

SECTION 8: MANAGEMENT OF HPV TEST RESULTS

KEY MESSAGES

- HPV testing can identify women at risk of developing cervical cancer, and when coupled with appropriate treatment, can reduce cervical cancer incidence and mortality.
- Women with HPV positive test results need follow-up care. There are several options: immediate treatment, or triage with another test -cytology or VIA- or referral for colposcopy. The choice will depend on the resources available in the health system, and the country guideline.
- All efforts are needed to ensure women with HPV positive test results receive follow-up care. Loss to follow-up is a reflection of the barriers to access to health services.

MANAGEMENT OF HPV TEST RESULTS

HPV testing is only effective if the corresponding follow-up and treatment is provided to all women. In fact, appropriate follow-up care and treatment has a greater impact on mortality reduction than a high screening coverage. For example, follow-up and treatment of 50% of women detected with precancerous lesions in a setting with 100% screening coverage has been estimated to reduce mortality by 50%; while 100% follow-up and treatment in a context of 50% screening coverage has been estimated to reduce mortality by 70% (Murillo R *et al.* 2008).

Despite this fact, follow-up care after screening continues to be a challenge. Several studies in high-income countries report 10%-45% of screened women with incomplete diagnosis and treatment (Spence A, Goggins P and Franco EL. 2007). In Latin American settings, with weaker health systems, follow-up care is more challenging and an estimated 18%-75% of screened women do not complete their diagnosis and treatment (Arrossi S *et al.* 2012; Wiesner C *et al.* 2010).

This loss to follow-up care is a reflection of the barriers to access to health services. Also, social determinants of health have an impact on the completion of diagnosis and treatment procedures. For example, women's position in the socioeconomic structure, older age, low educational level, low income level, lack of transportation, and lack of social support are factors that can affect whether a woman is screened, or completes the diagnosis and treatment procedure, when results are abnormal.

Women's knowledge and perceptions regarding cervical cancer, HPV, and how to prevent it and treat it are also factors affecting follow-up care. For this reason, information received during the medical visit, and how HPV test results are communicated to women are important factors in ensuring continuity in the process of care (see Section 9: Communicating results about HPV testing).

In addition to patient-related barriers to follow-up and treatment, there are also health system factors related to the availability, organization, and operation of health services. Barriers include long delays in delivering test results back to the patient, lack of appropriate guidance concerning the steps to follow after receiving a positive HPV test result, difficulties with obtaining a medical appointment for treatment, and long waiting times for care (Arrossi S *et al.* 2012). In addition, many screening programs tend to lack effective follow-up systems to contact patients, have problematic referral and counter-referral systems, or lack human resources to respond to the demands for care.

These barriers need to be considered when planning and implementing a cervical cancer screening program based on HPV testing. This section offers information to help plan services to manage women with HPV positive test results.

MANAGING WOMEN WITH AN HPV POSITIVE TEST RESULT

There are several strategies that can be used to manage women with HPV positive test results: immediate treatment, or triage with another test -cytology or VIA- or referral to colposcopy. There are also options to consider regarding a diagnosis -with or without biopsy- and regarding treatment for precancerous lesions- cryotherapy, LEEP, conization. These decisions need to be made as part of establishing national guidelines for cervical cancer screening, and in planning the program. The decisions should be made based on an assessment of the health system capacity, human and financial resources available and other contextual factors. In addition, the strategies selected should take into account the number of visits that women will have to make to complete the screening and treatment process, since a greater number of visits may lead to a greater loss of women and increase program costs.

Table 1 shows several regimens for triage, diagnosis, and treatment by the number of visits required.

Table 1. Examples of strategies to manage women with HPV positive test results, by number of required visits

VISIT 1	VISIT 2	VISIT 3	VISIT 4
HPV test, followed by treatment for women with positive results			
HPV test, with VIA as a triage test in HPV positive women, then followed by treatment for women with HPV and VIA positive results			
HPV test	Colposcopy -with or without-biopsy	Treatment	
HPV test, and cytology at the same time	Colposcopy for all women with test results of HPV positive and abnormal cytology -with or without biopsy	Treatment	
HPV test	Cytology for all women with HPV positive test results	Colposcopy/confirmatory biopsy	Treatment

Source: Adapted from *Planning and Implementing Cervical Cancer Prevention and Control Programs: A Manual for Managers*. Alliance for Cervical Cancer Prevention. 2004.

ENSURING ACCESS TO DIAGNOSIS AND TREATMENT SERVICES

Planning and estimating resources needed

When planning the introduction of HPV testing, it is crucial to estimate the number of women who will need services for follow-up diagnosis and treatment; and then accurately assess the human, financial and material resources needed to respond to the demand. The following factors should be considered:

- Number of women estimated to need services at each stage screening, diagnosis, treatment, post-treatment follow-up. After estimating the program's target population, estimate the number of women expected to be referred to diagnosis (e.g., colposcopy/confirmatory biopsy), treatment (e.g., LEEP), and post-treatment follow-up services. Based on this estimate, decide what will be needed to ensure equitable access to these services. As an example, see the box below on how to calculate the number of women who will require colposcopy services.
- Availability of human resources trained to perform the diagnosis and treatment. It will be important to plan for the right number of trained providers, as well as ensure that the location of diagnostic and treatment services are distributed across geographical areas, in order to be accessible and meet the service demand.
- Availability - type and quantity - of diagnostic and treatment equipment, such as colposcopes, cryotherapy equipment, LEEP, etc.

Example of how to calculate the number of women that will require colposcopy services

- Total number women aged 30 to 64 years to be screened: 12,500 women
- Estimated screening program coverage (80%): 10,000 women
- An estimated 12% of women screened will be HPV positive: 1,200 women will need additional evaluation.
- If colposcopy is the chosen method for further evaluation: 1,200 women will need access to the service.
- If cytology will be used as a triage test before further evaluation: 1,200 Pap smears will need to be taken and processed.
- Calculation of women that may need to be treated (e.g. 2% of women screened with HPV testing): 200 women

Depending on the health system capacity, a decision will be needed about which service delivery model will be used: vertical services, in which providers and facilities provide a single service; or integrated services, in which providers deliver a range of health services. Also, based on the characteristics of the country or region, a decision will need to be made about whether the service will be static services, at a health center or hospital, or whether it will be outreach services, also called mobile services.

Diagnostic and treatment service networks

For the diagnosis and treatment process to be effective, trained human resources and equipment must be coordinated and be part of an efficient service network that facilitates continuity of care for women, following screening.

Care networks vary depending on the services available, the institutions involved, and the structure of the health system. Prevention of cervical cancer is a process that necessarily requires the involvement of all levels of the health care system: primary, secondary, and tertiary care and, in some cases, involves both the public and private systems.

The stages of screening, diagnosis, and treatment need to be well coordinated to make the process effective. These stages include necessary procedures for: screening (HPV testing) and delivery of results; referral for diagnostic confirmation (e.g., colposcopy and biopsy); and treatment for precancer (e.g., LEEP) and cancer (e.g., brachytherapy, chemotherapy) or palliative care, as appropriate.

The interactions between levels of care that link the different procedures are called *interfaces*. These include the transfer of information and responsibilities among the users, health workers, and institutions involved. Interfaces are critical to establish the process, fulfilling the objectives of each step, and achieving the best possible outcomes (Zapka J *et al.* 2010).

The health management team needs to identify facilities and services that are available to be part of the diagnosis and treatment network. Facilities need to be accessible with regard to hours, services and location. The management teams must seek agreements for the organization and maintenance of these health networks.

To be effective, all key actors in the health system need to be involved from the beginning of the screening process. Good relationships among the personnel at the different services and facilities, clear referral protocols and communications, and clear responsibilities at each stage of the process are essential (ACCP, 2004). One possible strategy is to organize a working team that includes stakeholders and representatives from the facilities involved (e.g., hospital directors, chief of gynecology services) to strengthen and maintain ties. This team can meet periodically to define protocols, establish goals, evaluate processes, and solve problems.

The personnel involved in the process at all levels of care need to be familiar with the diagnosis and treatment network and have written protocols that include accurate information on:

- Which cases require women to be referred.
- Name, address, and hours open to the public of the service and facility where the women are referred.
- Referral mechanisms (e.g. letters, phone calls, etc.).
- How to make appointments.
- Form of communication among services.

Strategies to reduce loss to follow-up care

The fact that services are available does not necessarily guarantee that women can access the service or will use them. Several geographic, socioeconomic, and health system barriers exist that cause loss of follow-up care for women with HPV positive test results. These barriers cannot be ignored by the health care team. To ensure continuity of care for women during the diagnosis and treatment process, an effective follow-up system should be ensured. This includes:

- Contact information on women at the first visit and updated at each subsequent visit.
- A registry system for women in follow-up care. Services need to clearly identify HPV positive women and establish priorities for their care. Systems can vary, ranging from computerized systems to index card files of women to be followed-up.
- Mechanisms to contact and follow-up women who miss a scheduled appointment. Telephone calls, letters, or personalized methods can be used, such as visits by health agents or “navigators” (see box below).

Using patient navigators to overcome health system barriers

Patient navigation involves the provision of logistical and emotional support to ensure continuity of care in the diagnosis and treatment processes for women with abnormal screening test results, or women diagnosed with cancer. Patient navigation also includes support for gaining access to health services and overcoming barriers to attaining appropriate and timely care (Wells KJ *et al.* 2008). The objective is to reduce delays in access to the care process, emphasizing timely access to diagnosis and treatment, and the reduction of dropouts from the process.

The origin of this strategy comes from a case management model that includes four components:

1. Case identification: establish a systematic procedure to identify individuals with abnormal results or cancer that need follow-up care.
2. Contact patients and gather information concerning the barriers to the continuity of care for diagnosis and treatment.
3. Individualized strategy to overcome the barriers identified.
4. Systematic follow-up of each case until the problem is resolved and the woman receives complete diagnosis and treatment.