CHAPTER 4.

# Discussion and lessons learned



The Care4Afrique pilot project, which was implemented in three Francophone countries in West Africa, clearly demonstrated the advantages and the challenges of implementing opportunistic screening with VIA followed by immediate treatment with thermal ablation as a service integrated in the primary health-care system.

The project also highlighted the need for the establishment of colposcopy and LLETZ treatment services for the substantial number of VIA-positive women who would require further assessment and excisional treatment. The details of the lessons learned from the project are described in the subsequent sections.

## 4.1 Opportunistic screening at primary health centres – advantages and disadvantages

This project demonstrated that the delivery of cervical cancer screening and treatment services through PHCs is feasible in the three African settings studied. For cervical cancer screening to be accessible to the women who need the service most, it should be incorporated into the basic health packages delivered through primary care.

Most of the PHCs have facilities to examine women, and the nurses and GPs are generally experienced in performing speculum examination and minor procedures, such as the insertion of intrauterine contraceptive devices. Some additional inputs are needed to develop the infrastructure for screening and ablative treatment in those settings. For example, the project supplied one thermal ablator to each clinic, but it would be better to supply two devices per clinic to ensure continuity of service, in case one device develops technical problems.

To successfully start and maintain opportunistic screening in PHCs, the training of health-care providers and periodic supportive supervision are the key requirements. This is particularly important because there is a high turnover of providers in some clinics.

The main challenge of such an opportunistic approach is achieving high coverage. Most of the eligible women attend PHCs only when they are pregnant or seriously ill, which is not the optimal opportunity to perform cervical cancer screening. **The best way to improve coverage of screening is to incorporate some form of community mobilization**

**activity.** In this project, such mobilization was done by the community health workers and/or through local mass media campaigns and special events (e.g. the First Lady of Benin was invited to launch the cervical cancer screening programme in that country). Community mobilization is a sustained activity that involves various stakeholders (ministries of education and information, civil society organizations, media representatives, etc.).

The age of the women being screened at PHCs should be closely monitored. Women younger than 30 years often seek a pelvic examination because of vaginal discharge or menstrual problems. Young women willingly accept screening services, as was seen in many of the clinics in this project. **The providers of VIA should be aware that screening women younger than 30 years is not a cost-effective use of resources and may also subject the women to unnecessary harms.**

## 4.2 VIA as a screening test – advantages and disadvantages

VIA is a simple test, and implementation is feasible in primary care settings. The biggest advantage is its point-of-care nature, which enables a treatment decision to be made immediately. However, many challenges are associated with the use of VIA.

It is widely recognized that VIA performance can be highly variable and depends on the training, experience, and skill of individual providers. These limitations of VIA were also demonstrated in this project. The VIA positivity rates varied widely between the PHCs within the same country and the same region. **The subjective nature of VIA is the biggest hurdle to the scale-up of VIA-based screening.** Intensive efforts are needed to ensure that training and periodic retraining of providers is provided. Moreover, providers should be able to perform enough tests on a regular basis to maintain their skills adequately.

Regular mentoring by a more skilled provider is also key to improve VIA performance. In some settings, tele-consultation facilities have been created for VIA providers; these enable them to capture cervical images with a mobile phone and share the images with an expert for a second opinion. The subjective nature of VIA also makes quality control difficult.

The supply of acetic acid of the appropriate dilution is also a challenge in many African countries. Freshly prepared acetic acid of the appropriate dilution (3–5%) should be used to obtain accurate VIA test outcomes. Acetic acid is highly hygroscopic and attracts water from the atmosphere. This causes a stored solution to easily become diluted. Therefore, the solution should be freshly prepared daily. Vinegar intended for cooking is frequently used in health clinics in Africa; this practice is inadvisable because the concentrations given on the bottles are not reliable.

VIA test performance (sensitivity, specificity, and predictive values) can also vary widely between the settings. **A major limitation of the VIA-based screen-and-treat approach is the high proportion of women who are treated unnecessarily, because of the low positive predictive value (PPV) of the test.** This project was not designed to evaluate VIA test performance. However, the low PPV of the test can be deduced from the fact that only 4 of the 21 women with suspected cervical cancer on VIA who underwent further investigation were found to have cancer on colposcopy or biopsy.

## 4.3 Thermal ablation – advantages and disadvantages

This project established the feasibility, safety, and acceptability of thermal ablation performed by nurses or GPs with variable levels of expertise in primary care settings in multiple countries. **More than 800 women were eligible for treatment at the screening visit, and 88% of them were accepted for same-day treatment without any major complications being reported.** The proportion of women who reported moderate or severe pain during or after the procedure was very low, even though the treatment was performed without any anaesthesia. Only 6 women reported severe pain, and all of them were at the same clinic in one country. There may have been a problem with the correct application of the probes. No cases of primary or secondary haemorrhage or pelvic inflammatory disease were reported in the treated women.

A few centres reported technical problems with the thermal ablator, especially with the probes. On the basis of the feedback, the manufacturer improved the design, and the new device was found to be more robust. There were no reports of incomplete treatment due to technical failure or drainage of battery charge.

The only limitation of any ablative treatment is that a substantial proportion of screen-positive women (39% in this project) are not eligible for thermal ablation and require referral for excisional treatment. **A high variability was observed in the assessment of eligibility for ablative treatment.** The eligibility certainly depends on age, because a higher proportion of younger women have an ectocervical transformation zone compared with older women. The variability in the eligibility proportion was observed even when the women were stratified by age group.

The eligibility proportion in women aged 30–34 years varied from 30% in Senegal to 83% in Côte d'Ivoire. Many of the VIA-positive women who were considered by the VIA provider to not be eligible for thermal ablation were considered to be eligible by the colposcopist.

## 4.4 Colposcopy practice – feasibility and challenges

The project successfully set up a colposcopy facility in each country. It was challenging to find gynaecologists at the district hospitals who were willing to be trained in colposcopy. However, the project trained some of them to perform colposcopy and LLETZ. The PPV of the colposcopists to detect CIN1 or worse lesions was 46.7%, which is reasonably good in a VIA-based screening programme. However, many of the colposcopists were hesitant to perform difficult LLETZ procedures and preferred to refer such women to the tertiary care setting. In some countries, it was also a challenge to ensure a regular supply of the consumables required for electrosurgery (loop and ball electrodes, hand switches, etc.).

## 4.5 Training of health-care providers

Training of health-care providers at all levels is key to the success of screen-and-treat programmes. The cascading impact of training a core group of master trainers and using them to train, retrain, and mentor a large number of providers was demonstrated in this project. Because the nurses and GPs at the PHCs have a high workload and cannot be away from their routine duties for long periods, whenever possible such training should be delivered as self-paced online learning. The digital atlas on VIA and ablative treatment developed by IARC is a very useful resource for self-paced learning. The *Atlas of Visual Inspection of the Cervix with Acetic Acid for Screening, Triage, and Assessment for Treatment* is accessible online free of charge at https://screening.iarc.fr/atlasvia.php (Fig. 15).

The digital atlas has an image bank that trainers and trainees can use. The use of a large number of images showing VIA outcomes helps to improve the confidence of trainees. Every trainee should receive adequate hands-on training, and trainers should ensure that trainees follow a systematic checklist when performing an examination. A checklist is available at https://screening.iarc.fr/atlasviadetail.php?Index=29.

Trainees should practise thermal ablation on a dummy model (e.g. on a chicken breast) before they perform the procedure on a patient. There is no standard guideline on the number of women a trainee should practise on before being considered proficient. At the end of training, the competency of each trainee should be assessed objectively, and a certificate should be issued to successful trainees.

IARC has also developed self-paced online learning materials on colposcopy and LLETZ, which are accessible free of charge in the *Atlas of Colposcopy: Principles and Practice* at https://screening.iarc.fr/atlascolpo.php (Fig. 15). This resource is very useful for colposcopy trainees.

## 4.6 Quality assurance of VIA-based screen-and-treat programmes

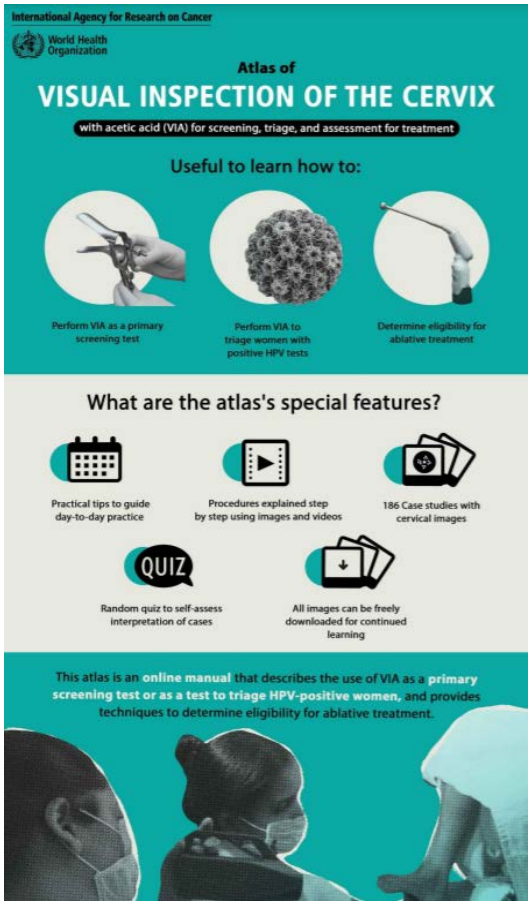
Any screening programme may cause harms to the participants unless all services are delivered with appropriate quality at each level. Quality assurance requires measuring the performance of all services, including not only the delivery of the screening test but also diagnostic verification, treatment, and follow-up.

The performance of a screening programme is measured with a set of key performance indicators (KPIs), for which systematic data collection is needed.

A simple electronic database was developed using REDCap software and customized to the requirements of each participating country. The providers were trained in appropriate documentation, and data from the paper records were entered into the electronic database regularly; therefore, it was possible to estimate the following KPIs of a VIA-based screen-and-treat programme.

- **VIA positivity rate** is defined as the percentage of women who tested positive on VIA out of the total number of women screened within a defined age group. VIA positivity rates may vary between populations depending on the prevalence of cervical precancer and cancer; positivity rates will be higher in populations with a higher prevalence of disease. The VIA positivity rate is also generally higher in younger women. However, high variability in the values of this indicator within the same population suggests quality issues, as was observed in this project. A VIA positivity rate that is too high indicates higher false positivity, which results in a higher proportion of women undergoing unnecessary treatment. A VIA positivity rate that is too low may lead to high-grade precancers and cancers being missed.
- **Treatment rate** is defined as the percentage of screen-positive women who completed the appropriate treatment of cervical precancer and cancer. The value of this indicator should be as high as possible. The treatment rate in this project was 66.3%

**Fig. 15.** Flyer to promote the IARC online *Atlas of Visual Inspection of the Cervix with Acetic Acid for Screening, Triage, and Assessment for Treatment* and the homepage of the online *Atlas of Colposcopy: Principles and Practice.*





▶ https://screening.iarc.fr/atlasvia.php
▶ https://screening.iarc.fr/atlascolpo.php

in the 1340 women found to be VIA-positive at the PHCs. The treatment rate was much higher in the women who were eligible for thermal ablation and could be treated at the PHCs.

- **Completion rate of screening and treatment in a single visit** is defined as the percentage of screen-positive women eligible for ablative treatment who complete treatment in a single visit. This indicator is key to understanding the efficiency of the programme and ensuring high compliance with treatment. In this project, 88% of the VIA-positive women eligible for ablative treatment received the treatment on the same day as screening.
- **Compliance with further evaluation** is defined as the percentage of screen-positive women referred for further evaluation and/or treatment who undergo the procedure. In this project, 565 women were referred for further assessment with colposcopy either because they were VIA-positive and not eligible for thermal ablation or because they had lesions suspicious of cancer. Only 356 (66.2%) of them underwent further assessment at the designated colposcopy clinic.
- **Detection rate of cervical cancer** is defined as the number of cervical cancers detected per 1000 women screened. In this project, 3 cases of histopathologically confirmed cervical cancer were detected in 16 530 women screened. The detection rate was 0.18 per 1000 women screened. There were an additional 4 cases of suspected cancer on colposcopy; however, the histopathology reports for these cases were not available.
- **Follow-up rate after treatment with thermal ablation** is defined as the percentage of treated screen-positive women followed up after 1 year. The follow-up rate at 1 year differed between countries, and 18.8% of treated women were not cured (i.e. had persistent disease at the follow-up visit).

The quality assurance process requires continuously monitoring the performance using the KPIs, comparing the values with expected standards, investigating the causes of suboptimal performance (if indicated), and taking the necessary steps to improve the performance. The same principle of continuous quality improvement was followed in this project. The KPIs were estimated from the data entered into the electronic database. The outcomes were shared with the facility managers and all the service providers. The gaps were identified, and corrective measures were implemented. Despite such proactive measures, there were several gaps in the quality. This underscores the inherent challenges in ensuring robust quality in a VIA-based screen-and-treat programme in LMICs.