



Screening for and Treatment of Precancerous Lesions

Dr. Nathalie Broutet
World Health Organization

Video transcript is located below each slide.

Cervical cancer screening

- ▣ Screening has reduced cancer deaths dramatically in the industrialized world.
- ▣ Same benefits not yet seen in lower-resource settings where over 80% of deaths occur.

Transcript: In high-income countries, routine cervical cancer screening has reduced cervical cancer deaths dramatically over the last 40 years. Over 80 percent of worldwide cervical cancer deaths are seen in low-resource settings where cervical cancer screening is not common.

Cervical cancer screening

- Good opportunity to stop cancer from developing.
- High success rate in treating screen-positive women.
- Sometimes screening and treatment can be done in the same visit, reducing drop-out.

Many options for effective cervical cancer screening and treatment are available. The combination of certain of these options permits screening and treatment of women during the same day, which avoids requiring the women to return to the health center.

Screening options

Conventional Pap smear



Visual inspection with acetic acid (VIA) or Lugol's iodine (VILI)



Lab-based HPV DNA test



Rapid HPV DNA test



The three most current screening options available are:

1. Cytology (Pap smear)
2. Visual inspection with acetic acid or Lugol's iodine
3. HPV DNA-based testing

Screening: cytology (Pap smear)

- ❑ Good success in many countries.
- ❑ Requires highly trained staff, a laboratory, and good quality control.
- ❑ Multiple patient visits needed.
- ❑ Drop-outs can occur.
- ❑ Sensitivity is low—requires repeat screening every 3 to 5 years.
- ❑ May be difficult to sustain in low-resource settings.

The cytology-based program has had remarkable success in high-income countries. Implementation requires a highly technical staff, as well as multiple visits from patients—visits to collect swabs, visits to get the results, and also visits to get treatment. This number of visits can facilitate loss of follow-up of women with a positive screening test. The quality control of this program is an important aspect. The sensitivity of cytology is low, therefore screening every three years or every five years is required. Sustainability of cytology-based programs may be an issue in low-resource settings.

Screening: visual inspection

- Provider swabs cervix with acetic acid or Lugol's iodine, waits one minute, then looks for telltale signs of lesions on the cervix.
- Rapid results.
- In some settings, treatment can be offered on the spot, reducing loss to drop-out.
- Sensitivity about the same as for cytology.
- Equipment is simple and inexpensive—no labs needed and can be used in small or large clinics.

Providers swab the cervix with acetic acid or Lugol's iodine and look for lesions on the cervix. The results are rapid—in one minute. And in some settings, treatment can be provided at the same time as the screening, which decreases the rate of drop-out. The sensitivity of visual inspection is about the same as cytology. The equipment for visual inspection is simple and inexpensive. No laboratory is required and it can be performed in small or large clinics.

Screening: HPV DNA testing

- High-tech instruments read sample of cervical secretions.
- Highest sensitivity of all screening methods (finds more disease).
- Positive result requires triage to assess treatment options—visual inspection methods can be used for that purpose.
- Less expensive tests available within the next few years.

This is a high-technology method, which permits identification of HPV oncogenic type from cervical secretions. It is the highest-sensitivity method of all screening methods. Positive results require triage to assess the best treatment options. Visual inspection can be used as a triage. At the moment, HPV DNA tests are still very expensive. However, new rapid tests—much less expensive—should be available in the next few years.

Diagnosis: colposcopy and biopsy

- Biopsy directed by colposcopy is standard practice following positive Pap in high-resource settings.
- Equipment is expensive and sophisticated.
- Specialized training is needed.
- Often not feasible or appropriate for low-resource settings.
- Alliance for Cervical Cancer Prevention field results suggest colposcopy is not essential in low-resource settings.

Biopsies performed with a colposcope are standard practice following a positive Pap in high-resource settings. However, it requires sophisticated and expensive equipment, and specialized training is needed. Colposcopy often is not feasible or appropriate in low-resource settings. Alliance for Cervical Cancer Prevention field research suggests that colposcopy is not essential for low-resource settings.

Precancer treatment options

Cryotherapy (freezing)

- Simple, inexpensive, and appropriate when affected area is not too large and is accessible.

Loop electrosurgical excision procedure (LEEP)

- Relatively simple surgical procedure, but requires experienced provider.

Cold knife conization

- Rather extensive procedure with potential for complications.
- Requires anesthesia.
- Generally used only when cryotherapy or LEEP are not appropriate.

Cryotherapy—or freezing of the cervix—is simple, inexpensive, and very appropriate when lesions are not too large.

Loop electrosurgical excision procedure (LEEP) is a relatively simple surgical procedure, but requires an experienced professional. Complications are quite rare.

Cold knife conization is a rather extensive procedure with the potential for complications. It requires anesthesia, and is generally done when LEEP or cryotherapy are not appropriate.

Screening and treatment in low-resource settings

- Cytology is difficult to establish in low-resource settings.
- Promising results with visual inspection in many countries.
- Best to reduce opportunities for drop out—consider “same visit” approach.

In terms of strategy, cytology is difficult to establish in low-resource settings. Visual inspection shows promising results in some studies. Programs should reduce, as much as possible, drop-out rates by promoting screening and treatment at the same visit whenever feasible.