# Chapter 3: Screening

| Learning Objectives | On completion of this section, the learner will be able to:<br>1. Describe who should have a Pap test and how frequently.<br>2. Identify who should be excluded from Pap tests and who should have increased surveillance. |
|---|---|

In January, 2013, CervixCheck updated its screening guidelines for cervical cancer. The new guidelines were announced alongside the new recommendations made by the Canadian Task Force on Preventive Health Care. Changes were made to the recommendations for screening initiation and screening interval. The guidelines are based on the most recent epidemiological data on human papillomavirus (HPV) and cervical cancer, and aim to maximize the benefits of screening while minimizing the harms.

## Who Should Have a Pap Test and How Frequently?[1]

It is important to be familiar with the timing and frequency of Pap tests. The following section outlines the cervical cancer screening guidelines for eligible clients in Manitoba.

| General Guidelines | |
|---|---|
| Initiation of screening | • All women who are, or have ever had sexual contact including oral, genital or rectal skin-to-skin contact, or sex with sex toys, should be screened with Pap tests every 3 years, starting at age 21.<br>• Women who have not had sexual contact by age 21 should delay screening until sexually active.<br>• Transgender males and females may also need regular cervical cancer screening. |
| Routine screening | • Screen every 3 years. |
| Cessation of screening | • Screening can be discontinued if the client is 70 years and older and has had 3 or more 3 consecutive Negative Pap test results in the previous 10 years.<br>• Those 70 years and older who have never had a Pap test, should have three consecutive Pap tests one year apart. If these are reported as negative, Pap test screening may be discontinued at the discretion of the caregiver.<br>• Screening can be discontinued after a total hysterectomy as per the guidelines below. |

## INITIATION OF SCREENING

### Background

Infection with human papillomavirus (HPV) is the main risk factor for cervical cancer and is the most prevalent sexually transmitted infection in Canada.[2] 80% of Canadians will have at least one HPV infection within their lifetime. Persistent HPV infections with the same HPV genotype may cause cervical dysplasia, and if left untreated over time, can progress to invasive cervical cancer. Almost all cervical cancers can be traced to oncogenic HPV types; 70% of invasive cervical cancer are caused by HPV types 16 and 18.

The peak incidence of HPV occurs in women under 25 years of age.[3] However, over 90% of HPV infections regress within 24 months without symptoms or intervention.[2 4] It is not clear if "*Viral "clearance"* means that an individual's immune system completely eliminates HPV infection or reflects *Latency* where the amount of virus reduced to levels undetectable with current diagnostic methods. HPV infections are very common in the lifespan of any individual with a lifetime probability of over 80% (*Koutsky)*. Persistent infection with the same HPV genotype is a necessary risk factor to develop a high-grade cervical precancer abnormality.[5]

It is not clearly understood why HPV infections "resolve" in certain individuals and disease (cervical abnormalities) develops in others. Disease is a rare consequence of a common infection.

When progression occurs, it happens over a long period of time. One study showed that the mean time for progression from LSIL to HSIL was as long as seven years.[6] Approximately 15% of Pap tests in women under the age of 21 in Manitoba will be reported as either low-grade squamous intraepithelial lesion (LSIL) or atypical squamous cells of undetermined significance (ASCUS).[7]

High-grade squamous intraepithelial lesions (HSIL) represent less than 4% of Pap tests in women under the age of 21 in Manitoba.[5] Cervical cancer in young women is very rare. Since 1980, 0.18% of invasive cervical cancers were diagnosed in women under 21.[5] As well, there is a long latent period between exposure to HPV infection and the development of precancerous lesions and invasive cervical cancer. Therefore, delaying the onset of screening young women will still provide the opportunity to detect and treat these lesions if they occur.

**Recommendation**
Screening should be initiated at 21 years of age for all clients who have ever had sexual contact. Transgender males and females may also need regular cervical cancer screening. Health care providers should discuss the benefits and harms of screening with their patients.

**Rationale**
The harms of screening women under 21 years of age outweigh the benefits.

- Pap tests and follow-up procedures, particularly loop electrosurgical excisions (LEEP) or cone biopsy procedures, expose young women to anxiety and harms including reduced reproductive performance (preterm delivery, low birth weight, increased caesarean section rate, and premature rupturing of membranes).[8] "The emotional impact of labeling an adolescent with both a sexually transmitted infection and a potential pre-cancer must be considered because adolescence is a time of heightened concern for self-image and emerging sexuality."[9]
- Cervical cancer in young clients is very rare. Since 1980, 0.18% of invasive cervical cancers in Manitoba were diagnosed in women under 21.[10]
- Most cytological abnormalities in young women are low-grade and non-oncogenic. 90% will spontaneously regress within 24 months.[11,12]
- The latency period between HPV infection and the development of precancerous lesions and invasive cervical cancer is approximately 7 to 10 years.[13] Delaying the start of screening young clients still provides the opportunity to detect and treat lesions.

Although the Canadian Task Force on Preventive Health Care recommends not routinely screening women aged 20-24, a "weak recommendation is assigned due to the uncertainty of the evidence. Screening may still be minimally effective to reduce cervical cancer incidence in this age group.[14] Initiating screening at 21 years of age is consistent with the recommendation made in most other Canadian provinces and territories, and is also the recommendation made by the U.S. Preventive Services Task Force. CervixCheck will continue to respond to the evolving evidence to support screening guidelines.

Some sexually active clients may choose to delay onset of screening until 25 years of age. The decision to delay should take into consideration patients' values, preferences and beliefs.

## SCREENING INTERVAL (ROUTINE SCREENING)

**Recommendation**
In the absence of abnormal cytology, routine screening should be performed every 3 years. Health care providers should discuss the benefits and harms of screening with patients.

**Rationale**
Screening every 3 years maintains the benefits of screening while decreasing the harm from over-screening.

- Shorter screening intervals (1-2 years) do not significantly decrease the incidence of cervical cancer more than screening every 3 years.[15] [16] [17] [18] [19] Annual screening significantly increases the number of women who are sent for further tests which increase the harms of screening.
- Most countries recommend a 3-5 year interval.

CervixCheck will continue to monitor and follow-up on all abnormal Pap test results where the recommended management is absent. CervixCheck also sends reminder letters to clients who are overdue for a Pap test.

The greatest reduction in cervical cancer will be achieved by screening eligible women who have not previously been screened, not by screening women earlier or more often.

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## CESSATION OF SCREENING

The decision to discontinue screening for clients 70 years and older must take into consideration the individual's screening history.

Screening can be discontinued if a client has had 3 consecutive negative Pap tests in the previous 10 years.

Clients who are 70 years and older who have never had a Pap test, should have three Pap tests one year apart. If these are reported as negative, Pap test screening may be discontinued at the discretion of the caregiver.

The recommendation to discontinue screening in clients 70 years and older is based on evidence that:

- clients with multiple prior consecutive negative cytology results are at low risk for cervical cancer, and
- false positive cytology results incurred from mucosal atrophy in post-menopausal women produces potentially unnecessary follow-up and anxiety in this population.[20]

When providing service to clients 70 years and older, HCPs should:

- obtain a thorough health history to determine whether or not Pap tests are still warranted, and
- provide education about the benefits and risks of continuing to be screened past 69 years of age.

## INDIVIDUALS WHO HAVE NEVER BEEN SEXUALLY ACTIVE

If the HCP determines that an individual has never had sexual intercourse or skin-to-skin contact of the anus, genitals or mouth, the HCP should focus on educating them about the benefits of regular screening once they do become sexually active. The decision to start screening should be mutually agreed upon between the patient and HCP.

| | |
|---|---|
| HPV transmission occurs through sexual intercourse as well as through skin to skin genital contact. Sexual activity includes oral sex, sex with fingers or hands, genital rubbing and sex with sex toys. HCPs should be sensitive to circumstances where sexual abuse may have occurred and may prevent a client from discussing, remembering or defining sexual activity as such. | Important Information |

**CLIENTS WHO HAVE HAD THE HPV VACCINE**

All clients who have ever been sexually active and have received an HPV vaccine should begin routine screening at age 21. Routine screening should occur every 3 years.

**CLIENTS WHO ARE PREGNANT**

Screening during pregnancy may produce a significant number of false positive results. Screening pregnant clients, is unnecessary if:

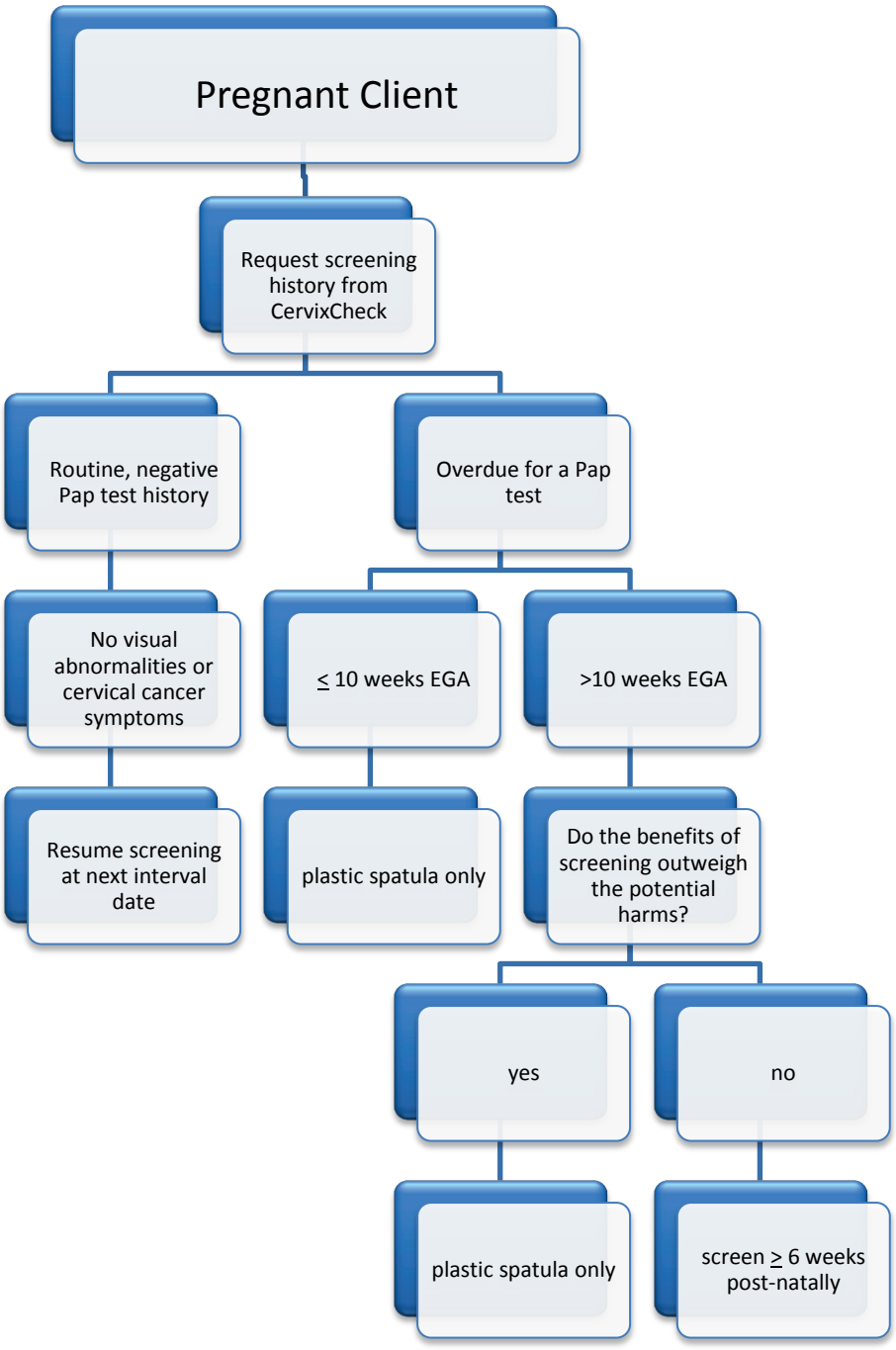
- they have had routine negative Pap tests (screening histories can be obtained from CervixCheck), and
- they have no symptoms of cervical cancer and/or no visual abnormalities of the cervix.

If the HCP determines a Pap test may be necessary due to the client's screening history:

- aim to screen during the first 10 weeks of pregnancy.
- If the client is over 10 weeks pregnant, the benefits of screening should outweigh the potential harms.
- Only the plastic spatula should be used.

*If only conventional sampling devices are available, a wooden spatula in combination with a saline-moistened cotton swab should be used. The cytobrush is contraindicated in pregnancy. Conventional specimens must be applied to a glass slide.

Where a pregnant client's history is suggestive of cervical cancer the client should be examined. If a visual abnormality is present the client should have a biopsy.




***The cytobrush is contraindicated during pregnancy.**

## CLIENTS WHO HAVE HAD A HYSTERECTOMY

Screening of the vaginal vault (broom or spatula) is unnecessary if the client meets all of the following conditions:

- They have had a total hysterectomy (as opposed to a subtotal hysterectomy)
- Hysterectomy was performed for a benign disease (pathology negative for high-grade dysplasia)
- They have had no previous high-grade dysplasia results

If no previous Pap test record is available and/or no pathology is available from the hysterectomy specimen, the client should have two consecutive, Negative vault results one year apart before discontinuing screening.

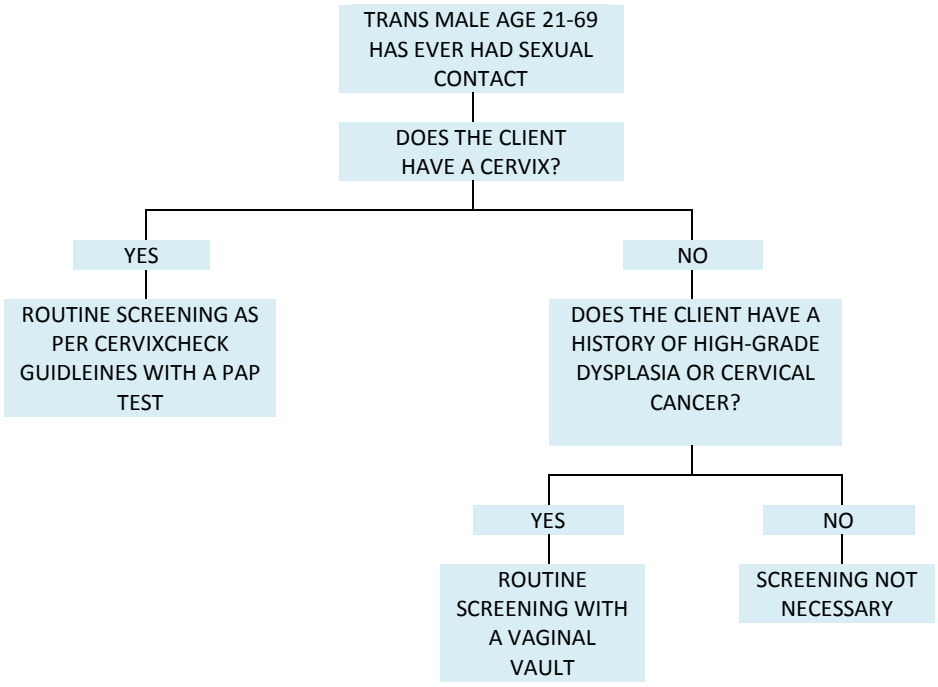
## LESBIAN WOMEN OR WOMEN WHO HAVE SEX WITH WOMEN (WSW)

Lesbian women and WSW have a lower incidence of HPV and invasive cervical cancer. Nevertheless, this population is still at risk. Screening for cervical cancer among lesbian women and WSW should be consistent with screening guidelines for women who have sex with men; screening should occur every 3 years (routine screening).

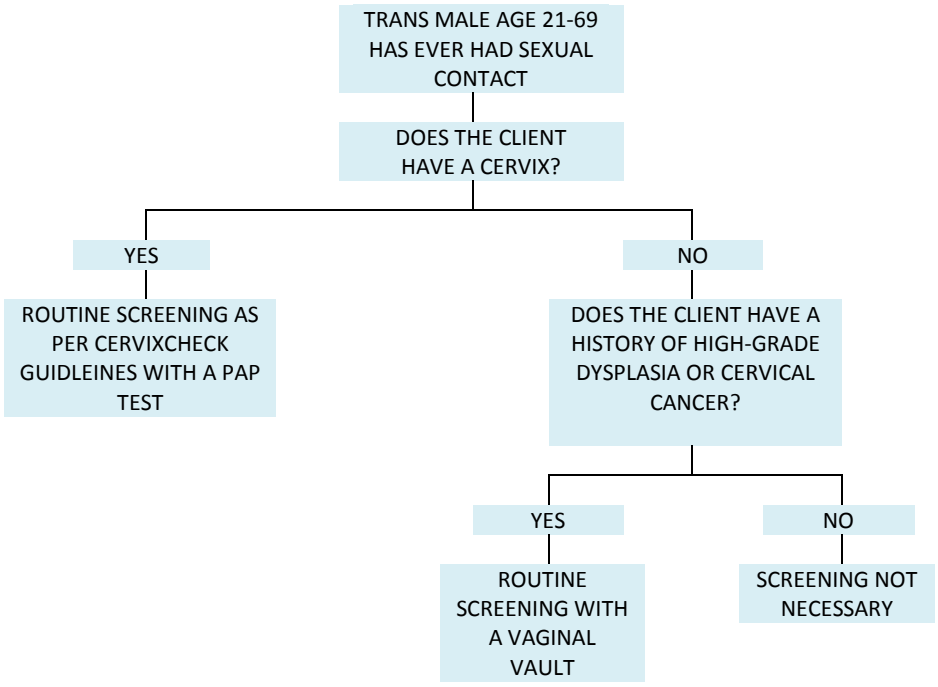
## THE TRANSGENDER CLIENT

Screening the transgender client may be necessary. A careful health history should be taken by the HCP to determine if the HCP should proceed with cervical cancer screening, and if so, with a vault smear or a conventional Pap test. Routine screening should occur in the following scenarios:

## TRANS MALE


TRANS MALE AGE 21-69 HAS EVER HAD SEXUAL CONTACT
DOES THE CLIENT HAVE A CERVIX?
YES
NO
ROUTINE SCREENING AS PER CERVIXCHECK GUIDLEINES WITH A PAP TEST
DOES THE CLIENT HAVE A HISTORY OF HIGH-GRADE DYSPLASIA OR CERVICAL CANCER?
YES
NO
ROUTINE SCREENING WITH A VAGINAL VAULT
SCREENING NOT NECESSARY

## TRANS FEMALE



**CLIENTS WHO REQUIRE INCREASED SURVEILLANCE**

The following outlines patient characteristics that warrant increased surveillance and provides management recommendations for each of these characteristics.

| Patient Characteristics | Recommendations |
|---|---|
| **Recent abnormal Pap test result** | Follow up as per the CervixCheck Screening Guidelines "Management of Cytology Results" |
| ***Previous high-grade cervical pathology result (≥HSIL/CIN2/moderate dysplasia)** | Screen every year *once discharged from colposcopy*. There is no evidence to support how long a client should be screened annually. A conservative approach would be to screen annually until the client is 69 years of age and can discontinue if results are Negative in previous 10 years. |
| **Immunosuppressed or HIV positive.**<br>Immunosuppresion is:<br>○ CD4 count of < 400 in HIV-positive women, or<br>○ Transplantation with immunosuppressive therapy > 3 years | Screen every year<br><br>**All** cytological abnormalities (including low-grade lesions) should be referred to colposcopy |
| **Exposure to diethylstilboestrol (DES)[21] in utero** | Screen every year with cytology and colposcopy of cervix and vagina |
| **Previous endometrial cancer** | Screen annually for five years after treatment. Screening can discontinue if all Pap test results are negative |
| **Previous ovarian cancer** | Screening can be discontinued following complete hysterectomy |
| **Previous cervical cancer** | Continue screening annually for as long as the client is biologically healthy |

*Cervical histopathology specimens have historically been reported using a variety of terminology systems. Squamous abnormalities have generally been reported using terms including “dysplasia”, “cervical intraepithelial neoplasia” (CIN) and “squamous intraepithelial lesions”. Recently, the Pan-Canadian Cervical Screening Network (Canadian Partnership Against Cancer) reported on and published Canadian consensus statements for reporting on histopathology specimens from the cervix and vagina[22]. Manitoba cytology labs have adopted these consensus statements. The following table provides the current cervical histopathology nomenclature, and correlates it to previous reporting terminology.

**Cervical histopathology nomenclature correlations**

<table>
<tr><th>Dysplasia terminology</th><th>CIN terminology</th><th>2014 Consensus Statements (current)</th></tr>
<tr><td>Normal</td><td>Normal</td><td>Negative</td></tr>
<tr><td>Mild dysplasia</td><td>CIN 1</td><td>Low-grade squamous intraepitheleal lesion (LSIL)</td></tr>
<tr><td>Moderate dysplasia</td><td>CIN 2</td><td rowspan="3">High-grade squamous intraepitheleal lesion (HSIL)</td></tr>
<tr><td>Severe dysplasia</td><td>CIN 3</td></tr>
<tr><td>Carcinoma in-situ</td><td>CIN 3</td></tr>
<tr><td>Dysplasia NOS</td><td>CIN NOS</td><td>Squamous intraepitheleal lesion (SIL), Ungraded</td></tr>
<tr><td>Adenocarcinoma in-situ (AIS)</td><td></td><td>High-grade adenocarcinoma intraepithelial lesion</td></tr>
<tr><td rowspan="2">Invasive carcinoma</td><td rowspan="2">Invasive carcinoma</td><td>Superficially Invasive Squamous Cell Carcinoma (SISCCA)</td></tr>
<tr><td>Invasion</td></tr>
</table>

**Previous High Grade Cytology Results: What's the Recommended Interval?**
In the colposcopic management of high-grade (ASC-H/HSIL) or persistent low-grade Pap test results, a sample of cervical tissue (biopsy) is typically obtained to confirm the diagnosis. A significant proportion of histology outcomes, however, do not correlate with the cytology result. The following provides management recommendations for Pap test results that were over-called (the cytologic impression was more severe than the histological diagnosis), under-called (the cytologic impression was less severe than the histological diagnosis), not correlated (no histological diagnosis is available), or correlated (the cytological impression correlated with the histological diagnosis).

| Cytology result (Pap test) | Histology result (biopsy/ECC) | Recommended screening interval |
|---|---|---|
| **High-grade (ASC-H/HSIL)** | ≤Low-grade squamous intraepithelial lesion (Negative/LSIL/mild atypia/CIN 1) | Every 3 years once discharged from colposcopy |
| **High-grade (ASC-H/HSIL)** | ≥High-grade squamous intraepithelial lesion (HSIL/CIN 2/CIN 3/AIS/SISCCA*) | Every year once discharged from colposcopy. There is no evidence to support how long annual screening should continue. A conservative approach would be to screen annually until the client is 69 years of age and can discontinue if the results are negative in previous 10 years. |
| **High-grade (ASC-H/HSIL) that is not necessarily connected to the current biopsy event, ie. A high-grade result in the past that has no existing biopsy related to the event.** | ≤Low-grade squamous intraepithelial lesion (Negative/LSIL/mild atypia/CIN 1) | Every 3 years once discharged from colposcopy (the client may have been pregnant and not referred for colposcopy until result was explored post postpartum, the Pap test may have been overcalled) |

| Cytology result (Pap test) | Histology result (biopsy/ECC) | Recommended screening interval |
|---|---|---|
| **High-grade (ASC-H/HSIL)** | No biopsy/histopathology | There is no evidence to support a recommended interval. A very conservative approach would be to screen every year. The clinician may consider extending the interval after a few years if all results are negative. This decision should be made in consultation with the client and align with their values and preferences. |
| **High-grade (ASC-H/HSIL)** | Cervical cancer | After treatment for cervical cancer, clients should continue screening annually as long as they are biologically healthy. The age of screening cessation for those with a history of cervical cancer is not well defined. |

*Superficially Invasive Squamous Cell Carcinoma

## Key Messages for Health Care Providers

- 90% of HPV infections will spontaneously regress within 2 years.
- High grade lesions and cervical cancer are very rare in young clients <21 years of age.
- There is a long latent period between exposure to the HPV infection and the development of precancerous lesions and invasive cervical cancer.
- Annual screening offers little benefit over screening performed at 2 to 3 year intervals and exposes clients to unnecessary risks and anxieties.
- The sensitivity of the Pap test is about 51% and the specificity is about 98%.

## Benefits & Harms of Cervical Screening: Facilitating Informed Decision Making

The CervixCheck screening guidelines aim to ensure clients receive the greatest benefit from cervical cancer screening and avoid unnecessary tests. This balance is achieved when we can identify cervical cancer precursors likely to progress to invasive cancer (**maximizing the benefits)**, and avoid the detection and unnecessary treatment of transient HPV infection and its associated benign lesions that are not destined to become cancerous (**minimizing the potential harms**).

HCPs should facilitate a discussion with clients about the benefits and harms of screening with Pap tests. The goal of the client-HCP discussion is to:

- foster an **understanding** of the Pap test, its benefits and potential harms, and
- support **client participation** in the clinical decision; one that is **informed** and consistent with the individual's **preferences and values.**

For example, a 21 year old female who only recently became sexually active is very anxious about her first Pap test. After reading a brochure about cervical cancer, she realizes her risk for developing cervical cancer at her age is very low. She wonders if she needs to be screened this year given that this is the recommendation, but her fear about the test continues to make her very anxious.

A discussion between the HCP and the patient would highlight the individual's fears and anxieties about the Pap test, as well as the individual's recent onset of sexual activity. With these factors under consideration, and after a discussion about the benefits and harms of screening with the Pap test, the HCP and client decide together to delay screening for another year. In the meantime, the HCP provider will continue to educate and counsel them about the Pap test, ensuring that when the time comes for the first Pap test, they are informed and feel ready to perform the procedure.

CervixCheck can support you to discuss the benefits and harms of Pap tests with patients. Order our patient tear-off "Pap testing in Manitoba has changed: What you need to know."

The following chart outlines the benefits and harms of screening with the Pap test.

| Benefits | Harms |
|---|---|
| • Observational data have shown declines of up to 80% in cervical cancer mortality following introduction of organized screening with Pap tests<br>• Cervical dysplasia can be removed with procedures during colposcopy<br>• Detecting cancer at an early stage may result in simpler treatment, more treatment options, and less need for chemotherapy | • False positives<br>• False negatives<br>• Screening and follow up may cause anxiety<br>• Discomfort or bleeding may result from the Pap test or colposcopy<br>• Treatment with cold knife conisation and large loop excision of the transformation zone (LLETZ) may increase a woman's risk for pre-term delivery, low birth weight, caesarean section, and premature rupturing of membranes during future pregnancies |

## Recommended Reading

**CervixCheck Resources** (cancercare.mb.ca/screening/resources)
CervixCheck Screening Guidelines
Understanding the New Screening Guidelines for Cervical Cancer
Managing the screening history of clients under 21
Pap testing in Manitoba has changed: What you need to know (patient tear off)

## Chapter 3 Self-Test

1. Who should have a Pap test and how frequently?
2. Describe the screening guidelines for pregnant women.
3. What are the requirements for not screening the vaginal vault after a hysterectomy?
4. Who should be excluded from Pap tests?
5. Who should be on increased surveillance?

## References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