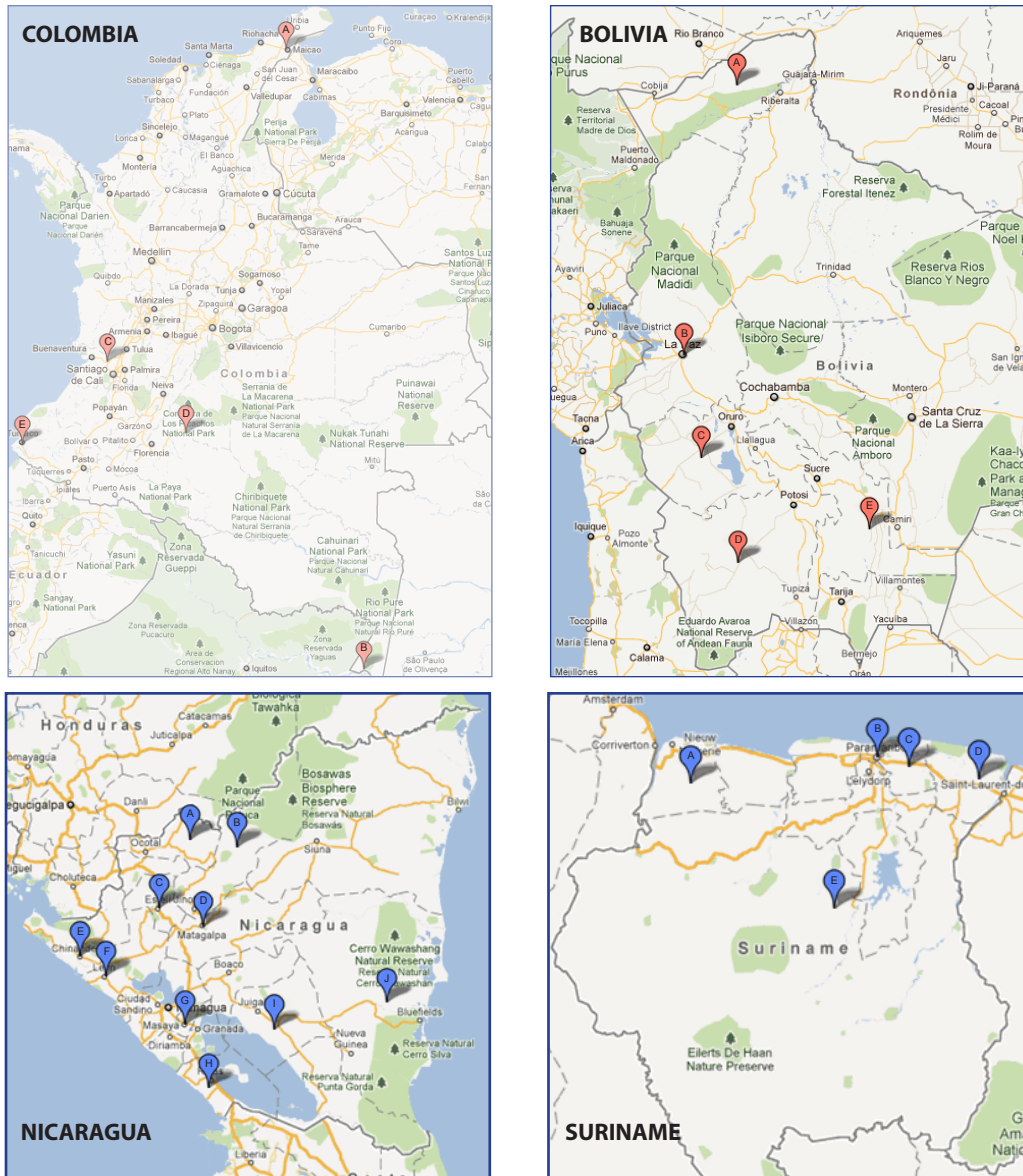
COUNTRIES	ADVANTAGES
Bolivia	» NS.
Colombia	» Checkup with VIA-VILI at 1 year. If the result is negative, screening every 3 years.
El Salvador	» Cytology at 6 months.
Guatemala	» Checkup with VIA or cytology a after 1 month; 3-4 checkups during year 1 post-treatment; 2 checkups during year 2. If everything is normal, return to protocol of screening every 3 years.
Guyana	» VIA at 1 year. If the result is negative, VIA at 3 years and every 5 years thereafter.
Nicaragua	» Checkup at 1 month, 6 months, 1 year, and 2 years post-treatment.
Peru	» Checkup at 1 month (not recorded) and 1 year (recorded).
Suriname	» Review at 6 months with VIA and cytology of endocervix.

Notes: NS: Not specified; VIA: Visual inspection with acetic acid; VIA-VILI: Visual inspection with acetic acid followed by visual inspection with Lugol's iodine; a: If the woman was treated with cryotherapy under the “see and treat” strategy, follow-up is done with VIA; if she was referred to an early detection clinic, follow-up is done with cytology.

3.5. HEALTH CARE ACTIVITIES

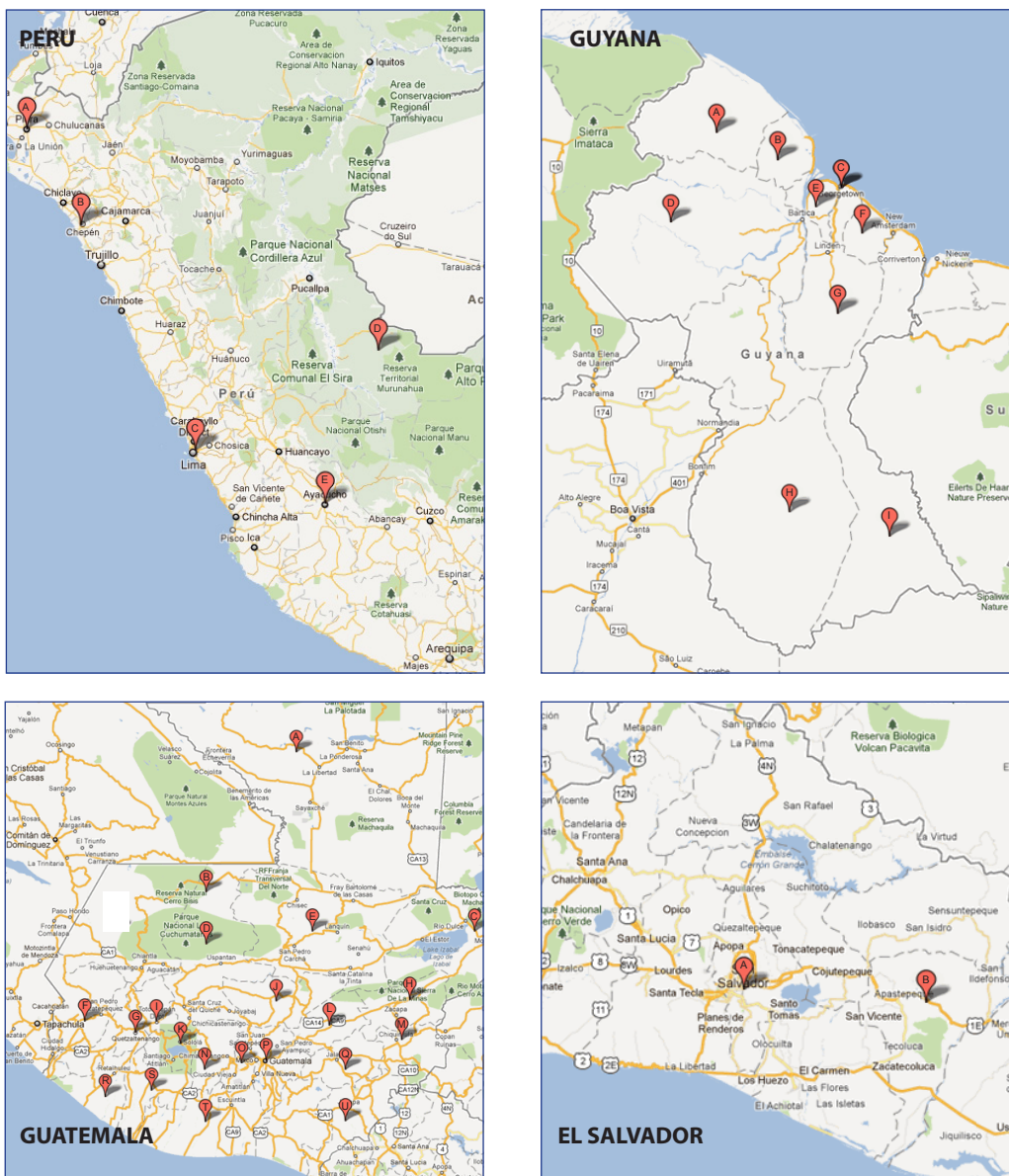
Figure 1 summarizes the information reported by respondents regarding the geographical location and number of health care facilities providing VIA and cryotherapy services.

Figure 1. Geographical distribution of VIA and cryotherapy services.



- Bolivia:** A: Pando; B: La Paz; C: Oruro; D: Potosi; E: Chuquisaca
Colombia: A: Guajira; B: Amazonas; C: Valle del Cauca; D: Mariño; D: Caquetá; E: Tumaco
Suriname: A: Nickerie; B: Paramaribo; C: Commewijne; D: Marowijne; D: Interior
Nicaragua: A: Nueva Segovia; B: Jinotega; C: Esteli; D: Matagalpa; D: Caquetá; E: Chinandega; F: León; G: Masaya; H: Rivas; I: Chontales; J: RAAS

Figure 1. Geographical distribution of VIA and cryotherapy services.



Peru: A: Piura; B: Guadalupe; C: San Juan de Lurigancho; D: Ucuyali; E: Ayacucho.

Guyana: A: Region 1 (Mabasruma Regional Hospital); B: Region 2 (Suddie Regional Hospital, Oscar Joseph District); C: Region 4 (Georgetown Public Hospital, National Treatment and Health Centre; Campberville Health Centre; Dorothy Baily Health Centre; St Joseph Mercy Hospital); D: Region 7 (Bartica District Hospital); E: Region 3 (West Demerara Health Centre, Leonara Diagnostic Centre); F: Region 5 (Mahaicony Regional Hospital); G: Region 10 (Linden Regional Hospital, Upper Demerara District Hospital); H: Region 9 (Lethem District Hospital); I: Region 6 (New Amsterdam Regional Hospital, Skeledon District Hospital)).

Guatemala: A: Petén; B: Huehuetenango; C: Izabal; D: Quiché; E: Alta Verapaz; F: San Marcos; G: Quetzaltenango; H: Zapaca; I: Totonicapán; J: Baja Verapaz; K: Sololá; L: El Progreso; M: Chiquimulá; N: Chimaltenango; O: Sacatepéquez; P: Ciudad de Guatemala; Q: Jalapa; R: Retalhuleu; S: Suchitepéquez; T: Escuintla; U: Jutiapa.

El Salvador: A: Central Region (La Libertad, Chalatenango, Cuscatlán, San Salvador); B: Paracentral Region (La Paz, Cabañas, San Vicente)

3.5. HUMAN RESOURCES AND TRAINING

3.5.1. Characteristics of the VIA and cryotherapy training courses

Table 7 summarizes the main characteristics of the training courses on VIA and cryotherapy that are given in the Region. In Guatemala, El Salvador, and Nicaragua, the Ministry of Health covers this training as part of its own training program, although it also receives support from collaborating organizations. In the rest of the countries, the training is provided by the Ministry of Health through partner organizations. Suriname was the only country that reported that it did not currently have a system for training providers.

All the courses incorporate both theoretical and practical content. They vary in duration from 8 to 30 hours of theory and 15 to 100 hours of practice. Most of them give priority to practical content, with the exception of Bolivia (30 hours of theory versus 18 of practice) and Colombia (20 hours of theory versus 15 of practice). The makeup of the courses depends on the methodology, whether it is active learning or competency-based, and/or whether it uses anatomical models.

The profile of participants varied depending on the pertinent regulations in each country, ranging from gynecologists to nursing and medex personnel. All the courses had a teacher-student ratio of between from 1-3 and 1-5, except Guatemala, where there may be from 25 to 35 students and 2 to 5 trainers in each course.

Evaluation is usually both theoretical and practical, using knowledge-testing, evaluation of images, and assessment of the competencies acquired. Some countries reported that they give daily quizzes during the training process, while others test at the beginning, half-way through, and at the end of the course. Suriname and El Salvador did not specify the evaluation mechanism used.

3.5.2. Accreditation system

Colombia, Guatemala, and Guyana are the only countries that have an accreditation system associated with their training courses. In Colombia, a center of excellence has been established through a strategic partnership between the National Cancer Institute and the Health Sciences University Foundation (FUCS). FUCS, which is responsible for accreditation of the trained providers, is a private reference center which has the capacity to offer integrated management of precancerous lesions of the cervix and conducts higher education activities in the health sectors. It also has the advantage of being a university with the infrastructure and human resources necessary to provide the training and continuing education required by these techniques. The FUCS/INC team was trained by the Latin American School for Cervical Cancer Control at the National Institute of Neoplastic Diseases (INEN) in Peru. In Guatemala, providers are accredited by a joint group that includes San Carlos National University, Mariano Gálvez University (a private institution), the College of Physicians and Surgeons, and the Guatemala Association of Gynecology and Obstetrics (AGOG). In Guyana, the Ministry of Health is responsible for granting accreditation. Finally, although Peru does not have an official accreditation system, the INEN grants credits to providers based on the number of procedures performed after conclusion of the training and the subsequent supervisory visit.

3.5.3. Continuing education

Colombia, Guatemala, and Nicaragua were the only countries that indicated they have a continuing education mechanism available for the providers. In Guatemala the certified teams themselves hold annual refresher events at the local level in each health area. Nicaragua re-trains the providers through follow-up visits scheduled at 3, 6, and 12 months. Colombia is

Table 7. Characteristics of the training course for providers of visual inspection with acetic acid (VIA) and cryotherapy, by country.

	Bolivia	Colombia	El Salvador	Guyana	Guatemala	Nicaragua	Peru	Suriname ^a
Who gives the training	Latin American Cervical Cancer School (INEN)	INC/Health Sciences University Foundation	Ministry of Health, Basic Health	Ministry of Health (Georgetown Public Hospital Corporation), JHP/IEGO	PNSR technical adviser, PAHO consultant on SRH, certified reproductive health facilitators	Ministry of Health	Latin American Cervical Cancer School (INEN)	NS
Title / duration in days	Clinical training course on cervical cancer prevention using VIA and cryotherapy/ NS	Course on secondary cervical cancer prevention using VIA–VILI and cryotherapy / NS	Course on VIA and cryotherapy/ 5 days	Cervical cancer screening (VIA/ cryotherapy)—single-visit approach, 7 days, 14 sessions	Training course on standardized screening and VIA-cryotherapy techniques /4-5 days	Workshop on application of the “screen and treat” approach / NS	Course on secondary cervical cancer prevention using VIA and cryotherapy/ 6 days, 12 sessions	NS/NS
Hours of theory	30	20	40 theoretical and practical	20	16	12	8	10
Hours of practice	18	15	-	29	20-22	28	37	100
Profile participating	Gynecologists, general practitioners, professional nurses	Professional nurses	NS	General practitioners, professional nurses, midwives, medex	General practitioners, specialized physicians, nurses	General practitioners, specialized physicians, nurses	General practitioners, gynecologists, midwives, family physicians, nurses	NS
No of students per course	21	15	NS	8-10	25-35	6-10	20	1
No of trainers per course	3	5	NS	3-4	2-5	1 from MINSAL and 2-3 International	3	1
Methodology	Practical & theoretical	Active learning	NS	Competency-based learning, behavior modification, use of anatomical models and other the learning aids	Andragogic, interactive	Lectures, seminars, active reading of slides, practices with patients	Competency-based, behavior modification, humanistic	NS
Evaluation	Daily quizzes	Test at beginning, halfway through, and at end of course	NS	Test and evaluation with images halfway through, provision of the service (practice); checklist on counseling and clinical competencies	Theoretical, visual, and clinical (provider – user ratio)	Pretest, post-test, during practice	Test of theory, evaluation of competencies and performance	NS

Notes: VIA: visual inspection with acetic acid; VILI: visual inspection with Lugol's iodine; INEN: National Institute of Neoplastic Diseases (Peru); INC: National Cancer Institute (Colombia); PNSR: National Sexual and Reproductive Health Program; SRH: sexual and reproductive health; NS: not specified; a: Characteristics of the training course for VIA and cryotherapy given by the Medical Mission, which is responsible for delivering primary care services in the country's interior as part of a demonstration project funded by the Netherlands Embassy.

the only country that has developed a virtual course for the training and continuing evaluation of providers. Finally, although Guyana does not currently have a mechanism in place for refresher events, the providers are evaluated by the trainers every 3 months using a “supervisory support tool.” These supervisory visits not only make it possible to ensure that the providers maintain an adequate level of competence but they also provide feedback about whether the training was sufficient.

3.5.4. Characteristics of train-the-trainer courses

Colombia, Guatemala, Guyana, and Peru are the only countries that reported having a curriculum for training their trainers. *Table 8* summarizes the main characteristics of these courses in terms of duration, profile of the participants, methodology, and evaluation.

3.5.5. Human resources

Training of providers

Table 9 shows the professionals trained in VIA and the “see and treat” strategy in each country by professional category. In all the countries except in Guatemala and Suriname the personnel are trained in both procedures. There tends to be a larger proportion of physicians (gynecologists and general practitioners) compared with other professional categories. The exception is Guatemala, where 80% of the VIA providers and 60% of those trained in the “see and treat” strategy are nurses, and Colombia, where only nursing professionals have been trained since the program started in 2010. Guatemala is the only country that has trained health promoters to perform VIA.

Only Bolivia, Colombia, Guatemala, Nicaragua, and Peru provided data on information, education, and communication activities for the prevention and

control of cervical cancer.

Activities and continuing education for trained providers

Table 10 shows the number of providers trained in VIA and cryotherapy that are currently active, those who have never provided these services, and the reasons why they have not done so. In most of the countries only about half the professionals initially trained are currently active. The main reasons provided as explanation for this situation include the other responsibilities, administrative and managerial duties, and migration or transfer. Lack of adequate cryotherapy equipment and problems in the gas supply were also cited as reasons why the trained professionals were not able to implement the competencies they had acquired.

Another issue is the small percentage of trained personnel who receive refresher courses. Colombia is the only country that has a virtual continuing education course, which is mandated for all professionals to take every month. Finally, all the countries indicated that they plan to train new providers in the next year or two.

Table 8. Characteristics of the train-the-trainers course, by country.

	Colombia	Guatemala	Guyana	Peru
Organization that provides the training:	Latin American School for Cervical Cancer Control (INEN)	MSPAS	JHPIEGO	Latin American School for Cervical Cancer Control (INEN)
Title of course	Training the trainers in visual inspection techniques	Course to train the trainers in standardized screening and VIA-cryotherapy techniques / (3 days)	Train the trainers course	Course to train the trainers in VIA and cryotherapy
Hours of theory	12	8	NE	8.30
Hours of practice	9	12	NE	12.30
Profile participating	Gynecologists, oncological gynecologist, nurses, public health physician	Not specified	Physicians and medex	Experts in VIA and cryotherapy with the skills and desire to be trainers
No. of students per course	6	10-20	8	8-10
No. of trainers per course	2	5	2	2-3
Methodology	Active learning	Andragogic, interactive	Active learning	Adult learning
Evaluation	Pre- and post-testing	Theoretical and visual	-Quiz before and during the course -Evaluation during the course and practice	Knowledge, performance

Notes: INEN: National Institute of Neoplastic Diseases (Peru); MSPAS: Ministry of Public Health and Social Assistance; VIA: visual inspection with acetic acid; NS: not specified.

Table 9. Providers trained in visual inspection with acetic acid and cryotherapy, by professional category and country (absolute numbers and percentages of total professionals trained per country).

País	Technique	IVAA/Crioterapia					Total	IEC
		GYNs	GPs	NP	HPs	Other		
Bolivia (2010)	VIA & Cryo	12 (43%)	9 (32%)	6 (21%)	-	1 Oncologist (3,5%)	28 (100%)	36
Colombia (2010)	VIA & Cryo	-	-	15 (100%)	-	-	15 (100%)	15
El Salvador (NE)	VIA & Cryo	6 (9,5%)	36 (57%)	21 (33%)	-	-	63 (100%)	NR
Guatemala (2008)	VIA	30 (2,5%)	190 (16%)	964 ^a (80%)	19 (1,6%)	8 midwives (0,7%)	1211 (100%)	1211
	VIA & Cryo	22 (8,7%)	63 (25%)	166 ^a (66%)	-	1 midwife (0,4%)	252 (100%)	
Guyana (2009) ^b	VIA & Cryo	7 (13%)	22 (41,5%)	18 ^c (34%)	-	6 Medex (11%)	53 (100%)	-
Nicaragua (2008)	VIA & Cryo	12 (25%)	18 (38%)	17 (36%)	-	-	47 (100%)	18
Peru (2008)	VIA & Cryo	13 (10%)	48 (38%)	2 (1,6%)	-	63 midwives(50%)	126 (100%)	113
	VIA	-	1 (17%)	5 (83%)	-	-	6 (100%)	-
Suriname (2008)	VIA	-	1 (100%)	-	-	-	1 (100%)	-
	VIA & Cryo	-	1 (100%)	-	-	-	1 (100%)	-

Notes: VIA: Visual inspection with acetic acid; IEC: information, education, and communication; GYNs: gynecologists; GPs: general practitioners; NP: nursing personnel; HPs: health promoters; Cryo: cryotherapy; NR: No response; a: The category "nursing personnel" includes nursing auxiliaries and professional nurses; b: Professionals trained since launch of the program in January 2009; c: Includes midwives and registered nurses.

Table 10. Level of activity of the trained providers, professionals who have received refresher courses, and projected training, by country

Country	Total providers trained	Providers currently active	Providers never active	Reasons why not active	Providers with refresher training	Projected training 1-2 years
Bolivia	28	11 (39%)	17 (61%)	- Managerial position - Cryotherapy equipment not available	N/A	27
Colombia	15	9 (60%)	6 (40%)	- Did not pass the evaluation - Administrative duties - Residents in the capital responsible for the training	9 (60%)	20
El Salvador	63	NR	NR	NR	N/A	16-20
Guatemala	1211 VIA, 252 "screen & treat"	50-85 certified	2%	-Administrative and managerial duties	55 en 2010	725 (25 for each the 29 DEAs)
Guyana	53	31 (58%)	4 (8%)	-Migration -Promotion to administrative position -Resignation -Transfer	N/A	8
Nicaragua	47	23 (49%)	NE	-Staff turnover -Problems with gas supply	23 (49%)	80
Peru	126	77 (61%)	33 (26%)	-Other responsibilities -Lack of support -Migration -Termination of the contract	4 (3%)	200
Suriname	7	26	NR	NR	N/A	20-25

Notes: NS: not specified; NR: No response; N/A: not applicable because these countries do not have a continuing education program; DSA: Health Area Directorate.

3.6. MATERIAL RESOURCES

All the countries provided the technical specifications and types of cryotherapy equipment used to provide the services (Table 11). With regard to the type of gas, Bolivia, and El Salvador indicated that they use carbon dioxide, Guyana and Nicaragua use nitrous oxide, and the rest of the countries stated that they use both. Guyana was the only country that reported problems with the gas supply, which they noted is sometimes contaminated with dust particles that can jam the gun.

As for equipment maintenance, Colombia, Peru, and El Salvador they were the only countries that indicated they have an organized system in place. In Bolivia, the manufacturer assumes responsibility for maintenance for a limited time, while in Guyana and Nicaragua the providers themselves are responsible for maintenance.

Table 11. Resources material for the provision of cryotherapy and costs of the services, by countries.

Country	Cryotherapy equipment	Type of gas	Supply problems?	Equipment (Units)	Maintenance system?
Bolivia	NS ^a	CO ₂	No	ND	None; only provided by the supplier for a limited time
Colombia	-Leisegang TM LM 900	CO ₂	No	8	Yes
El Salvador	NS ^b	N ₂ O & CO ₂	No	22	In place. Each hospital is responsible for the equipment
Guatemala	-Wallach Model LI100 N2O -MICROEM 00183 CO2 Brazil	N ₂ O & CO ₂	None, but supplier is based in Guatemala City and requires 72 h to fill the cylinders	13	None
Guyana	-MedGyn TM cryo units	N ₂ O	Sometimes the quality of N ₂ O is inadequate because of contamination with steam and dust particles that jam the gun	20	None, but the suppliers do minimum maintenance (e.g., changing the filters)
Nicaragua	-Leisengan -Wallach	N ₂ O	None, but there have been problems with the only company that supplies the donated tanks	27	Checked prior to use in the hospital. In the interior, the SILAIS have a maintenance team
Peru	-Medgyn / ClubMed SAC -Leisegang /Ckm Asociados SAC	N ₂ O & CO ₂	CO ₂ ampliamente disponible en el país, pero el N ₂ O es de disponibilidad difícil en provincias	20	In place, private
Suriname	-ERBE Elektromedizin GmbH	N ₂ O & CO ₂	NR	4	None, but the equipment is always checked prior to use

Notas: NS: not specified; NA: not available; N₂O: nitrous oxide; CO₂: carbon dioxide; NA: not available.; a: As a result of requirements related to the supplies and equipment procurement process, the manufacturer and distributor may vary. The technical specifications state that the equipment must be ergonomic; capable of being used with both N2O or CO2; operable at temperatures to -65 C°; and have a stainless steel valve, an automatic drip trap with an integral cycle timer, a 60-micron filter, integrated regulators, a 0-140 kg/cm2 manometer, and a pressure protection system; b: Ministry of Health regulations do not allow specification of brands. The technical specifications for the cryotherapy equipment state that the apparatus must be a closed system and have interchangeable nozzles, a pressure gauge adaptable to 50-lb cylinder, a safety valve to protect operator from escaping nitrous oxide gas, and a 40-70 kg/cm² gas pressure range.

3.7. QUALITY CONTROL, EVALUATION, AND MONITORING

All the countries except for Bolivia indicated that they have a mechanism for assuring the quality assurance of their VIA and cryotherapy services (Table 12). In Colombia, quality control regulations require both monitoring visits by a trained gynecologist and a virtual course that the providers have to take every month. Peru and Nicaragua require supervisory visits to the centers—every month in the case of Peru, plus training every six months, which includes evaluation

and accreditation of the providers. Guyana has set up a Standards-based Management and Recognition (SMB-R) system to guarantee the quality of services. SBM-R involves four steps: (a) setting standards of performance; (b) implementing the standards in the health facilities that provide VIA and cryotherapy services; (c) measuring progress by comparing actual and expected performance; and (d) recognizing achievements and progress. This system makes it

possible for the supervisor to identify gaps, establish causes, implement corrective measures, and measure progress once again. The supervisor uses a checklist with standard and criteria that have to be met. When a health facility is experiencing problems providing up to standard services, it receives supervision and support to overcome the associated obstacles.

All the countries reported having specific indicators for VIA and cryotherapy, although only El Salvador, Guyana, Nicaragua, and Peru have an information system. Most of the countries specified the regular required time frames for evaluation and monitoring of these services. They also reported a plan to prepare a report with the results to be used to provide feedback to the national level, measure progress, and institute any necessary corrective measures (*Table 12*).

Although the information systems in Colombia and Guatemala are still under development, these countries outlined how they expect to conduct their evaluation and monitoring activities. In Colombia, each department will prepare a database with records on the women participating in the program. This information will be consolidated and analyzed on a monthly basis in order to monitor the progress of activities, discover any possible problems, and take the necessary corrective actions. In addition, a proposal has been developed to use the following four indicators for monitoring and evaluation of the “see and treat” strategy: (1) targets for implementing the visual inspection technique; (2) percentage of positive results; (3) coverage with cryotherapy treatment; and (4) any complications secondary to cryotherapy. For each of these indicators, the following have been defined: sources of information, person responsible, and acceptable performance thresholds. Guatemala, for its part, is putting the final touches on its oncology data collection sheet (cervix and breast) so that each reproductive health team in the health areas will be able to collect the data.

Finally, *Table 13* gives a list of basic VIA and cryotherapy indicators and shows the countries that use them for evaluation and monitoring of their services. It should be noted that only half the countries (Guatemala, Nicaragua, Colombia and Peru) indicated that they collect information on coverage, and fewer than half of them keep records on comparison with colposcopy, detection of precancerous lesions, or rate of cure after the administration of cryotherapy.

Table 12. Quality control, evaluation, and monitoring of visual inspection with acetic acid (VIA) and the “see and treat” strategy, by country.

Country	How is quality assured?	Person responsible for quality?	Indicators defined?	Information system?	Frequency of evaluation and monitoring	Preparation of report?	Use made of the report?
Bolivia	In progress	No	Yes	In progress	In progress	In progress	In progress
Colombia	-Virtual quality control strategy -Monitoring visit by trained gynecologist	Yes	Yes	In progress	Monthly	Yes	Providers with less than 85% on virtual exam have to repeat the In-person training
El Salvador	Monitoring and supervision from regional and central level	No	Yes	Yes	Semiannual	Yes	Submission of observations from the regional level to the site for adoption of appropriate measures
Guatemala	Training maintained and replicable with certification of competencies	Yes	Yes	In progress	Annual	Yes	Analysis of PNSR components in annual workshop on strategic lines
Guyana	Standards-based Management and Recognition system	Yes	Yes	Yes	Monthly collection of information; quarterly report	Yes	The results used to identify gaps, identify their causes, implement corrective remedies, and measure progress
Nicaragua	Visits to the centers and on-site evaluation	Yes	Yes	Yes (annual)	Monthly for first 3 months, bimonthly for next 6 months, then annually	N/S	Results reported to the health directorates; occasional presentations in health forums
Peru	Supervisory visits at 1 month and 6 months	No	Yes	Yes	Quarterly	Yes	Monthly meetings to evaluate progress under the project and attainment of targets set by the health facility
Suriname	In progress	No	No	In progress	In progress	No	In progress

Note: PNSR: National Reproductive Health Program

Table 13. Indicators used for evaluating and monitoring visual inspection with acetic acid (VIA) and cryotherapy services, by country.

País	Coverage	VIA positivity	Conformity with colposcopy	Rate of detection of precancerous lesions	Conformity with the treatment	Rate of cure after cryotherapy
Bolivia		●				
Colombia	●	●			●	
El Salvador		●				
Guatemala	●	●	●	●	●	●
Guyana		●			●	●
Nicaragua	●	●	●	●	●	●
Peru	●		●	●	●	
Suriname		●				

Note: VIA: Visual inspection with acetic acid

3.8. TECHNICAL COOPERATION

Table 14 shows how partner organizations can contribute to the introduction or strengthening of VIA and the “see and treat” strategy in the countries surveyed. Most of the countries pointed out that all the suggested options for cooperation were needed and welcome, including support for training, supervision,

quality control, evaluation, and monitoring. Table 15 shows which organizations are currently active in each country surveyed, the year of establishment, and what type of cooperation is being provided.

Table 14. How partner organizations can help introduce visual inspection with acetic acid (VIA) and the “see and treat” strategy in the countries of the Region.

	BOL	COL	ELS	GUA	GUY	NIC	PER	SUR
Contribute to the development of a curriculum for training in VIA/“screen & treat” in the country	●		●	●	●	●		●
Support training for providers of VIA/“screen & treat”	●		●	●	●	●	●	●
Contribute to the processes of supervision/continuing education for the providers already trained	●		●	●	●	●	●	●
Support the design of a quality control, monitoring, and evaluation system for VIA/“screen & treat”	●	●	●	●	●	●	●	●
Provide tools and materials for the implementation of VIA/“screen & treat”	●	●	●	●	●	●		●

Notas: VIA: visual inspection with acetic acid; BOL: Bolivia; COL: Colombia; ELS: El Salvador; GUA: Guatemala; GUY: Guyana; NIC: Nicaragua; PER: Peru; SUR: Suriname.

Table 15. Technical assistance and cooperation provided by partner organizations in the countries of the Region.

COUNTRY	ORGANIZATION	TYPE OF COOPERATION/YEAR STARTED
Bolivia	PAHO	Technical and financial cooperation/2010
	CDC	Technical and financial cooperation/2010
Colombia	PATH	Training through the Latin American Cervical Cancer School, INEN, Peru/ 2010
El Salvador	Basic Health	Training, provision of cryotherapy equipment, training of health promoters in cervical cancer prevention/2006
	Faith in practice, John Hopkins	Training workshops/2008
Guatemala	Una voz contra el cáncer	Training workshops/2006
	PAHO	Technical and financial support/2010 Participation in training courses/2010 Support for the preparation of technical guidelines and standards/2010
	Jhpiego	Technical cooperation/2008 Purchase of equipment and supplies for the loop electrosurgical excision procedure (LEEP)
Guyana	PAHO	Production of communication and educational materials
	Rotary Club of Guyana	Production of communication and educational materials
	PATH	Research study on a population of 5,000 women/2009
Nicaragua	Samaritanos	Training and equipment in 2 municipalities/2007
	Cultivando la Salud	Training and equipment in 3 municipalities/2008
	ISLAS	Equipment in 1 municipality/2010
	PINCC (Prevention International: No Cervical Cancer)	Equipment in 2 municipalities/2010
	Hope	Pending
	UNFPA	Equipment for 25 clinics/2008
	PAHO	2011
	OIEA	Training and equipment/2 nd half of 2011
Peru	PATH	Technical cooperation/2008
	Jhpiego	Technical cooperation/2009

Notes: PAHO: Pan American Health Organization; CDC: United States Centers for Disease Control and Prevention; UNFPA: United Nations Population Fund.

4. Discussion

The present survey was designed to explore the challenges and opportunities presented with the introduction of VIA screening and the “screen and treat” approach and to determine how these services are being organized as part of public health programs for cervical cancer prevention and control. For this purpose, a survey was distributed as preparatory work for the *PAHO Workshop on Cervical Cancer Prevention Strategies: Visual Inspection with Acetic Acid (VIA) Screening and Cryotherapy Treatment*⁷ (Guatemala City, 1–2 June 2011). This workshop was attended by countries in the Region that have already introduced these approaches (Bolivia, Colombia, El Salvador, Guatemala, Guyana, Nicaragua, Peru, and Suriname) or hope to do so in the near future (Honduras and Paraguay).

The results show that all these countries are using VIA and the “screen and treat” approach within the framework of their cervical cancer programs; they have found that these techniques offer advantages over other forms of screening and treatment; and they intend to scale up the provision of these services.

Indeed, the simplicity, low cost, immediate results, and possibility of providing cryotherapy treatment at the same consultation (“screen and treat”) were seen as significant advantages by most of the respondents. The fact that VIA can be performed by a wide range of first-level health professionals after a relatively brief and simple training makes it possible to expand screening services even in remote and low-income areas. This increase in coverage, together with the possibility of treating a larger percentage of precancerous lesions using the “screen and treat” approach were cited by the participants as an opportunity to improve the impact of their programs.

However, challenges were also identified, chief among them the issues associated with adequate training, supervision, quality control, evaluation, and monitoring. Also cited were the limited availability of

cryotherapy equipment and the problems associated with maintaining it. Even though all the countries surveyed were using VIA and the “screen and treat” approach within the framework of their national cervical cancer programs, institutionalizing the techniques was considered a challenge by approximately half the respondents. In this regard, experience has shown that having a dialogue based on scientific evidence prior to the introduction of these techniques with all the parties concerned helps to sensitize the professionals and facilitates the incorporation of new screening and treatment options.

With regard to the regulation of VIA and the “screen and treat” approach, the results show that all the countries except Colombia and Suriname have included these approaches into their national standards for cervical cancer prevention and the control. The target population and the recommended frequency of screening have been found to be appropriate in almost all the countries surveyed. This information is important, because in resource-limited settings where multiple health needs are being addressed, targeting interventions at the population groups most at risk makes it possible to maximize cost-effectiveness.

The profile of the health personnel authorized under national regulations to perform VIA and the “screen and treat” approach was similar in most of the countries. The list included gynecologists, general practitioners, family doctors, nursing personnel, and midwives. The rules were more restrictive for performing cryotherapy, which in some countries may only be done by physicians.

An analysis of the profile of providers who have been trained in recent years shows a clear predominance of physicians in most of the countries. In Guatemala, the training of physicians, and gynecologists in particular, has been strategic in two senses: first, these professionals can supervise the providers who offer services in their area of influence, and second,

their involvement helps to overcome any resistance from their professional group. However, training intermediate-level health personnel whenever possible maximizes one of the main advantages of using VIA and the “screen and treat” approach, since it opens up the possibility of delivering services at the farthest link in the health system, in places where access is limited and physicians are often not available.

With regard to the type of establishment authorized to perform VIA and cryotherapy, all the regulations include first-level centers, and most of them also include the second level ones. However, data on the actual provision of care show that in some countries—namely, Suriname, Guyana, and Bolivia—these services are being offered mainly in hospitals. Giving priority to the introduction of VIA and the “see and treat” strategy at the first level of care would facilitate women’s access to these services.

In terms of follow-up for women with a positive result on visual inspection, all the countries have protocols in place, and in most cases they recommend using the “screen and treat” approach—in other words, using cryotherapy on all eligible lesions at the same consultation as their screening. This also includes referring those women in need of colposcopic evaluation to an appropriate provider. This information has important implications, because the possibility of offering treatment immediately, during the same consultation when the patient is screened, is one of the major advantages of VIA, since it minimizes losses during follow-up.

Training and supervision of providers, establishment of a mechanism for quality control and assurance, and evaluation and monitoring were key aspects of programming that the survey focused on in order to understand how they are being structured in the countries that use VIA and the “screen and treat” approach.

The training of providers is the responsibility of the

Ministry of Health in all the countries. Guatemala, El Salvador, and Nicaragua have their own curriculum, thanks to the support of international organizations and local NGOs. One of the strengths identified is the marked similarity between the training courses in terms of content, number and profile of participants, methodology, and mechanisms for evaluation. However, most of the countries lack a solid system of accreditation and continuing education to guarantee the competency of the providers after their initial training. In most cases, supervision is done through on-site visits, which raises the challenges of financing and availability of supervisors to carry out this task with the necessary frequency as the number of centers that perform VIA and cryotherapy expands. To meet these challenges, Colombia proposes to back up the on-site supervision of providers with a mandatory virtual continuing education course that providers will take once a month.

Another fundamental issue that emerged from analysis of the survey results is the need for planning in advance of the training. It turns out that in almost all of the countries the number of providers currently applying their training is approximately half the number of those trained. The reasons accounting for this situation include other administrative or managerial responsibilities, migration, and lack of the necessary equipment. Thus, it is important to select students carefully and ensure that, once trained, they will have the necessary tools available in their workplace in order to immediately implement the skills they have acquired.

Only about half the countries surveyed offer a course to train the trainers. Being able to draw on national talent to train new providers contributes to the institutionalization and sustainability of these services.

With regard to quality control, evaluation, and monitoring, all the countries indicated that they already have or are developing a quality control

mechanism and a list of specific indicators for VIA and cryotherapy. Almost all the countries specified the frequency with which they hope to evaluate and monitor these services, and they stated that they plan to prepare a related report. However El Salvador, Guyana, Nicaragua, and Peru were the only countries that indicated they have an information system capable of providing the necessary data. Having good high-quality information systems is a fundamental requirement in order to observe progress being made and the impact the program is making. It also reveals

gaps, so that corrective measures can be taken when needed.

Finally, although several international organizations and NGOs provide technical cooperation in the Region for the introduction and consolidation of these strategies, all the countries reported that this support needs to be maintained and strengthened, especially in the areas of training, supervision, quality control, evaluation, and monitoring.

5. Conclusions

- » The results show that all of the respondent countries use VIA and the “screen and treat” approach within the framework of their cervical cancer programs; they recognize the advantages of these techniques over other forms of screening and treatment; and reported having the intention to scale up the delivery of these services.
- » The simplicity, low cost, and immediate results of VIA, as well as the possibility of administering treatment with cryotherapy during the same consultation (“screen and treat”) at the first level of care were regarded as significant advantages by most of the countries.
- » The main challenges cited were proper training, supervision, quality control, evaluation, and monitoring of these techniques, as well as the limited availability of cryotherapy equipment and the difficulty in maintaining it.
- » Most of the countries in the survey have incorporated VIA and the “screen and treat” approach into their national regulations, which also specify the target population, the frequency with which screening is recommended, the protocol for following women with an abnormal result, and the professional profile and type of health facility authorized to provide these services.
- » The training of VIA and cryotherapy providers is the responsibility of the Ministry of Health in all the countries, and the courses given are quite similar in terms of their structure, content, and evaluation methods. However, it is still necessary to strengthen the accreditation and continuing education systems that guarantee the competency of the providers after their initial training.
- » Approximately half the initially trained professionals were not actively applying their training at the time of the survey, indicating the need for careful selection of the students and a pre-training planning process that will guarantee immediate use of the skills acquired.
- » Although all the countries have a quality control mechanism in place and a list of specific indicators for evaluating and monitoring of VIA and cryotherapy, it is still necessary to establish and/or to strengthen the information systems needed in order to see the progress being made and the impact of the program, as well as to identify gaps and to institute corrective measures when necessary .
- » The experiences gathered through the present survey on the introduction of VIA and the “screen and treat” approach in the countries of Latin America and the Caribbean offer an opportunity to facilitate South-South cooperation and guide the support being provided by international organizations in the Region.

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PART ONE

CHALLENGES, OPPORTUNITIES & EXPECTATIONS FOR THE WORKSHOP

1. How is VIA screening used in your country?

- As part of the Cervical Cancer Program in selected areas with a national scope
- As part of the Cervical Cancer Program in selected areas with no or limited cytology
- Demonstration projects
- Only performed by NGOs
- Only performed by the private sector

Additional comments:

2. How is the “screen and treat” approach used in your country?

- As part of the Cervical Cancer Program in selected areas with a national scope
- As part of the Cervical Cancer Program in selected areas with no or limited cytology
- Demonstration projects
- Only performed by NGOs
- Only performed by the private sector

Additional comments:

3. In your opinion, what are the main advantages for your country that VIA offers over other options for cervical cancer screening? In which way has VIA contributed to improve the impact of your country’s cervical cancer program?

4. In your opinion, what are the main advantages for your country the “screen and treat” approach offers over other options for screening and treatment of precancerous lesions? In which way has the “screen and treat” approach contributed to improve the impact of your country’s cervical cancer program?

5. In your opinion, what are the main challenges faced in your country when introducing VIA into the cervical cancer public health program? What strategies has your country adopted to overcome these difficulties?

6. In your opinion, what are the main challenges faced in your country when introducing the “screen and treat” approach into the cervical cancer public health program? What strategies has your country adopted to overcome these difficulties?

7. Does your country plan to scale up the use of VIA?

- Yes
- No

If the answer is positive, specify how:

8. Does your country plan to scale up the use of the “screen and treat” approach?

- Yes
- No

If the answer is positive, specify how:

9. ¿De qué forma pueden las organizaciones internacionales contribuir a la implementación de la IVAA y de la estrategia “ver y tratar” en su país?

- Contributing to the development of a training curriculum for VIA/“screen and treat” approach within the country
- Supporting provider training for VIA/“screen and treat” approach
- Contributing to the supervision and retraining of providers
- Supporting the development of a plan for monitoring, evaluation and quality assurance of VIA and the “screen and treat” approach in the context of the Cervical Cancer Prevention and Control Program
- Providing tools and materials for VIA/“screen and treat” approach implementation

Additional comments:

10. What are your expectations for the PAHO Workshop on cervical cancer prevention strategies using VIA screening and cryotherapy treatment to be held in Guatemala, 1-2 June 2011?

PART TWO, VIA & THE “SCREEN AND TREAT” APPROACH

SECTION I. NORMS AND REGULATIONS

1. In your country, is VIA screening part of the national guidelines for cervical cancer screening?

- Yes
- No

If the answer is positive, please attach the guidelines

2. In your country, is the “screen and treat” approach part of the national guidelines for cervical cancer screening?

- Yes
- No

If the answer is positive, please attach the guidelines

3. Regarding VIA and the “screen and treat” approach, is there a person in your country responsible for training, quality assurance, evaluation and monitoring and ensuring that the norm is followed?

- Yes
- No

If the answer is positive, please specify:

Name:

Position:

Organization/institution:

4. In your country, what sources of funding are used for the implementation and sustainability of VIA screening? And for the “screen and treat” approach?

- Country health program budget
- Donor funds
- Mixed donor and country funds

5. What type of personnel is authorized to perform VIA screening according to your country’s norm? (mark as many options as needed)

- Gynecologists
- General practitioners
- Nurses
- Professional midwives
- Health promoters
- Others (specify):

6. What type of personnel is authorized to perform the “screen and treat” approach according to your country’s norm? (mark as many options as needed)

- Gynecologists
- General practitioners
- Nurses
- Professional midwives
- Health promoters
- Others (specify):

7. What type of health care facility is authorized to perform VIA screening according to your country’s norm? (mark as many options as needed)

- Health care facilities in the primary level of care
- Health care facilities in the secondary level of care
- Others (specify):

Additional comments:

8. ¿En qué tipo de establecimientos de salud está autorizada la estrategia “ver y tratar”? (marque tantas opciones como necesite)

- Health care facilities in the primary level of care
- Health care facilities in the secondary level of care
- Others (specify):

Additional comments:

9. What is the target age group for VIA screening and cryotherapy treatment? What is the recommended screening interval?

10. Are there algorithms for VIA screening and follow up of abnormal results? In case of a positive answer, please attach the algorithm.

- Yes
- No

11. What is the pathway followed by women with a VIA positive result?

- Cryotherapy treatment of eligible lesions in the same visit ("screen and treat" approach) and referral for colposcopic evaluation of women with non eligible lesions for cryotherapy treatment
- Referral of all VIA positive women for colposcopic evaluation and biopsy of lesions for histologic confirmation before treatment

Additional comments:

12. What is the follow up protocol for VIA positive women treated with cryotherapy according to the "screen and treat" approach?

SECTION II. HEALTH CARE ACTIVITIES

1. According to geographic areas/regions in your country, how many health care facilities are currently performing VIA screening?

Geographic area/region	2006	2007	2008	2009	2010	2011

Note: Add as many rows as needed.

Additional comments:

2. According to geographic areas/regions in your country, how many health care facilities are currently performing the "screen and treat" approach?

- The "screen and treat" approach is being implemented in the same health care facilities as VIA screening

Geographic area/region	2006	2007	2008	2009	2010	2011

Note: Add as many rows as needed.

Additional comments:

3. How many women have been screened with VIA in the last year by geographic area/region?

Geographic area/region	Number of women screened using VIA	Number of eligible women for VIA screening

Note: Add as many rows as needed.

4. What is the average of VIA positive women?

5. How many VIA positive women have been treated with cryotherapy in the last year by geographic area/region?

Geographic area/region	Number of women treated with cryotherapy	Number of eligible women for cryotherapy treatment

Note: Add as many rows as needed.

6. How many VIA positive women have been referred for colposcopic evaluation in the last year?

If this information is available by geographic area/region, please specify:

Geographic area/region	Number of women referred for colposcopic evaluation

Note: Add as many rows as needed.

7. What is the percentage of VIA positive women lost to follow up?

SECTION III. HUMAN RESOURCES AND TRAINING

1. Who is responsible for provider training for VIA/cryotherapy?

- The Ministry of Health, through its own training program
- The Ministry of Health, through partner organizations
- International organizations

Specify the name of partner organizations supporting the training of providers:

2. Who is giving the training courses?

3. How is provider training for VIA/cryotherapy carried out?

Organization giving the training:

Title of the course:

Course duration

Number of theoretical hours:

Number of practical hours:

Profile of participants:

Number of trainees per course:

Number of trainers per course:

Contents of the course:

Training methodology:

Evaluation of competency of the trainees:

4. Is there an accreditation system for VIA/cryotherapy providers? What does the accreditation system consist of and what is its validity? What organism or academic institution issues this accreditation?

5. How many VIA/cryotherapy providers have been trained in the last 3 years according to professional category?

Year	Training	Gynecologists	General practitioners	Nurses	Midwives	Health promoters
2008	VIA					
	"Screen and treat"					
	Education & communication					
2009	VIA					
	"Screen and treat"					
	Education & communication					
2010	VIA					
	"Screen and treat"					
	Education & communication					
2011 (1 st semester)	VIA					
	"Screen and treat"					
	Education & communication					

6. How many trained providers are currently performing VIA/cryotherapy?

7. How many providers does the country expect to train in the next 1-2 years?

8. Is there a mechanism for retraining VIA/cryotherapy providers? What does it consist of? How often are providers expected to take these refreshment courses?

9. How many VIA/cryotherapy providers have taken refreshment courses and how often?

10. How many providers have never performed VIA/cryotherapy after completing their training? What are the causes of this situation?

11. Is there a training of trainers course?

- Yes
- No

Additional comments:

12. How is the training of trainers performed?

Organization giving the training:

Title of course:

Course duration
 Number of theoretical hours:
 Number of practical hours:

Profile of participants:

Number of trainees per course:

Number of trainers per course:

Contents of the course:

Training methodology:

Evaluation of competency of the trainees:

SECTION IV. MATERIAL RESOURCES

1. What type of cryotherapy equipment is used in your country? Specify manufacturer and
2. What type of refrigerant gas (nitrous oxide or carbón dioxide) is used by cryotherapy equipments in your country? Are there difficulties to warrant refrigerant gas supply? In case of a positive answer, specify:
3. How many cryotherapy equipments are there available? What is the performance of these equipments?
4. Is there a system to warrant equipment maintenance?
5. In your country, what is the average cost per month of using VIA screening and cryotherapy treatment in a health care facility?

Annex 1 provides a list of equipment and supplies for VIA/cryotherapy to facilitate costing of these activities.

SECTION V. QUALITY CONTROL, MONITORING & EVALUATION

1. How is the quality of VIA screening and cryotherapy treatment maintained in your country?
2. Are there indicators specifically developed for IVAA/cryotherapy evaluation and monitoring?
 - Yes
 - No

In case of a positive answer, please attach the indicators.
3. Are any of the following indicators collected and monitored?
 - Coverage of the eligible population (percentage of eligible women in the target population with at least one VIA test in a 3 to 5 years period depending on the specified screening interval)
 - VIA test positivity (Percentage of women reported positive/invasive cancer on VIA)
 - Compliance to colposcopy (Percentage of VIA positive women undergoing colposcopy following a positive VIA test)
 - Detection rate of cervical cancer precursors (Number of precancerous lesions detected per 1,000 women who had a VIA test in a 12 month period)
 - Compliance to treatment (Percentage of women detected to have cervical precancers or cancers completing appropriate treatment)
 - Cure rate following cryotherapy treatment (Percentage of women detected negative on one year follow up VIA subsequent to cryotherapy treatment of cervical precancers)
4. Is there a person responsible for quality assurance?
 - Yes
 - No
5. How often is evaluation and monitoring carried out?
6. Is a report produced with the results of evaluation and monitoring?
 - Yes
 - No

In case of a positive answer, please attach.
7. Is there an information system with the capacity to collect the data needed to build the indicators for evaluation and monitoring?
8. How are the results from the evaluation and monitoring used to improve VIA and cryotherapy quality?

SECTION VII. TECHNICAL COOPERATION

1. Does your country receive technical cooperation from partner organizations regarding VIA screening and the “screen and treat” approach?

- Yes
- No

Please, provide the name of the organization(s)/institution(s) and the type of technical cooperation provided to the country

Organization/Institution	Type of technical cooperation	Year of initiation	Funding

Note: Please add as many rows as needed.

2. Any other comments regarding VIA/cryotherapy implementation in your country?

ANNEX I. EQUIPMENT AND SUPPLIES FOR VIA AND CRYOTHERAPY

The following table lists a series of equipment and supplies needed for VIA and cryotherapy. Please add or remove articles as needed. Next to each article, a space is provided to indicate the approximate number used per month (if applicable as some items are purchased once) and the price per unit.

Equipment	Amount per month	Price per unit
Gas cylinder		
Cryotherapy gun		
Regulator		
Probe tips		
Plastic sleeve		
Rubber stopper		
Flexible hose to connect regulator to cryotherapy unit		
Other		
Clinical supplies	Amount per month	Price per unit
Specula		
Sponge forceps		
Cotton Balls		
Containers (plastic cups) to hold 5% acetic acid		
Other		
Clinical solutions	Amount per month	Price per unit
5% acetic acid		
Normal saline		
Other		
Other supplies	Amount per month	Price per unit
Soap		
Cleaning gloves		
Other		

Tables and figures

Table 1. Countries participating in the PAHO Workshop on Cervical Cancer Prevention Strategies: Visual Inspection with Acetic Acid (VIA) Screening and Cryotherapy Treatment (Guatemala, 1–2 June 2011) and profile of the professionals who responded to the survey.

Table 2. Use of visual inspection with acetic acid (VIA) and the “see and treat” strategy in the countries surveyed.

Table 3. Advantages of visual inspection with acetic acid (VIA) and the “see and treat” strategy, according to the countries surveyed.

Table 4. Challenges and limitations involved in visual inspection with acetic acid (VIA) and the “see and treat” strategy, according to the countries surveyed.

Table 5. Visual inspection with acetic acid (VIA) and the “see and treat” strategy incorporated in existing national standards for cervical cancer prevention and control, according to responses from the professionals surveyed.

Table 6. Follow-up of VIA-positive women treated with cryotherapy, by country.

Table 7. Characteristics of the training course for providers of visual inspection with acetic acid (VIA) and cryotherapy, by country .

Table 8. Characteristics of the train-the-trainers course, by country .

Table 9. Providers trained in visual inspection with acetic acid and cryotherapy, by professional category and country (absolute numbers and percentages of total professionals trained per country).

Table 10. Level of activity of the trained providers, professionals who have received refresher courses, and projected training, by country .

Table 11. Resources material for the provision of cryotherapy and costs of the services, as countries.

Table 12. Quality control, evaluation, and monitoring of visual inspection with acetic acid (VIA) and the “see and treat” strategy, by country.

Table 13. Indicators used for evaluating and monitoring visual inspection with acetic acid (VIA) and cryotherapy services, by country .

Table 14. How partner organizations can help introduce visual inspection with acetic acid (VIA) and the “see and treat” strategy in the countries of the Region.

Table 15. Technical assistance and cooperation provided by partner organizations in the countries of the Region .

Figure 1. Geographical distribution of VIA and cryotherapy services.

Abbreviations

AGOG	Guatemala Association of Gynecology and Obstetrics
BOL	Bolivia
CI	Confidence interval
CIN	Cervical intraepithelial neoplasia
COL	Colombia
ELS	El Salvador
GUA	Guatemala
GUY	Guyana
HIV	Human immunodeficiency virus
INEN	National Institute of Neoplastic Diseases
INC	National Cancer Institute
FUCS	Health Sciences University Foundation
LAC	Latin America and the Caribbean
LEEP	Loop electrosurgical excision procedure
MINSAL	El Salvador Ministry of Health
MINSA	Nicaragua Ministry of Health
NIC	Nicaragua
NGO	Nongovernmental organization
PAHO	Pan American Health Organization
PER	Peru
PNSR	National Sexual and Reproductive Health Program
SILAIS	Local system for integrated health care
SUR	Suriname
VIA	Visual inspection with acetic acid
VILI	Visual inspection with lugol's iodine
VIA-VILI	Visual inspection with acetic acid followed by visual inspection with lugol's iodine
WHO	World Health Organization