Prevention of cervical cancer through screening using visual inspection with acetic acid (VIA) and treatment with cryotherapy

A demonstration project in six African countries:
Malawi, Madagascar, Nigeria, Uganda,
the United Republic of Tanzania, and Zambia

WHO, Nigeria, T. Moran

World Health Organization

International Agency for Research on Cancer
World Health Organization

APHRC African Population and Health Research Center

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WHO Library Cataloguing-in-Publication Data

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1.Uterine cervical neoplasms – prevention and control. 2.Uterine cervical neoplasms - diagnosis. 3.Uterine cervical neoplasms – therapy. 4.Acetic acid – diagnostic use. 5.Cryotherapy – utilization. 6.Malawi. 7.Madagascar. 8.Nigeria. 9.Uganda. 10.United Republic of Tanzania. 11.Zambia. I.World Health Organization. II.International Agency for Research on Cancer. III.African Population and Health Research Center.

ISBN 978 92 4 150386 0 (NLM classification: WP 480)

Printed by the WHO Document Production Services, Geneva, Switzerland

Contents

Abbreviations

AORTIC	African Organisation for Research and Training in Cancer
APHRC	African Population and Health Research Centre
CIN	cervical intraepithelial neoplasia
CPIS	Cervix Precancer Information System
HIV	human immunodeficiency virus
HPV	human papillomavirus
HRP	UNDP/UNFPA/WHO/World Bank Special Programme of Research, Development and Research Training in Human Reproduction
IAEA	International Atomic Energy Agency
IARC	International Agency for Research on Cancer
IEC	information, education and communication
LEEP	loop electrosurgical excision procedure
LETZ	loop excision of the transformation zone
MOH	ministry of health
NGO	nongovernmental organization
ORCI	Ocean Road Cancer Institute (Dar es Salaam, United Republic of Tanzania)
PATH	Program for Appropriate Technology in Health
PHC	primary health care
SA	situation analysis
UICC	Union for International Cancer Control
UNFPA	United Nations Population Fund
VIA	visual inspection with acetic acid
WHO	World Health Organization

Acknowledgements

WHO is grateful to the authors of this report:

George Mgomella, APHRC, Nairobi, Kenya

Davy Chikamata, WHO, Geneva, Switzerland

Eric Lucas, IARC, Lyon, France

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The authors would like to thank all participants from the six study countries. Special thanks go to all the health-care workers of the demonstration project for a job well done, as well as for the tireless efforts of the country teams and coordinators: Dr Sonia Andrianabela, Ministry of Health, Madagascar; Dr Frank Taulo, College of Medicine, Malawi; Dr Peter Adefuye, Department of Obstetrics and Gynaecology, Olabisi Onabanjo University Teaching Hospital, Nigeria; Dr Gonzaga Gonza Ssenyondo, Masaka General Hospital, Uganda; Dr Gaudence Komba, Peramiho Hospital, United Republic of Tanzania; and Dr Olola Oneko, Kilimanjaro Christian Medical Centre (KCMC), United Republic of Tanzania; and Dr Gricelia Mkumba, Department Obstetrics and Gynaecology, University Teaching Hospital, Zambia. Additional special thanks go to the national programme officers from WHO country offices: Dr Masy Harisoa (Madagascar), Dr Theresa Mwale and Dr Harriet Chanza (Malawi), Dr Olusola Odujinrin and Oyelade Taiwo (Nigeria), Dr Theopista John (United Republic of Tanzania), Dr Olive Sentumbwe-Mugisa (Uganda) and Dr Patricia Kamanga (Zambia). We would also like to thank the African Population and Health Research Centre (APHRC), and in particular Dr Eliya Zulu and Dr Abdhallah, Ziraba who supported the project initially, and Dr Karim Abawi, WWHO, who reviewed the report and gave invaluable input. We also acknowledge the valuable financial contributions made by WHO and the Flemish Government, without which this important feasibility and acceptability study would not have been possible.

Summary

The demonstration project, "prevention of cervical cancer through screening using visual inspection with acetic acid (VIA) and treatment with cryotherapy" began in September 2005, and involved seven sites in six African countries (Madagascar, Malawi, Nigeria, Uganda, United Republic of Tanzania and Zambia), and was completed in May 2009. Training of project coordinators took place in the Department of Obstetrics and Gynaecology, University of Zimbabwe, Harare. Training in data management was undertaken at all project sites, with consultants from the African Population and Health Research Centre (APHRC) and the International Agency for Research on Cancer (IARC) providing technical assistance to ensure that all those involved in recruiting women into the project were familiar with the instruments for data collection. The project created awareness in communities about cervical cancer and its prevention. Women were counselled and offered screening using VIA, and patients with a positive screening test were treated using cryotherapy. Patients who were not eligible for cryotherapy were referred to a higher level of health care, for further evaluation and treatment. Continuous monitoring and evaluation of the project was carried out by IARC and APHRC, through a pre-cervical cancer information system that was developed by IARC in order to generate evidence about the acceptability and feasibility in a primary health-care setting, referral site or district hospital. The project targeted all women resident in the catchment area and aged between 30 and 50 years.

Between September 2005 and May 2009, a total of 19 579 clients were screened from the six countries. Overall, 10.1% of with VIA results were positive, and 1.7% of clients had lesions suspicious of cancer on inspection. A total of 87.7% of all VIA-positive cases were eligible for cryotherapy. The majority of clients (63.4%) received cryotherapy within one week of initial screening. The single-visit approach enabled 39.1% of clients to be screened and treated on the same day. However, over 39.1% of all clients eligible for cryotherapy did not receive treatment, for various reasons, including equipment not being in working order at the time of screening, and clients requiring to get consent from their spouses before cryotherapy could be done. The VIA and cryotherapy procedures were well tolerated by women, and almost all of those who underwent these procedures would recommend them to other women. This demonstration project has shown that the "screen and treat" approach can be introduced into existing reproductive health services in low-resource countries. Screening for precancerous lesions using VIA, and treatment with cryotherapy, is acceptable and feasible at low-level health facilities in six African countries.

In conclusion, as a result of a demonstration project, VIA and cryotherapy have been incorporated into the cervical cancer-prevention services in existing reproductive health services in six countries. VIA is an attractive alternative to cytology-based screening in low-resource settings. Similarly, cryotherapy has been selected as the treatment option for the eligible test-positive cases. The alternative simple and safe cervical cancer-prevention techniques simplify the process and render it feasible and acceptable to women and providers in low-resource settings.

At the final meeting of the project, country teams presented plans on how best to scale-up cervical cancer-prevention services using the "see and treat" approach. The country teams noted that funding shortages and limited human resources are some of the factors that

may detract the Ministries of Health in the six countries from sustaining and scaling-up the programme. To optimize the use of VIA and cryotherapy for cervical cancer-prevention programmes, training of adequate number of providers will be needed, along with sustainable supervision and supply and maintenance of equipment and consumables.

Scaling-up programmes will facilitate extension of cervical cancer-prevention services to the target population in both urban and rural areas through development of referral linkages with high-level health facilities. Recommendations provided in this report can help facilitate phased and coordinated scaling-up of services in the six countries.

Introduction: background on cervical cancer prevention and control

Cancer of the cervix is the second most common cancer among women worldwide, with about 500 000 new patients diagnosed and over 250 000 deaths every year. It is a major cause of morbidity and mortality among women in resource-poor settings, especially in Africa. The majority of cancers (over 80%) in sub-Saharan Africa are detected in late stages, predominantly due to lack of information about cervical cancer and prevention services (*1, 2*). Late-stage disease is associated with low survival rates after surgery or radiotherapy. In addition, these treatment modalities may be lacking altogether, or too expensive and inaccessible, for many women in low-resource countries. Cervical cancer is potentially preventable, and effective screening programmes can lead to a significant reduction in the morbidity and mortality associated with this cancer (*3*). In sub-Saharan Africa, there are few organized efforts in low-resource settings to ensure that women over the age of 30 years are screened (*4*); consequently, women with cervical cancer are not identified until they are at an advanced stage of disease, resulting in high morbidity and mortality (*5*).

In developed countries, regular screening with a Pap smear has been shown to effectively lower the risk for developing invasive cervical cancer, by detecting precancerous changes. However, in developing countries, only approximately 5% of eligible women undergo cytology-based screening in a 5-year period (*6*). This is because there are too few trained and skilled professionals to implement such a programme effectively. In addition, health-care resources are not available to sustain such a programme (*7*). In virtually all developing countries, cytology-based services are confined to teaching hospitals or private laboratories in urban areas. Furthermore, delays in reporting cytology results make it less likely that test-positive women ever receive their results, let alone treatment or follow-up. These are some of the barriers that prevent cytology-based screening programmes from being effective in developing countries (*8*).

Recent studies have demonstrated that visual inspection with acetic acid (VIA) is an alternative sensitive screening method (*9,10*). It is cheap and non-invasive, and can be done in a low-level health facility like a health centre (*11*). More importantly, VIA provides instant results, and those eligible for treatment can receive treatment of the precancerous lesions using cryotherapy on the same day and in the same health facility. This "see and treat" method ensures adherence to treatment soon after diagnosis, hence stemming the problem of failing to honour patient referrals (*12–14*).

Cryotherapy as a method of treatment for precancerous lesions is effective (*15,16*) and easier to implement than other treatment modalities such as loop electrosurgical excision procedure (LEEP), loop excision of the transformation zone (LETZ) and cone biopsy. Furthermore, it has additional advantages, including the facts that it is affordable; there is no need for complicated equipment (although a supply of electricity is needed); and it can be done by less specialized personnel and thus can be implemented in a primary health-care (PHC) setting (*4*).

Secondary prevention of cervical cancer through screening and treatment of precancerous lesions of the cervix is associated with an overall reduction of morbidity and mortality due to cancer of cervix (*15, 17, 18*). Against this background, the World Health Organization (WHO), the International Agency for Research on Cancer (IARC), the African Population and Health Research Centre (APHRC), and project coordinators from six African countries, namely Madagascar, Malawi, Nigeria, Uganda, the United Republic of Tanzania and Zambia, sought to demonstrate the feasibility and acceptability of prevention and treatment of cervical cancer in resource-constrained countries, using VIA and cryotherapy. This was an operational research project conducted to provide information for development of national cervical cancer-prevention and control programmes.

This report summarizes key events and activities that have taken place since the inception of the demonstration project in six African, countries, namely Madagascar, Malawi, Nigeria, Uganda, the United Republic of Tanzania and Zambia. The aim of this report is to highlight observations and conclusions, particularly in relation to the acceptability of this approach in the low-resource settings of these six countries. Finally, lessons learnt are discussed and recommendations for scaling-up of services are included.

Methodology

Development of the project proposal and training of project staff

In 2004, project coordinators from six countries, Madagascar, Malawi, Nigeria, Uganda, the United Republic of Tanzania and Zambia, submitted project proposals on cervical cancer prevention to HRP for consideration for funding. In view of the similarity of the project proposals, it was decided that a generic protocol would be developed to be used in the six countries. In collaboration with APHRC and IARC, the programme developed a generic proposal. This was followed by a project coordinators' meeting in Nairobi in March 2005, to review the proposal. In addition to coordinators, programme managers and national programme officers (NPO) from WHO country offices were also invited. The overall objective of the project was to assess the acceptability and feasibility of implementing a cervical cancer-prevention and control programme based on a "screen and treat" protocol using VIA and cryotherapy, through the implementation of a demonstration project in defined areas of six African countries. The specific objectives of the demonstration project were to:

1. create awareness about cervical cancer, its effects and the availability of prevention services
2. assess the acceptability of cervical cancer screening using VIA, and treatment of precancerous lesions using cryotherapy at all levels (the women, their community, health-care workers, policy-makers, programme managers)
3. assess the feasibility and efficiency (in terms of running costs, personnel, training and equipment) for the "screen and treat" approach in the prevention of cervical cancer.

The project used the existing infrastructure, facilities and staff, with minimal extra inputs into the health-care system. WHO provided funding and APHRC and IARC provided technical assistance in project design and data management.

The generic protocol of the demonstration project was approved by national ethics committees in the six countries. At WHO, the protocol was reviewed and approved by the regional advisory panel, scientific and ethics review group and WHO ethics review committee.

In October 2005, project coordinators and nurses attended a five-day VIA and cryotherapy training course in the Department of Obstetrics and Gynaecology, University of Zimbabwe, Harare, using the training curricula developed by IARC/PATH (Program for Appropriate Technology in Health) and Jhpiego (*18–21*). For more than 10 years, the Department of Obstetrics and Gynaecology, University of Zimbabwe has been conducting such courses, and has published a number of articles on cervical cancer screening and treatment using VIA and cryosurgery (*9*, *22*, *23*). The 5-day training course aimed to produce providers/participants who were knowledgeable and competent in performing both VIA and cryotherapy (*24,25*). At this meeting, the study instruments for data collection were also reviewed. Other instruments reviewed were the questionnaires, as well as structured interviews for focus group discussions with health-care providers to capture the perspectives of feasibility and acceptability. The "Cervix Precancer Information System" (CPIS) developed by IARC was adapted and used for data entry and analysis.

In addition, local training was conducted at each site participating in the project, by clinicians from Harare who were experienced in in VIA and cryotherapy. Supportive supervision and refresher training was conducted at regular intervals by the country project coordinators. Training in data management was conducted at individual country sites, and staff from APHRC, IARC and the University of Zimbabwe provided technical assistance.

Timeframe and site selection

The project was initially designed to provide screening for women, using VIA and treatment with cryotherapy, for a period of 18 months, with follow-up at 12 months for women receiving treatment. However, local training and orientation workshops were delayed due to administrative problems. In each country, the project was conducted at a district hospital and/or at two or three lower-level health facilities in the catchment area of the referral hospital where VIA and cryotherapy or VIA alone were implemented. Other considerations in choosing a participating health facility were based on a situation analysis conducted by country project coordinators; these included: the size of the population being served by the health unit; the distance to and accessibility of the nearest higher-level health facility; and available personnel, equipment and supplies for the day-to-day running of cervical cancer-screening and precancer-treatment activities. Before the project was started, the support and cooperation of the ministries of health (MOHs) and the district health-management teams was secured during operational meetings of key stakeholders. One outcome of these meetings was the appointment of a project-management committee, which guided the project implementation, and helped in "selling" the project to the local civil community, through reports to the National Advisory Committee.

The project workplan is included in the Annex Form C1.

Creation of awareness about cervical cancer and its prevention

Project staff included physicians and nurses, and in each country they created awareness, at health facilities and in communities at social, business or religious gatherings, about cervical cancer and its prevention. The target population was all women aged 30–50 years, and resident in the catchment area. In collaboration with the information, education and communication (IEC) team in the MOH in each country, existing IEC materials on cervical cancer and its prevention were adapted and designed to local needs and aimed to motivate women to come for screening. Delivery of messages medium varied from country to country. However, in almost all the participating sites, community mobilization was achieved through activities such as the use of mass media; plays; public, church, or funeral meetings; health education at schools; distribution of posters or pamphlets; or direct personal contact. Additional deliberate efforts were made to involve men by giving them information, and by inviting them to public meetings, and consultations etc.

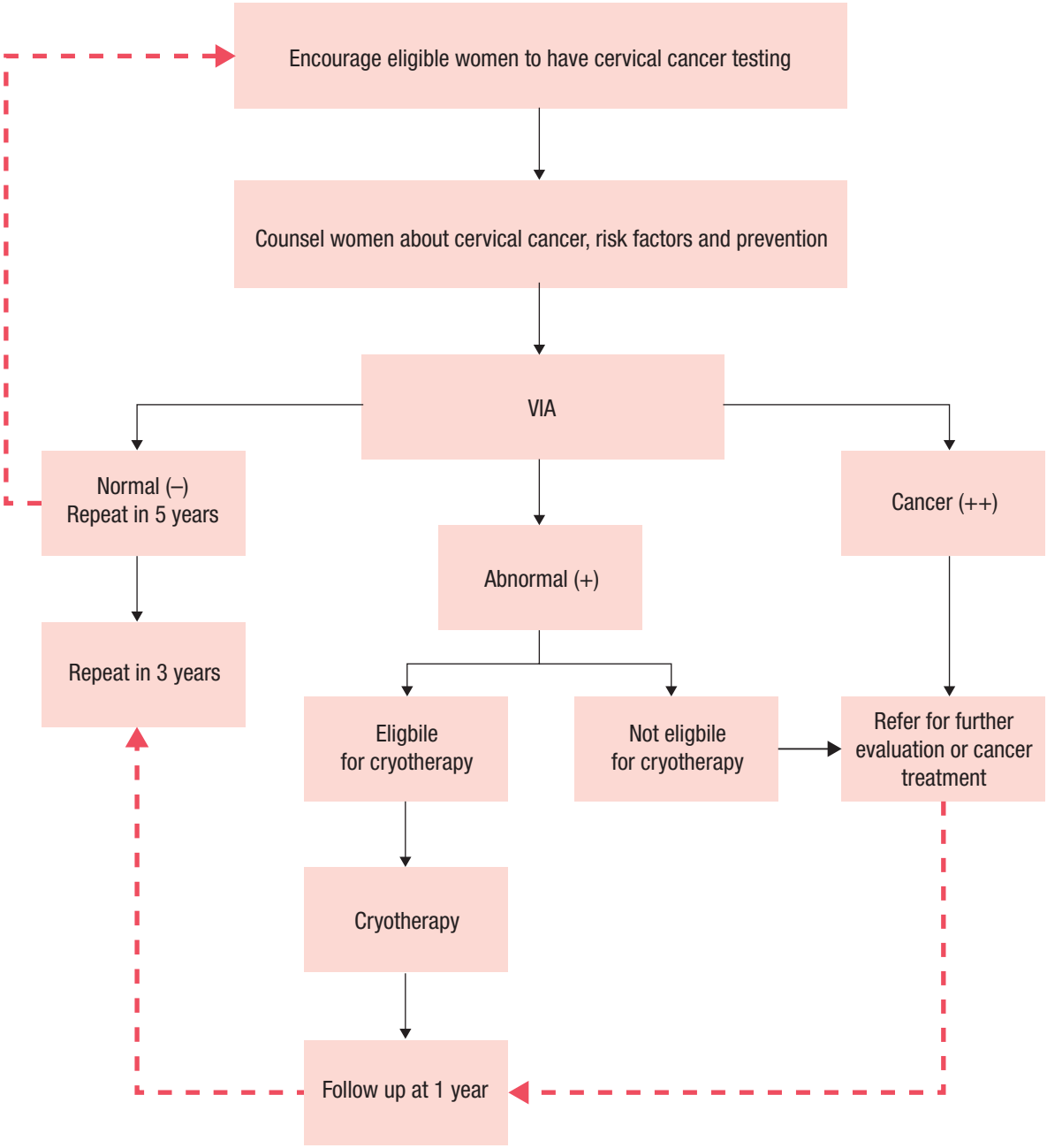
Women who came to the health facility spontaneously, or as result of the cervical cancer-awareness campaigns, were counselled and offered screening using VIA, and patients with a positive screening test were offered treatment using cryotherapy if they met the eligibility criteria. A positive VIA test was defined as any aceto-white lesion at the squamo-columnar junction of the cervix. Women received information about the VIA test, how it is done, and what to expect during the screening procedure. For some of the sites offering cryotherapy, treatment was carried out immediately after VIA testing; counselling covered information about cryotherapy, the treatment procedure, home-care instructions, vaginal discharge, and the woman's follow-up schedule. Women were counselled to either abstain from sexual intercourse or to use condoms for at least 1 month after cryotherapy, to allow completion of healing.

Table 1 shows the exclusion criteria for VIA and cryotherapy and the eligibility criteria for cryotherapy. An informed consent form was obtained from each woman prior to VIA and cryotherapy. Cryotherapy was performed by trained providers using nitrous oxide and a cryotherapy unit (Wallach Surgical Devices, Orange, CT, USA). Standardized questionnaires were administered to capture post-VIA and post-cryotherapy effects experienced by women. The draft questionnaires were pretested among women for acceptability, ease of completion and face validity. Women who had VIA were asked whether they would recommend the procedure to other women. In addition, patients who had cryotherapy were asked to grade the level of discomfort of the procedure. The severity of pain or discomfort was recorded on a form as: as expected, worse than expected, better than expected, or can't judge, in relation to what women were told to expect, before the procedure. Assessment of acceptability was performed at exit, within an hour of the procedure. The assessment findings and treatment were recorded on a standardized form. Women whose tests were negative were advised to come for rescreening after 5 years. Copies of the study instruments are available from the authors on request.

Table 1. Exclusion criteria for VIA and cryotherapy and eligibility criteria for cryotherapy

Exclusion criteria for VIA	Exclusion criteria for cryotherapy	Eligibility criteria for cryotherapy
• Women who were very ill • Women who were more than 20 weeks pregnant • Women less than 12 weeks after delivery • Women with cauliflower-like growth or ulcer; fungating mass • Women with previous history of treatment of cancerous lesions • Women with known allergy to acetic acid • Women with a history of total hysterectomy	• Women with a history of prior treatment for precancer • Women with suspected cancer • Women with known pregnancy and until 12 weeks postpartum • Women with a lesion occupying more than 75% of the surface area of the cervix • The cryotherapy probe does not cover the lesion or leaves space of more than 2 mm • The lesion extends more than 2 mm into cervical canal or onto the vaginal wall	• Women with a positive test and an entirely visible lesion on the ectocervix, not extending to the vaginal wall or into the endocervix • The lesion can be adequately covered with a 2.5 cm cryotherapy probe • Women with no evidence of pelvic inflammatory disease or cervicitis, and with no polyps • Women who are not pregnant • Women who have given consent for treatment

Figure 1. Counselling, screening and treatment of clients



Follow-up of women after cryotherapy

- As indicated earlier, women who had cryotherapy were counselled about expected side-effects, such as cramping, vaginal discharge, spotting, or light bleeding, and advised about self-care at home and when to return for review after 12 months to assess the regression of lesions. Women were given analgesics to relieve cramping. In addition, they were counselled to either abstain from sexual intercourse for four weeks following cryotherapy, or to use condoms to reduce the risk of cervical infection (condoms were provided to women). Women were also given a daily diary to record the time of onset of any side-effects or symptoms of complications, sexual activity, use of condoms and other information related to home care. Follow-up of clients who had cryotherapy was passive, in that they were encouraged and expected to return to the clinics if they experienced symptoms such as fever for more than 2 days, severe abdominal pain, heavy bleeding unrelated to menses, or bleeding with clots. Clients were given appointment cards to remind them about the next appointment. At 1 year post-cryotherapy, women were rescreened using VIA, and managed appropriately. Those who were VIA positive were referred for further evaluation. Those who were VIA negative were advised to seek rescreening after 3 years.

Patients who were not eligible for cryotherapy were referred to a higher level of health care for further evaluation and treatment. Reasons for referral included:

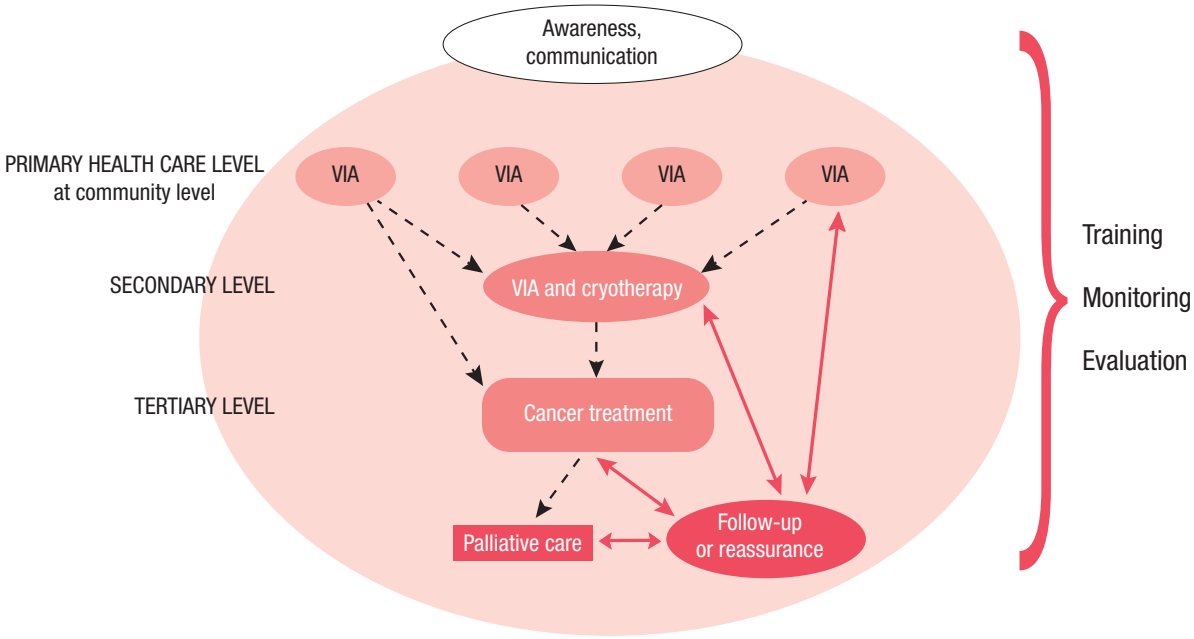
- suspicion of cervical cancer
- the presence of a cauliflower fungating lesion
- a positive VIA test, but ineligibility for cryotherapy (see Table 1):
  - aceto-white lesions occupying more than 75% of the cervix or extending more than 2 mm beyond the outer limit of the standard cryotherapy probe
  - a lesion extending onto the vaginal wall or more than 2 mm into the cervical canal
- a positive VIA test 12 months after treatment with cryotherapy.

Operational framework

Figure 2 shows the operational framework for the activities undertaken at different levels of health care. At the community level, activities included creating awareness, communication and education targeting women in the age group 30–50 years. For patients with advanced disease, palliative care was provided. At the PHC level, VIA was performed and women with a positive test were referred to the next (secondary) level, where VIA and cryotherapy could be provided. If the lesion did not meet the criteria for cryotherapy, women were referred to the tertiary level for further evaluation and treatment. Training of health-care providers, and monitoring and evaluation of services were required, and were performed at all levels.

During the course of the project, five meetings were held to review the progress of the project in each of the six countries. All those involved in the demonstration project were invited, including representatives of collaborating agencies that were providing technical assistance to the project, WHO national programme officers, MOH representatives of each country, and nurses.

Figure 2. Programme for strengthening cervical cancer prevention: operational framework



Dar Es Salam, United Republic of Tanzania, 3–5 April 2007

The first meeting was held a year after the project began, to review project implementation, assess progress, and strengthen country-level coordination. All six countries had made significant progress in terms of recruitment of women into the project. The project coordinators reported that the MOH and other stakeholders and international organizations, such as the United Nations Population Fund (UNFPA) and WHO country offices, were very supportive of the project. There were no changes in key personnel. The only personnel changes were additions of project nurses at new sites. Overall, the demand for cervical cancer screening had increased in the sites that were providing the services in the six countries. Providers at the sites felt that the new service was positively received by women in the catchment area. However, a few drawbacks were identified. For example, in some of the sites, cryotherapy had to be stopped because of equipment problems. Some of the trained staff had been transferred, and on-site training was needed. The meeting recommended the purchase of additional cryotherapy equipment at each site, and additional funds were approved for in-country training to increase the number of health-care providers to meet the increasing demand.

Cape Town, South Africa, 27 October 2007

The second meeting took place in Cape Town, South Africa during the African Organisation for Research and Training in Cancer (AORTIC) conference. The project coordinators reported that the demonstration projects were on course. However, given the substantial proportion of eligible women who were not accessing treatment, it was pointed out that it was imperative that sites make cryotherapy treatment readily available through acquiring an extra machine and training other staff to be able to conduct cryotherapy. Early indications showed that countries were eager to scale-up but there was a need to get all governments to "buy-in", through developing policy and resource allocation in annual budgets. At the end of the meeting it was agreed that:

- a quality assurance protocol would be developed
- site visits to all six countries would be made again to train providers on monitoring and analysis of results
- a training workshop on LEEP would be organized at the Ocean Road Cancer Institute (ORCI), Dar es Salaam, United Republic of Tanzania
- arrangements would be made for transfer of funds to each of the participating sites from WHO headquarters, through the Regional Office for Africa
- countries would be assisted to develop a budget for cervical cancer prevention nationwide, and to plan a mission in each of these countries with that objective
- each country would prepare an overall progress report to be presented at the regional meeting on cervical cancer prevention in March 2008, which would also be an opportunity to link with countries supported by IARC
- a final country coordinators' meeting in June or September 2008 would be considered, to make the transition from the pilot phase to the scaling-up phase.

Ouagadougou, Burkina Faso, 17 September 2008

The third meeting to review progress of the project was held during the regional meeting on cervical cancer prevention and control in Ouagadougou, Burkina Faso. The discussions at the meeting focused on issues about monitoring and evaluation of the project; supportive supervision; quality of training; and follow-up of women who are not eligible for cryotherapy when they are referred to a higher level of care.

At the end of the meeting, it was agreed that a simple monitoring system with few key indicators should be developed at the end of the pilot phase, to be used during the scaling-up phase. It was also agreed that adequate numbers of health-care providers should be trained within each country, in order to strengthen VIA screening and cryotherapy services. To strengthen the management of higher grades of squamous intraepithelial changes such as CIN (cervical intraepithelial neoplasia) 2+, it was agreed to conduct a LEEP training workshop in at ORCI, Dar es Salaam, United Republic of Tanzania, in January 2009.

Dar Es Salaam, United Republic of Tanzania, 28 January 2009

During the LEEP training workshop, a fourth review meeting was held at ORCI in Dar es Salaam. The main purpose of this meeting was for the country project coordinators and the data coordinator from APHRC to review the progress of data management and plan for the end-of-project meeting. In addition, representatives from the Union for International Cancer Control (UICC), ORCI and University of Harare were invited. The participants reviewed both quantitative and qualitative data that had been sent to APHRC. During the discussion, it was noted that most sites had completed data collection for this project, but continue offering VIA screening services as well as gathering data using the monitoring and evaluation tools. It was noted that flow of data to APHRC was slow; however, the coordinator from APHRC had reminded the country project coordinators to send datasets in a timely manner. In addition, it was agreed that sites should send final datasets to APHRC before the end of February 2009, in order to prepare a final report to be discussed at the end-of-project meeting, which was scheduled to take place in Lusaka, Zambia in October 2009.

Lusaka, Zambia, 20–22 October 2009

At the fifth and final review meeting, presentations gave an overview of the demonstration project and a consolidated report of the findings of the project from the seven sites (in six countries) that participated in the project. In addition, there were presentations by representatives of international organizations that have been involved in similar cervical cancer-prevention projects using VIA and cryotherapy. A summary of the recommendations of the Ouagadougou regional consultation on cervical cancer prevention and control in the African region was also presented. Country teams made presentations on the qualitative study reports, lessons learnt and existing gaps. There were reports from countries such as Madagascar, Nigeria and Zambia on scaling-up activities that had already started and were coordinated by the MOHs. The meeting concluded that the demonstration project had been successful in establishing the feasibility and acceptability of introducing the "see and treat" approach for prevention of cervical cancer in low-resource settings in six sub-Saharan countries. Most providers and reproductive health managers from the MOH were supportive of the possibility of expanding/scaling-up VIA and cryotherapy services to other health facilities in the six countries. Key lessons learnt were highlighted to inform governments on issues related to scaling-up. A strong collaborative network between the project sites in Madagascar, Malawi, Nigeria, Uganda, the United Republic of Tanzania and Zambia and WHO, IARC, APHRC, the International Atomic Energy Agency (IAEA), UICC and UNFPA has been established. The international organizations have indicated willingness to support scale-up of services in these countries.

The review meetings at the various stages of the project were found, by project staff and reproductive health managers from the MOH, to be very useful. Apart from monitoring the progress of project implementation, country teams shared their experiences and the constraints they had encountered. In addition, as the demand for screening services had been created and was increasing, all sites had to conduct additional training workshops in VIA and cryotherapy in order to increase the number of trained health-care providers. In order to strengthen the management of higher grades of cervical intraepithelial changes such as CIN 2+, a LEEP training workshop was conducted as part of a recommendation from the third review meeting. Next steps could include development of cervical cancer-prevention programmes based on the recommendations made by all countries participating in the project.

Results

Table 2 shows the number of women screened in each country and the results of the screening tests. The VIA-positive rates varied in the different countries, from as high as 28.0% in Zambia to as low as 5.7% in Nigeria. However, the overall rate of approximately 10.1% positive results is in agreement with other studies (*10*).

Table 2. VIA results by country and site

Site	Country	Number screened	Positive test, number (%)
Antananarivo	Madagascar	3746	422 (11.3)
Blantyre	Malawi	1221	151 (12.4)
Sagamu	Nigeria	5529	317 (5.7)
Peramiho/Moshi	United Republic of Tanzania	5390	524 (9.7)
Masaka	Uganda	2312	180 (7.8)
Lusaka	Zambia	1381	386 (28.0)
Total		19 579	1980 (10.1)

A total of 19 665 women were recruited between October 2005 and May 2009 in the six countries (see Figure 3). Of these, 19 579 (99.6%) were screened. Of those screened, 326 (1.7 %) had lesions suspicious of cancer; 1980 (10.1%) were VIA positive, and, of these, 1737 (87.7%) were eligible for cryotherapy, while 243 (12.3%) were ineligible because the aceto-white lesions extended to the vaginal wall or into the cervical canal. The women who had lesions that were suspicious of cancer and those who were ineligible for cryotherapy were referred to a higher-level health facility for further evaluation and treatment. Figure 4 shows the investigations and treatment outcomes for the 326 women suspected of having cancerous lesions. Of these, only 96 women (29.4%) underwent further investigations. It was not possible to track the type of cancer treatment for 230 women in the referral facility, for several reasons: for example participants may have refused to go to a referral facility (because of time, cost or distance), or no treatment information was available from cancer facilities for the project participants, because of lack of communication between the services.

Figure 3. Summary of the final results of the demonstration project in six countries

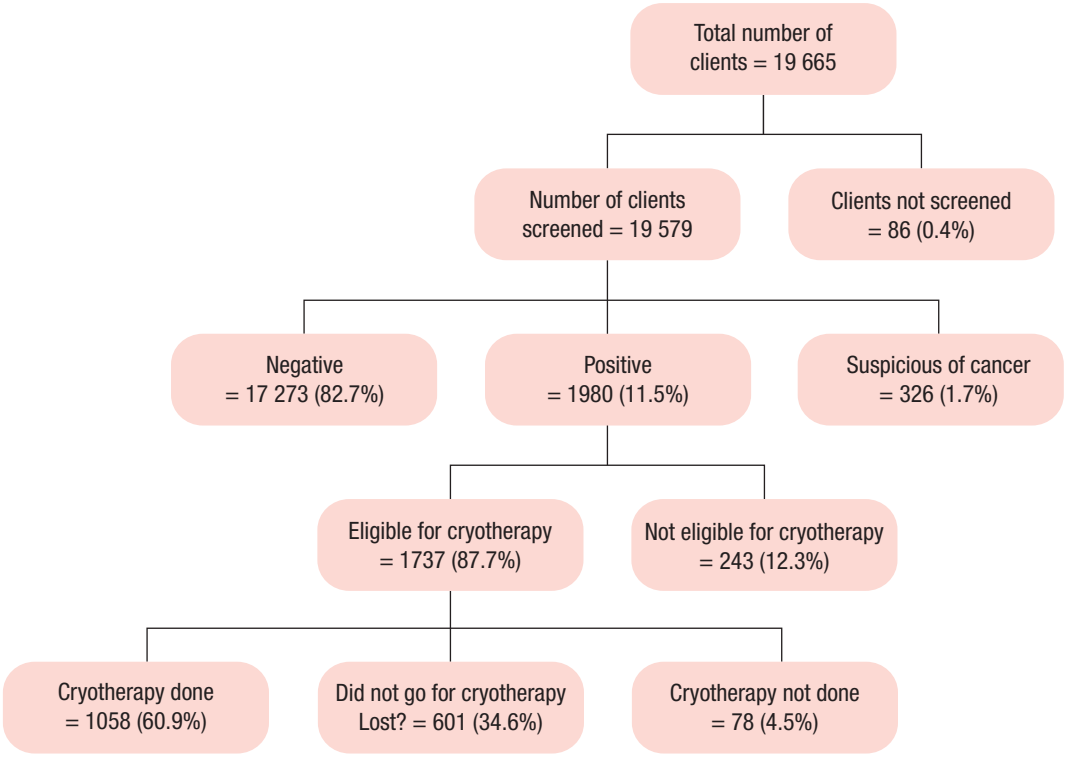
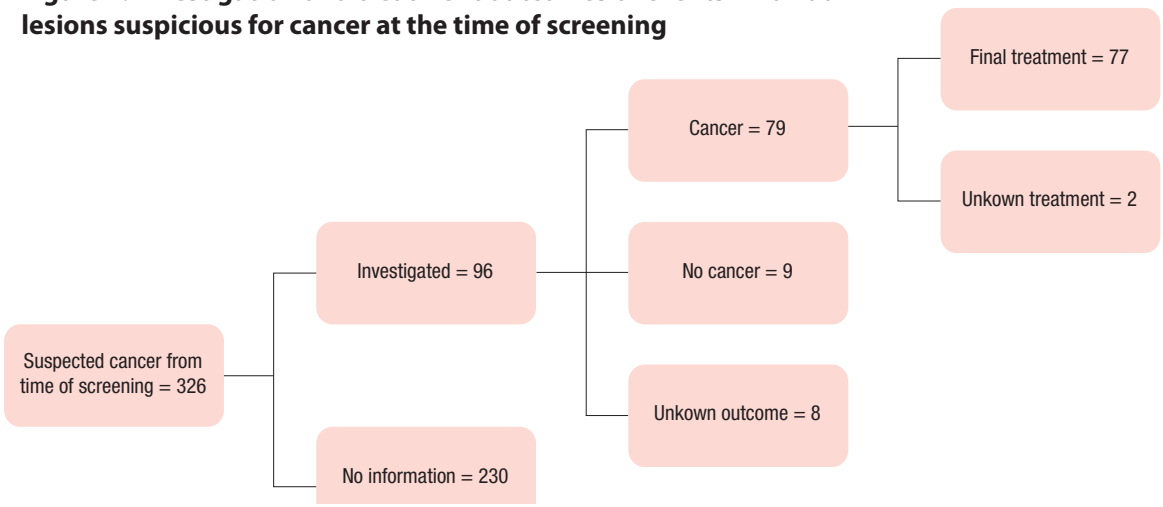


Figure 4. Investigation and treatment outcomes of clients who had lesions suspicious for cancer at the time of screening



Of the 1737 women eligible for cryotherapy, 1058 (60.9%) received it and 601 (34.6 %) were lost to follow-up; in 78 women, the cryotherapy was postponed at the client's request for many reasons, such as: to seek permission from their spouse, or because the cryotherapy equipment was out of order.

Of the 86 women not screened, 75 refused to be screened for various reasons: approximately 51% were afraid of the procedure or equipment, and about 10% postponed the procedure in order to seek permission from their spouse.

In Figure 5, VIA-positive tests are shown by age group. Although the country teams were supposed to screen women in the target age group of 30–50 years, as specified in the project proposal, in most sites women younger than 29 years were included. For example, in the United Republic of Tanzania and Zambia the data showed that women as young as 16 years of age were screened. As expected, the VIA-positive rate was highest in the middle age group (30–39 years).

Figure 5. VIA-positive results by age group

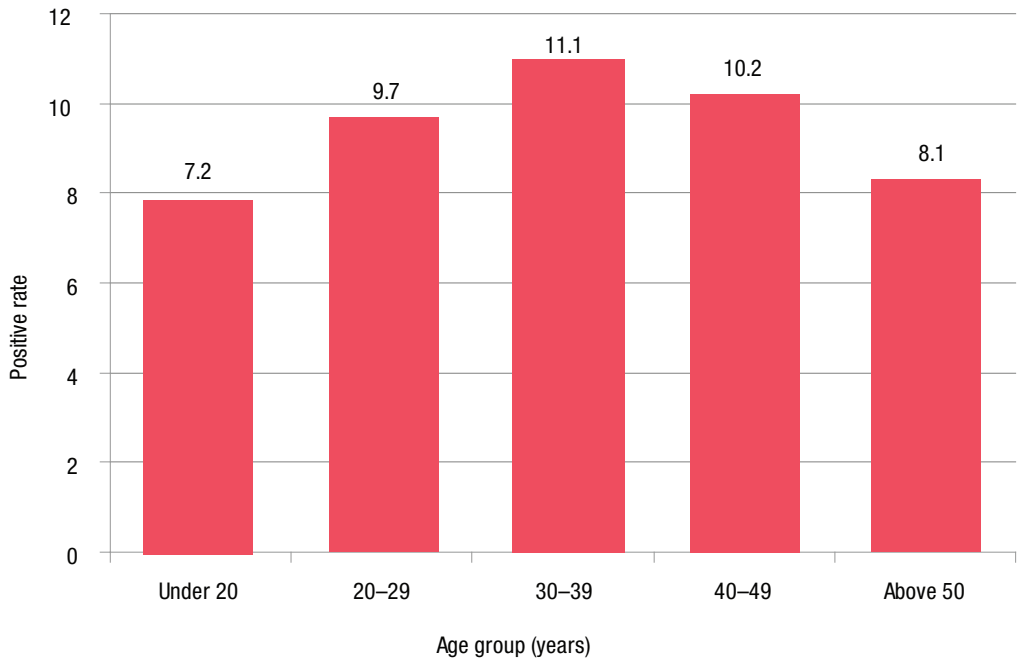


Figure 6 shows the time lag between VIA screening and cryotherapy treatment. The majority of women, 63.4%, received cryotherapy within one week of initial screening; 39.1% of women who had a positive VIA test were offered immediate treatment with cryotherapy; 14.6% of women had cryotherapy after 30 or more days.

Cryotherapy was not done on 243 VIA-positive women at the time of screening (see Table 3); 45 women postponed the procedure to seek permission from their spouses. Approximately 2.6% (2) of women were referred to a secondary health facility for further evaluation because the lesion was 2 mm or more larger than the cryotherapy probe, or extended onto the vaginal wall or into the endocervix. One had lesions suspicious of cancer and three clients were more than 20 weeks pregnant. Faulty cryotherapy equipment accounted for about 10.6% of other reasons (26 clients) for cryotherapy not being done. In the Peramiho site in the United Republic of Tanzania, cryotherapy was not carried out on 52 (27.8%) VIA-positive clients, but the reason were not indicated.

Figure 6. Time lag between screening and cryotherapy

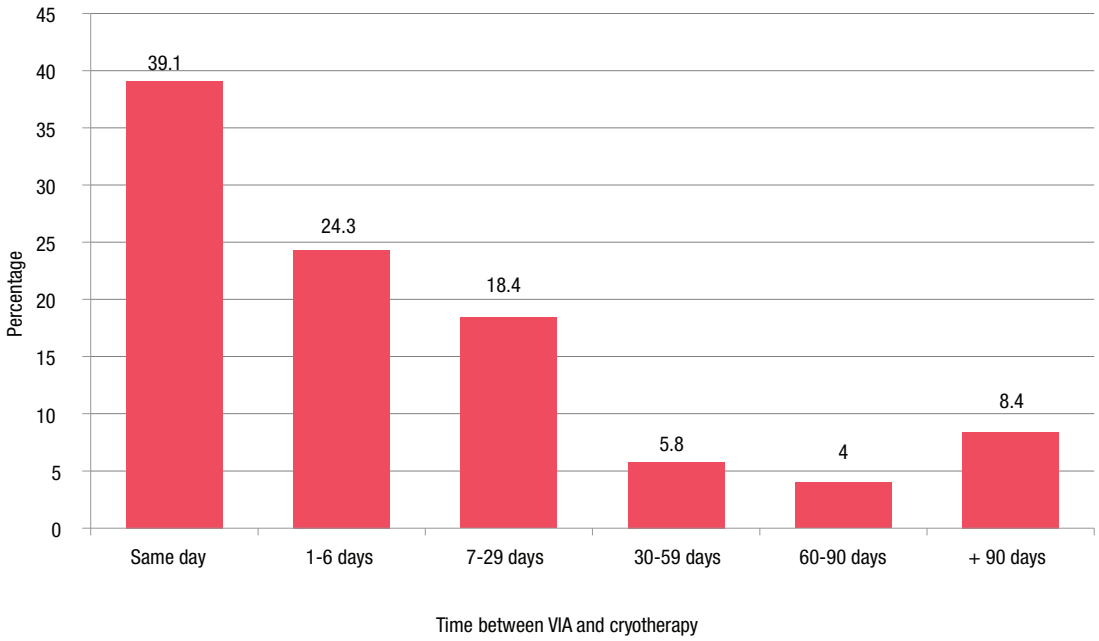


Table 3. Reasons why cryotherapy was not done

Screening site and country									
Reason for cryotherapy not being done	Antananarivo, Madagascar	Blantyre, Malawi	Lusaka, Zambia	Masaka, Uganda	Moshi, United Republic of Tanzania	Peramiho, United Republic of Tanzania	Sagamu, Nigeria	Number	Percentage of total
Client refused	1	0	0	0	0	0	0	1	1.3
Client decided to postpone	3	2	0	7	0	0	10	22	28.2
Dense white lesion	1	0	3	1	0	0	0	5	6.4
Suspicious for cancer	0	0	0	0	0	0	1	1	1.3
Client > 20 weeks pregnant	0	0	0	1	2	0	0	3	3.8
Other	1	0	0	5	1	0	1	8	10.3
Equipment failure	0	4	0	0	0	0	8	12	15.4
Seek partner permission	0	24	1	0	0	0	1	26	33.3
Total	**6**	**30**	**4**	**14**	**3**	**0**	**21**	**78**	**100**

Table 4 shows women's assessment of the cryotherapy procedure compared with what they expected from what they were told during counselling: 96.2% of women said the discomfort was as expected or better than expected, and only 0.8% said it was worse than expected. Almost 100% of cryotherapy clients indicated that they would recommend the procedure to other women. All levels of providers interviewed spoke positively about VIA and cryotherapy. They found VIA easy to learn, and immediate treatment with cryotherapy was cost-effective.

Table 4. Assessment of how women felt about the cryotherapy procedure by site

Screening site and country, number (% of total at site)									
Women's feelings about the procedure	Antananarivo, Madagascar	Blantyre, Malawi	Lusaka, Zambia	Masaka, Uganda	Moshi, United Republic of Tanzania	Peramiho, United republic of Tanzania	Sagamu, Nigeria	Total number	Percentage of overall total
As expected	75 (36.1)	10 (10.3)	15 (6.2)	93 (87.7)	46 (86.8)	129 (95.6)	216 (100)	584	55.2
Worse than expected	6 (2.9)	0 (0.0)	2 (0.8)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	8	0.8
Better than expected	112 (53.8)	84 (86.6)	223 (91.8)	8 (7.5)	6 (11.3)	1 (0.7)	0 (0.0)	434	41.0
Can't judge	13 (6.3)	0 (0.0)	0 (0.0)	4 (3.8)	1 (1.9)	0 (0.0)	0 (0.0)	18	1.7
Unknown	2 (1.0)	3 (3.1)	3 (1.2)	1 (0.9)	0 (0.0)	5 (3.7)	0 (0.0)	14	1.3
Total	**208**	**97**	**243**	**106**	**53**	**135**	**216**	**1058**	**100**

Women who had the cryotherapy deferred for medical reasons, such as the lesion being larger than the cryotherapy probe or the lesion being suspicious of cancer, were referred for further evaluation and treatment at a higher-level health facility, using a standardized form; those with invasive cancer were referred to a cancer facility.

The majority of the referred women had cancer, and 95 of these received various treatments, as shown in Table 5. The commonest modality of treatment offered was radiotherapy/ chemotherapy from specialized facilities. Unfortunately, staging of those who had cancer was not provided. From the type of treatment that the women received, it would appear that the majority had advanced disease – stage 2B or worse.

Table 5. Final treatment offered to women who were referred from screening sites and diagnosed with cancer or precancerous lesions

Final treatment offered	Number	Percentage
Radiotherapy/chemotherapy	64	56.1
Total abdominal hysterectomy	13	11.4
Other (specify)	12	10.5
Cone biospy	10	8.8
Cryotherapy	7	6.1
Palliation	7	6.1
LEEP	1	0.9
Total	**114**	**100.0**

Challenge to cover the target population

At the start of the project, the participating sites in the six countries had defined the target population, namely women aged between 30 and 50 years within the catchment area. The number of women screened ranged from 1221 in Malawi to 5529 in Nigeria. After 3 years of running the project, the coverage rate (number of women who were screened) was very low, ranging from 0.4 % in Zambia to 7.1% in Madagascar. However, it should be noted that the catchment area defined at the beginning of the study was the district or regional population and was therefore beyond the strict catchment area of the health centre. In addition, population data are still scarce in some places. These findings show that (1) constant effort to bring women to health services is necessary and strategies of communication need to be in place; and (2) a monitoring system is needed to regularly keep health centres informed, so that the trends in the population covered by screening are followed up.

Discussion and lessons learnt

This project shows how VIA and cryotherapy, using a "see and treat" or "single visit" approach, can be provided in low-resource settings where the demand for cervical cancer screening services is high and services are currently not available. The VIA-based "see and treat" approach is feasible and acceptable; and the procedures are safe and effective. The discussion and lessons learnt are grouped by project activities and results.

Development of the project proposal

The country project coordinators in the six countries, in collaboration with reproductive health managers from the MOHs, recognized cervical cancer as a major health problem that needed to be addressed by exploring the use of alternative screening methods rather than a cytology-based system. In collaboration with key stakeholders in each country, proposals on cervical cancer prevention were developed. The involvement of key stakeholders in the development of the project proposals was very important for the possible expansion of the project after the pilot phase. Since the project proposals from the five countries were similar, it was agreed that a generic proposal would be developed, with technical assistance from IARC and APHRC. In each country, the project was to be conducted in a limited geographic area before considering any scale-up. A situation analysis (SA) of the selected geographic area was conducted before the start of the project. The generic proposal allowed comparisons of results from the six countries, and country teams shared their experiences during the review meetings, which were held during the pilot phase of the project. This had a very positive impact for the project roll-out; in some instances, however, programme coordinators lacked government support in the scale-up effort and planning at the beginning of the project.

It is essential for pilot/demonstration projects to be planned by governments as part of a phase approach to national programmes.

Training of providers

VIA gives immediate results but requires training and supervision. The initial training of project staff was done at the Department of Obstetrics and Gynaecology in Harare, Zimbabwe, a centre with staff who are experienced in competency-based training skills in VIA and cryotherapy. Project staff were trained in teams of a physician and one or two nurses. In addition, before the project was launched, in-country training workshops were conducted at each participating site, by faculty staff from Harare. The project coordinators were responsible for supportive supervision of the trained health-care providers and conducted regular site visits to the centres involved in the project. The project coordinators reported that at the end of the first training most providers were competent in providing all components of the "see and treat" approach service (i.e. counselling, VIA and cryotherapy). However, in order to gain confidence and to assure proficiency, project coordinators recommended that each provider attend more than one training event. In addition, becoming proficient necessitates continual screening and coaching on how to adequately perform cryotherapy. At the final project meeting, it was suggested that a two-pronged training strategy, involving both in-service training of existing personnel, and preservice education for physicians and nurses, would be necessary for scaling-up services. The existing centres will serve as centres of excellence in the provision and training of cervical cancer-prevention providers in the country. By the end of the pilot phase, each centre had conducted at least three 5-day training workshops. In Nigeria, a total of 101 health-care providers including doctors (20) and nurses (81) were trained. In Peramiho, United Republic of Tanzania, two workshops were conducted and 18 nurses were trained. In Moshi, United Republic of Tanzania,

129 health-care providers were trained from seven sites. In Zambia, 27 health-care providers from three sites were trained. In Madagascar, 35 nurses and 49 doctors were trained to provide VIA service in 30 primary health care centres, one district hospital and one university hospital.

Launch of the project

Prior to the project launch, staff held several meetings with key stakeholders from the MOH, WHO, UNFPA country offices and local and international nongovernmental organizations (NGOs). At the start of the project in each country, an orientation workshop was held involving all staff members in the health facilities. This approach was necessary for the demonstration project, so that stakeholders, especially the MOH could have a "buy-in" before expansion of services to other sites. In each country, a project-management team was formed and had regular meetings where information was exchanged and project-related problems were solved.

Creation of awareness about cervical cancer and its prevention

One of the barriers to accessing screening in low-resource countries in sub-Saharan Africa is limited knowledge among community members about cervical cancer. Non-symptomatic women do not present for screening even if it is available, and, in most cases, precancer is a silent disease. If women ever do go to a clinic, they do so when the disease has advanced to a stage that cannot be successfully treated with local resources. Efforts to improve awareness of the target population can result in early detection of precancerous lesions, leading to improved survival from cervical cancer in developing countries. In this project, a combination of community-based, facility-based and media-based strategies was used to create awareness and inform women. All sites conducted massive information and education campaigns aimed at women in the target age group of 30–50 years who had never been screened, and their communities. The campaigns focused mainly on informing and educating community members on the benefits and availability of cervical cancer-prevention services. Information materials developed together with the IEC team for the MOH were also distributed to provide more information about cervical cancer. In addition to community-awareness campaigns about cervical cancer, all sites that participated in the project have introduced information on VIA as part of their routine reproductive health group education talks.

Service delivery

Most sites in each country had dedicated 1–2 days a week for VIA and cryotherapy services.

As reported and recommended in other studies, women aged between 30 and 50 years were the target population for cervical cancer screening using VIA in this project. Women who tested positive received cryotherapy if they met the eligibility criteria, and they were informed of potential side-effects and how to handle them, and advised to return for review after 1 year. In addition, they were advised of circumstances where they should seek additional care before the scheduled visit. Information gathered during site visits indicated that the sites offering VIA have had an increase in the number of women seeking services. Providers who were interviewed reported increased levels of awareness about cervical cancer among communities in the catchment areas, as reflected by increased demand for VIA services. The counselling component for VIA and cryotherapy was strong; 96.2% of women interviewed after the procedures said the discomfort was as expected or better than expected. Almost 100% of the women would recommend the procedure to other women if it were necessary.

VIA and cryotherapy have been integrated into existing reproductive health services. Cryotherapy and post-treatment counselling skills were rated as good to excellent. Once the project had been initiated, strengthening of services and follow-up of women was critical. In this

project, activities aimed at strengthening services included post-training follow-up visits by the project coordinators, and assistance with establishing a data-management system to document the services offered. Consultants from IARC and APHRC provided technical assistance for data management. The project-management team in each country met regularly to review the progress of project implementation. These meetings provided an opportunity to advocate with the MOH personnel and health-care facility staff for incorporation of VIA and cryotherapy into routine reproductive health services.

Rates of VIA positivity varied greatly across sites, ranging from as high as 28.0% to as low as 5.7%. However, the total rate of positive VIA results was 10.1%, which is in agreement with other studies. The high rate of positive results (28%) recorded in Zambia can be explained by the fact that a large number of women screened were in a very young age group (16–26 years), the period close to sexual debut when human papillomavirus (HPV) infection is usually acquired, leading to visible cervical changes consistent with HPV infection. Further, this is a period in life when squamous metaplasia of the cervix is prevalent – a visual finding that can often be confused with precancerous change. Nigeria, however, had a VIA-positive rate of 5.7%, but the data from this demonstration project did not capture adequate social characteristics of the women; thus no conclusions can be made about the reason for the low rate of positive results, in the absence of information on lifestyle factors such as religion, number of sexual partners and sexual networking, vaginal health practices, and the presence of other infections such as human immunodeficiency virus (HIV).

A number of sites were not able to offer the "screen and treat" approach, and this accounted for the time lag between testing and cryotherapy as shown in Figure 6, and the women lost to follow-up shown in Figure 3. Women at a facility without cryotherapy equipment who had a positive VIA test and were eligible for cryotherapy were referred to a district hospital.

Perceptions of programme managers, health-care providers and clients

The project had high acceptability among women. Figure 3 shows the number of refusal of the screening procedures. Only 86 women declined to be screened. The main reasons were fear of the unexpected, suspected pregnancy and the need to consult their spouse. All these factors can easily be dealt with by raising awareness about cervical cancer and the availability of screening options, and by increasing the availability of screening options. The sensitization should target both men and women, and the counselling skills of health-care providers should be strengthened. In this project, there was a high rate of client and provider satisfaction with VIA and cryotherapy. Most women did not report any procedure-related discomfort. Some providers attributed this to good counselling about the discomfort before the procedures. Evaluation of the post-VIA and cryotherapy findings indicated that women welcome VIA because it allows them to know the results and the "next steps" immediately, in a single visit. The project coordinators interviewed indicated that VIA is better than a Pap test because women do not have to wait or come back for their results. The reproductive health managers from the MOHs interviewed identified lower cost and immediacy of receiving results as two key benefits of the approach.

Follow-up and referral of women

In this project, a passive follow-up was recommended in the immediate period after cryotherapy, with a scheduled visit at 1 year. There were few unscheduled visits in the immediate post-cryotherapy period. For women who tested negative at the first visit, a repeat test was recommended at 5 years, and for those with a positive test, follow-up was recommended at 1

year after cryotherapy. This schedule for repeat testing is based on the current understanding of the natural history of the disease. At the end of the project in May 2009, approximately 50% of women who had had cryotherapy treatment had returned for a 1-year follow-up appointment. Repeat VIA tests were negative in all women. As reported in other studies, cryotherapy is a relatively low-technology treatment method that is highly effective, with minimal morbidity. VIA and cryotherapy can be provided at lower-level health facilities, provided there is access to a referral facility. The referral system was weak in this project, as there was no assurance that referred clients would feed back into the project at the referring clinic. For example, of 326 women who were referred for further evaluation to ascertain a final diagnosis and receive treatment because they had lesions suspicious of cancer, 230 (70.6%) did not present themselves at referral hospitals, as shown in Figure 4. It is possible some went to other hospitals for evaluation and that others did go to a referral hospital. As such, the outcome of most of the clients referred is not known. Altogether, 96 women were fully investigated; in 79 women, cervical cancers were confirmed. However, the final diagnosis was not known in 8 women. The final method of treatment for those who had cervical cancer is as shown in Table 5. The establishment of follow-up systems will be critical in order to reduce the number of test-positive women lost to follow-up. Record keeping should be standardized and be part of the national health information system. Each country should establish a data-collection and follow-up system to trace women with precancerous lesions who are not receiving immediate treatment. At the final meeting, it was recommended that two to three indicators, such as result of the VIA test and treatment offered, should be incorporated into the existing health information system of the MOH and a supervision system should be put in place to monitor the follow-up rate and the quality of VIA and cryotherapy provided.

Review meetings

Project staff and reproductive health managers from the MOHs found the review meetings at the various stages of the project very useful. Apart from monitoring the progress of project implementation, country teams shared their experiences and the constraints they had encountered. For example, at the first meeting, it was discovered that almost all sites were experiencing problems with cryotherapy equipment and in some of the sites services had been stopped. Therefore, it was recommended that cryotherapy equipment was purchased to be used in the established sites. In addition, the demand for screening services had been created and was increasing, so all sites had to conduct additional training workshops in VIA and cryotherapy in order to increase the number of trained health-care providers. To strengthen the management of higher grades of cervical intraepithelial changes such as CIN 2+, a LEEP training workshop was conducted as part of a recommendation from the third review meeting. As part of national scale-up, meetings such as these could be internalized and become the seed for a national cervical cancer-prevention steering committee in each country.

At the final review meeting of the project, most providers and reproductive health managers from the MOHs were supportive of the possibility of expanding/scaling-up VIA and cryotherapy services to other health facilities in the six countries. Next steps could include development of cervical cancer-prevention programmes based on the recommendations listed at the end of this report.

Conclusions

Between September 2005 and May 2009, the six countries at district hospital and at PHC levels carried out various activities to introduce a cervical cancer-prevention programme by using VIA and cryotherapy. In the six countries that participated in this demonstration project, VIA has been incorporated into their cervical cancer-prevention services, with minimal outside funding for actual service delivery. VIA is an attractive alternative to cytology-based screening in low-resource settings. Similarly, cryotherapy has been selected as the treatment option for eligible test-positive individuals. Integrating VIA and cryotherapy into existing reproductive health services through a demonstration project provided an important experience for providers, by helping them establish the feasibility and acceptability of the procedures. Service providers were satisfied with the alternative approach, as were the women who were screened and treated. The alternative simple and safe cervical cancer-prevention techniques simplify the process and render it feasible and acceptable to women and providers in low-resource settings.

At the final meeting of the project, it was agreed that the target age group should remain between 30 and 50 years. This is the optimal age group in which to initiate screening for the prevention of cervical cancer in low-resource settings. Huge disparities between countries have also been observed, in terms of the rate of positive VIA test results (for example, in Nigeria, out of 5529 women screened only 5.7% women tested positive, while of 1381 women in Zambia, 28.0% tested positive); treatment rate (67.9% of women who tested positive in Uganda were treated and only 47.1% of women who tested positive in the United Republic of Tanzania were treated); and follow-up rate (of the 188 women who had been treated with cryotherapy, 37 (19.7%) had returned for a 1-year follow-up visit, and in Madagascar only one woman had returned.

The meeting participants also noted that funding shortages, limited human resources and lack of supervision are some of the factors that may detract MOHs from sustaining and scaling-up the programme. To optimize the use of VIA and cryotherapy for cervical cancer-prevention programmes, training of adequate numbers of providers is needed, along with a sustainable supply of equipment and consumables, with quality assurance and control in place. It was also recognized that quality and access to specialized services for cancer treatment and staging of lesions has to be enhanced in all countries, as well as access to palliative care. Recommendations provided in this report can help facilitate phased and coordinated scaling-up of services in the six countries

Recommendations for scaling-up

Based on the results of the project and discussions at the review meetings, the recommendations presented next were suggested for scaling-up cervical cancer-prevention services for the six countries. In general, the group recommended that each country should establish a cervical cancer-control programme that is properly staffed and funded to develop and monitor scale-up activities. The recommendations are grouped according to key aspects of a programme.

Policy

- The MOHs should review and/or update policies and strategies on cervical cancer and develop national guidelines based on WHO standards. The policies, strategies and plans for reproductive and noncommunicable diseases should address who will provide screening and treatment and where it will be provided. Implementation of policy should include linkages with HIV and sexual and reproductive health, as well as related programmes.

- The MOHs should incorporate cervical cancer-screening and treatment activities into the national health strategic and operation plans and allocate funds at central, provincial, district and health-care facility levels for purchase of the necessary equipment and supplies for VIA and cryotherapy.

Advocacy and awareness creation

- National educational campaigns should be developed and implemented to increase community awareness about cervical cancer, its prevention and the availability of services.
- Development/adaptation of IEC materials should be encouraged at provincial, district and health-care facility levels.
- MOH awareness about cervical cancer should be increased, through dissemination of the results and findings of the demonstration project.
- Men should be encouraged to become involved and take an interest in cervical cancer screening and treatment.

Screening and counselling

- It is recommended that screening should be limited to women in the 30–50-year age group. Younger and older women who come for screening should be counselled and offered other appropriate services. Very young women can be counselled and offered HPV vaccine where available.
- The content of information material for counselling should be standardized and translated into local languages.
- Counselling after cryotherapy should emphasize the use of condoms for both HIV-positive and HIV-negative women. Condoms should be provided after cryotherapy.

Training: didactic (theory) and hands-on

- The objective should be to create a core of trained providers, who in turn could train a second generation of providers. Providers from sites providing cervical cancer-prevention services should be trained as teams,.
- Existing sites should be developed into centres of excellence for training and provision of VIA and cryotherapy services.
- Training materials should be adapted and standardized at regional and national levels, to include updated scientific information.
- Training on prevention of cervical cancer should be incorporated into a preservice curriculum. Inclusion of VIA and cryotherapy within basic preservice medical education was proposed by the group as a cost-effective alternative to developing an adequate pool of cervical cancer-prevention providers in each country
- In-service training should be carried out in collaboration with a technical agency, such as Jhpiego, IARC, UICC or WHO.
- The training programme should also develop collaboration with competent trainers to ensure that a pool of qualified health professionals is trained in LEEP, cold knife conization, and other methodology for further cancer treatment, so that a comprehensive programme can be run and women can be offered adequate treatment.

VIA and cryotherapy services and curative services for advanced disease

- Programmes should ensure that equipment and supplies are available and that all procedures for infection control are in place at health facilities that offer VIA and cryotherapy. Health-care providers and managers should also ensure privacy and confidentiality.
- The VIA and cryotherapy services should be integrated and standardized independently and should be offered together or not depending on the health centre's capacity : (1) either in the mode of a "single visit" approach, in health-care centres where cryotherapy is feasible; or (2) in the mode of a "see and treat" approach, when only screening is feasible at the health-centre level and women have to be referred to another level of the health system for cryotherapy. Each country has to decide where the "single visit" approach is feasible and where a "screen and treat" approach can be offered; in the same country, a mix of both approaches is advised and will depend on the level of health facilities available.
- Government should collaborate with partners to ensure referral and treatment services are available for patients with advanced disease, and that these services are offered according to national policies.

Follow-up and referrals

- Strategies should be identified to reduce the number of women with positive VIA tests and lesions suspicious of cancer who are lost to follow-up.
- Special attention should be paid to treating women who test VIA positive. Active follow-up of treated women should be in place so that they are reviewed after 1 year.
- A system of record keeping should be developed, and assistance provided to ensure its successful implementation. Supervisors should stress the importance of recording data and reporting them to health-care providers.
- A referral and feedback system should be developed to facilitate follow-up of patients.
- In many countries, there are no reference centres for treatment for CIN3 or invasive cancer : it should be a priority that at least one reference centre exists in every country

Monitoring and evaluation

- The target population should be defined and a post-cryotherapy follow-up system established.
- Progress of the coverage rate of screening and treatment should be monitored. Data collection should be simplified to retain only minimal indicators such as the test result of the screening tests and the compliance to treatment. Data on VIA and cryotherapy should be incorporated into existing health management information systems. Rates of positive test results, by providers at sites, should be monitored over time.
- Supervision systems should be set up at central level to monitor the cervical cancer programme and to alert about action to take in case of failure at any level of care.
- Cancer registries have to be in place in every country to be able to monitor the impact of the national programme (including screening and treatment, but also HPV vaccines) on cervical cancer incidence and mortality. Specific support should be allocated to cancer registry implementation to serve the National Cancer Control Programme.

Sustainability of VIA services

- Programmes should ensure that screening and treatment of precancerous lesions are maintained by having the MOH play a leading role through the national coordinating committee, inclusion into the national and district plans, and working with development partners including NGOs, civil society organizations and the private sector.

- VIA and cryotherapy are acceptable treatment methods for patients. With plans to scale-up, full-scale community mobilization will result in a large increase in the number of women presenting who are potentially at risk of cervical cancer. For the countries with cancer-awareness days there is a need to use those days for recruitment for VIA screening. More effort is needed to sensitize those in the community to use the services.
- There may be a long lag between screening and treatment (waiting list). This problem ultimately results into loss of clients to follow-up. The cause of this should be addressed by individual sites, to facilitate better service by purchasing more equipment, and assigning more staff to screening activities. For sites linked with medical schools or medical training institutions, residents should rotate as a part of increasing staffing and improving their training.
- At site level, there is a need to determine the best way to increase the number of women screened, as well as the best strategies to improve the effectiveness of printed messages and the use of community/outreach workers to follow up patients. These can include cost-effective client incentives, group education and mass media.
- A large proportion of patients who are eligible for cryotherapy have not been treated. Part of the problem comes from the client side and the best that can be done to limit this is to improve counselling skills and communication with clients. Failure to treat clients as a result of a health-system problem needs to be addressed to avoid disappointing clients. Activities need to be well planned ahead of time to avoid getting overwhelmed. The key things to consider are adequate staffing and the availability of extra equipment.
- Referral of clients with symptoms that are suspicious cancer is not streamlined and the outcome of many is not known. In some countries there are few diagnostic centres and personnel, and it takes a long time to get results back, which does not facilitate quick intervention. Active follow-up of patients and of their results should be strengthened, and innovative strategies to achieve this should be thought of.

Scale-up of resources

- Some countries such as Malawi are moving at a fast pace because the government has embraced cervical cancer screening as a national programme. Other countries do not even have a cancer-control policy and therefore cannot source funding from government. In the interim, these countries need to find alternative funding sources for when the WHO support runs out. Efforts should be made to ensure service delivery is not disrupted because of lack of funding. Efforts must also be made to start integrating screening into routine PHC activities in centres that provide family planning and antenatal services.

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C1: PREVENTION OF CERVICAL CANCER THROUGH SCREENING USING VIA/CRYOTHERAPY: PROJECT WORKPLAN																																				
ACTIVITY	**DESCRIPTION**	**INDICATORS**	**TIMEFRAME (Months)**																																	
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
Finalization of generic protocol – Review the changes first draft – Revise the log-frame – Revise data collection forms – Revise monitoring and evaluation section – List of specific issues to be adapted at country level	Introduce recommendations and changes made at the Nairobi meeting on the review of the common generic protocol	1) Meeting report to WHO. 2) Final protocol with recommended changes ready																																		
Finalization of specific site protocol – Finalize situation analysis – Budget – Insertion of country specific changes into protocol	Assess existing screening & treatment services; existing equipment; staffing, data management systems and finalize site specific issues in the protocol	Updated site situational analysis reports																																		
Acquire ethical clearance and relevant government/local clearances to carry out the project	Submit final protocol to relevant ethical review board for clearance and to government authorities for relevant clearance	Ethical clearance documented																																		
– Purchase of equipment and supplies – Administrative process at WHO	Purchase and delivery of equipment to the sites by WHO	Needed equipment in place																																		

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National meeting to take place prior the Harare meeting	National Stakeholders meeting called by country coordinator	Meeting report available																																		
Training in Zimbabwe of country coordinator and selected staff from different sites VIA- cryo / data collection	Hands-on clinical training of coordinators and lead nurses in VIA/Cryotherapy	Training conducted as per schedule and report available																																		
Local meeting with stakeholders to discuss implementation, training, etc.	Coordinator will call heads and stakeholders of the various participating health facilities for an inaugural meeting	Meeting held as per plan and Meeting report available																																		
Purchase of equipment and supplies	Equipment for screening, treatment, and data management	Purchased items available as per schedule																																		
Community mobilization/community awareness campaigns	Determine who will be responsible for publicity and promotional campaigns, what publicity materials and methods to be (e.g. radio, newspapers, religious institutions, women's groups, posters, health talks at clinics, CBOs, community leaders, etc)	1) Proportion of planned health education sessions delivered in the mass media. 2) Number of times printed and translated IEC materials are out of stock																																		

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Staff training in VIA & Cryotherapy	Training of health workers at the clinic on project promotion, counselling, screening, treatment, referral system, follow-up issues, and reporting procedures	Proportion of staff trained in counselling, VIA & Cryotherapy treatment who passed the competency test																																				
Assessment of knowledge about cervical a cancer and its prevention	A pre-project community survey to assess the level of knowledge about cervical cancer	Survey report																																				
Data collection	Start collecting data and data entry - To send every week to APHRC the first three months- Every month after this pilot period	1)Proportion of correctly filled forms per HCW. 2)Proportion of returns filed in time over a given period																																				
CLINICAL ACTIVITIES																																						
Counselling	Give general information to potential clients and specific counseling to clients	1) Proportion of planned health education sessions delivered at the clinic. 2)Proportion of HCW counseling as per established protocol.																																				
VIA	Carry out VIA procedures using the set guidelines	1) Proportion of eligible women on whom VIA was done. 2) Proportion of women VIA positive out of all those tested																																				

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Cryotherapy	Carry out cryotherapy procedure using the set guidelines	1) Proportion eligible women on whom cryotherapy was done. 2)Proportion of women getting complications.																																		
Referral for treatment	Refer those who need referral as per referral protocol	Proportion of clients referred and their outcome known																																		
Regular visits of the site by country coordinator	Facilitative support supervision by the country coordinator to all sites	Proportion of planned visits made																																		
Support supervision (Quality assurance): – clinical – monitoring and evaluation	External supervision by an expert	Proportion of planned support supervision visits made																																		
Health Facility Management	The conditions in the management structure that might influence the project performance	Proportion of clinic days canceled/not utilized fully (staff absent, reagents out of stock, equipment out of order etc)																																		
Pilot Phase Evaluation	Evaluation of project performance in terms of staff, instruments, community mobilization and data management	Pilot phase evaluation report																																		

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Assessment of project acceptability	Qualitative interviews with community members and HCW on their views about the project	Focus group discussion and staff interview reports																																	
Assessment of Knowledge about cervical a cancer and its prevention	A post-project community survey to assess the level of knowledge about cervical cancer	Survey reports																																	
Follow up	Clients will return at 3 and 12 months for follow-up after cryotherapy	Proportion of women returning for review at 3 and 12 months																																	
Dissemination and communication	Carry out continuous communication with communities, relevant stakeholders, and government officials and dissemination seminars to facilitate consideration for scale-up of lessons by relevant authorities	Dissemination seminar carried out; reference of project in policy documents; possible scale-up of lessons																																	
End of Project Report	Prepare final project report for reference by stakeholders, and general assessment of the performance of the project.	Copies of report available																																	

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ISBN 978 92 4 150386 0