Cervical Screening

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1 Background Information

1.1 Introduction

Cancer of the cervix is widely recognised as one of the most preventable cancers. Primary prevention in the form of vaccination against the two most common types of human papillomavirus (HPV) was implemented in Australia in 2007. Secondary prevention, namely cervical screening is also available through a reliable screening test (the Pap test), which can detect early changes in the cervix before they have a chance to develop into cancer.

Regular Pap tests are known to reduce incidence and mortality rates of invasive cervical cancer. Research suggests that up to 90% of the most common form of cancer of the cervix, squamous cell carcinoma could be prevented if all women had regular Pap tests every two years (Hakama et al 1986).

1.2 The Pap test

The Pap test is named after the man who developed it in the 1930s, Dr George Papanicoleau. The Pap test became available to Australian women in the 1960s. A Pap test involves collecting a sample of cells from the cervix, that can be examined by a cytologist and/or pathologist to check for changes or abnormalities in the cells. It is designed to detect or find early changes in cervical cells which can be treated to prevent cancer developing. These early changes are not cancer, but if they are not monitored or treated appropriately, they may develop into cancer. Evidence shows the majority of women who develop cancer of the cervix have not had regular screening, or have never had a Pap test (Victorian Cervical Cytology Registry, 2007).

How often should women have a Pap test?
All women who have ever had sexual intercourse should commence having Pap tests between the ages of 18 – 20, or within two years after first sexual intercourse, whichever is later. Women should continue having regular two yearly Pap tests until the age of 70, provided they have had two normal Pap tests in the previous 5 years.

Pap tests after hysterectomy
A hysterectomy is a surgical operation to remove the uterus (womb). Hysterectomies may be performed because of abnormal bleeding, prolapse, benign tumours such as fibroids, damage to the uterus during childbirth or surgical procedures, or cancer.

Whether a woman needs to have a Pap test following hysterectomy depends on:
- whether she still has a cervix
- why the hysterectomy has been performed
- whether the Pap test was normal before the operation.

When the cervix was removed during the operation, a woman MAY need to have Pap test from the vault (top) of the vagina if:
- the hysterectomy was performed because of cancer of the uterus or cervix or abnormal cells were found at the time of surgery
What is involved in having a Pap test?

**Step 1**
A General Practitioner, nurse pap test provider or gynaecologist can conduct a Pap test. Pap test providers receive specialised training in women’s health and the provision of Pap tests. For the purpose of this resource the term Pap test provider will be used to describe the health professionals that provide Pap tests and include all the above mentioned health professionals.

Before proceeding with a Pap test, the Pap test provider should provide the woman with information about the Pap test procedure and ensure she is comfortable, both physically and emotionally. This is important as some women may not fully understand why they are having a Pap test, while others may find the procedure frightening and embarrassing. For this reason the Pap test provider should explain why a Pap test is necessary and emphasise the preventive function of the procedure, especially if it is a woman’s first Pap test or she has not had one for a long time. The woman also needs to know that she can ask for the procedure to be explained every step of the way and she can ask for the procedure to be stopped at any time. This may reduce a woman’s anxiety, vulnerability and fear during a Pap test. A Pap test procedure may feel uncomfortable but it should not hurt or be painful. The woman should tell the provider at the time of and/or during the procedure if they experience or feel any pain.

**Step 2**
The Pap test is performed in a private room. The room will be partitioned by a curtain which will be able to be opened or drawn. In the room there will either be a gynaecological examination couch or an examination table covered with a sheet. There will also be a cover sheet placed on the examination table. This often provides extra privacy and may minimise the woman’s feeling of over-exposure. If a woman feels that she would like to have someone with her while she is undergoing the examination, she can do so. This person could be a family member, a friend, a health worker, an interpreter or another person that a woman feels comfortable to bring along. Privacy can still be maintained by the use of the partitioning curtain.

**Step 3**
When a woman is ready she is asked to go to the examination table, close the curtain, take off her underpants and lie on her back on the examination table leaving her skirt/dress/blouse on and place a cover sheet over her body from her waist down.

**Step 4**
The Pap test provider will enter the room and will ask the woman to rest her arms across her stomach or by her side. The woman will be asked to bend her knees under the sheet and relax her knees out. This is the most common position that will be suggested, but there are other alternative positions that the Pap test provider may use or suggest. The Pap test provider will ask the woman to try to relax and breathe slowly through her mouth as this helps the muscles relax and makes the Pap test experience more comfortable.

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**Step 5**
The Pap test provider will put gloves on, gently part the labia and inspect the area around the vagina. The Pap test provider will examine the area for any changes or abnormalities.

**Step 6**
The Pap test procedure should take only a few minutes. The Pap test provider will insert a speculum (an instrument that helps to open the vaginal walls so the cervix can be viewed) into the woman’s vagina. The end of the speculum is placed gently into the vagina. Some women may experience a little discomfort at that stage. Speculums can be made of plastic (disposable) or metal. Metal speculums can be cold so some Pap test providers will warm the speculum under running water which makes insertion more comfortable. Women should let the PSP know if this procedure is uncomfortable or painful.

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**Step 7**
The Pap test provider will open the speculum so that he/she can obtain a good view of the cervix. If he/she cannot see the cervix the woman may be asked to lift her
bottom a little or put her hands underneath her hips/bottom to help improve the view of the cervix. Once the speculum is in place it may feel a little uncomfortable. This should not be painful, however if a woman experiences a lot of discomfort or pain when the speculum is in place she should inform the Pap test provider straight away, so that the discomfort can be eased.

**Step 8**

Once the Pap test provider can see the cervix clearly he/she collect cells from the cervix using a spatula, cytobrush or cervix brush. The type of instrument or instruments used depends on the Pap test provider’s preference or the appearance of the cervix. The cells are collected from the outside of the cervix and from the cervical os. Some may feel an unusual sensation like pressure, when this is being performed. Some women may feel discomfort but the procedure should not be painful.

**Sampling instruments**

- Spatula (wood or plastic)
- Endocervical brush
- Cervical sampler broom
- Cervex-Brush® Combi
- Hybrid Capture® Brush
Step 9
The Pap test provider wipes the collected cells from the cervix onto a glass slide, sprays the slide with a special solution, labels it and sets it aside to send to the laboratory. The Pap test provider may also put the collection tools into a Thin Prep vial* to be sent for further testing especially if there is inflammation or blood present when the Pap test is collected. At this point the Pap test provider may suggest that other swabs or tests be taken as well. A woman can ask what is being done and why.

Step 10
The speculum is now closed and gently removed from the vagina.

Step 11
Sometimes the Pap test provider will also conduct an internal pelvic examination after collecting the Pap test. The Pap test provider will place one hand on the woman’s stomach and then insert two gloved fingers gently into her vagina. The Pap test provider usually uses a lubricant (gel) for this procedure. He/she will then press on the woman’s lower abdomen with their hand and fingers to feel if the organs
(uterus and ovaries) are the right size and shape. This examination may feel a little uncomfortable but should not hurt.

**Step 12**
The procedure is over. Some women experience very slight bleeding from the vagina afterwards. The Pap test provider will give them some tissues to wipe any lubricant or fluids away from the genital area. Sometimes a woman may also need a pad or tampon to wear afterwards. If this is the case the Pap test provider should supply this. At this point a woman will be informed that the Pap test has been completed and she can now get dressed.

**Step 13**
Once the woman is dressed, the Pap test provider will talk with the woman about the examination and how to get her results. The Pap test provider should also inform the woman about the Victorian Cervical Cytology Registry and her choice to opt-off the Register if she wishes. Depending on her previous history and the Pap test results, the Pap test provider will advise a woman when her next Pap test is due.

### Sampling instruments

- **Spatula (wood or plastic)**
- **Endocervical brush**
- **Cervical sampler broom**
- **Cervex-Brush® Combi**
- **Hybrid Capture® Brush**

#### Equipment used during a Pap smear

- **Cervix brush/sampler**
  Long-handled fine, soft brush for collecting cells from the endocervix and ectocervix.

- **Cyto brush**
  Long-handled fine brush for collecting cells from the endocervix.

- **Spatula**
  Flat, long-handled wooden or plastic sampler for collecting cells from the ectocervix.

- **Cervex Brush Combi**
  Long handled combination brush for collecting cells from both the endocervix and ectocervix.

- **Glass slide**
  Small slip of prepared glass on which cells from the cervix are placed for laboratory examination.
Gloves
Vinyl or latex coverings for the hands for hygienic reasons.

Thin Prep ® vial
Plastic container containing preservative fluid in which the Pap test collection tools are rinsed. This is used if the Pap test provider is concerned that the cells on the glass slide may be difficult to read at the laboratory due to the presence of inflammation or blood in the sample.

Speculum
A metal or plastic instrument inserted into the vagina to hold vaginal walls open for the Pap test provider to see the cervix. Only the lips of the speculum go into the vagina. The handle remains on the outside and is for the Pap test provider to use to gently open the speculum. Metal speculums used during a Pap test undergo sterilisation, according to Australian standards, before being reused. Plastic devices are used once and then thrown away.

1.3 Pap test Results

The following section describes the most common Pap test results reported following a Pap test. This information has been adapted from “A Guide for women with an abnormal Pap test. Pap test Results” (2005) National Cervical Screening Program.

The Pap test provider will usually receive the Pap test result within two to four weeks depending upon the location of the clinic and where is tested.

About one in every ten Pap test results will have a comment or indicate some kind of problem. Many of these are not serious and most cell changes in the cervix are not due to cancer.

Sometimes the Pap test report will indicate that the sample was unsatisfactory. This may happen for a variety of reasons:

- the cells may be obscured by blood or inflammation/mucous
- there may not be enough cells on the sample to give an accurate assessment
- the smear may not have been properly prepared, or
- the slide may have broken during transit to the laboratory.

If any of these problems occur, a woman will be asked to have another Pap test in approximately 12 weeks. This allows time for the cells of the cervix to be renewed so that there will be enough cells available for a good sample.

Inflammation
Sometimes a Pap test will show signs of inflammation. This means that the cells of the cervix are slightly irritated.

This irritation may be caused by an infection caused by a bacteria or a fungus (eg Candida which causes ‘thrush’). Sometimes the cause of the inflammation may be detected by the Pap test; however other tests may be performed so that the cause can be identified and treated.
**Endocervical cells**

The report from the laboratory may comment on the presence of endocervical cells in the Pap test sample. If these cells are present, it shows that the sample of cells comes from the transformation zone where the squamous cells meet the glandular cells. It is sometimes difficult to get a sample of the cells from the transformation zone particularly when a woman is post-menopausal. This is because the transformation zone tends to moves up into the cervical canal at this time of life.

**Cervical abnormalities**

An ‘abnormal’ Pap test result means that some of the cells of the cervix look different in some way from the normal cells.

These abnormalities can be divided into two main categories, squamous and glandular. Squamous cells are flat, and look like scales or plates through a microscope. They make up the epithelium - tissue that covers or lines the inside parts of the body.

An intraepithelial lesion is a term describing changes to cells of the epithelium caused by disease. The term “disease” in this context does not necessarily mean cancer. In fact, it is much more likely to be a simple infection such as human papilloma virus (HPV).

Glandular cells are those that form a gland, which can secrete or excrete substances. They are also called columnar cells because they look like columns under the microscope.

The following diagram shows the differences in glandular and squamous cells.

None of the abnormalities described in the following table are invasive cancer, but they do indicate that the cells of the cervix may be growing in an unhealthy way.

The table below explains the technical terms used to describe abnormal Pap test results and gives a summary of the courses of action that the Pap test provider will recommend if a woman has an abnormal result. These recommendations are based on the NHMRC: Screening for Cervical Cancer. Guidelines for Asymptomatic Women with Screen Detected Abnormalities (2005). If a woman has symptoms or special circumstances that the Pap test provider is aware of, the Pap test provider may recommend alternative follow-up.
<table>
<thead>
<tr>
<th>Terms used in describing results</th>
<th>What it means</th>
<th>What happens next</th>
</tr>
</thead>
<tbody>
<tr>
<td>Possible low-grade squamous intraepithelial lesion (Possible LSIL)</td>
<td>This category is used when the reporting scientist/pathologist sees changes in cells that may represent a low-grade squamous intraepithelial lesion, but the changes are not clear enough to justify a ‘definite’ diagnosis.</td>
<td>The woman will be advised to have another Pap test in 12 months time unless she has had a previous abnormality or is over 30 years of age and has not had a Pap test in the last 3 years.</td>
</tr>
<tr>
<td>Low-grade squamous intraepithelial lesion (LSIL)</td>
<td>Describes changes that are consistent with HPV infection.</td>
<td>If a woman is over 30 years of age and has not had a Pap test at all in the last 2 or 3 years, or has had abnormal Pap test in that time, she will either have a follow up Pap test in 6 months, or be referred for a colposcopy. If this is woman’s second Pap test result with LSIL (definite or possible) the Pap test provider will refer the woman for a colposcopy.</td>
</tr>
<tr>
<td>Possible high-grade squamous lesion (Possible HSIL)</td>
<td>The presence of a high-grade abnormality is suspected but not definite.</td>
<td>The Pap test provider will refer the woman for colposcopy.</td>
</tr>
<tr>
<td>High-grade squamous intraepithelial lesion (HSIL)</td>
<td>The high-grade squamous intraepithelial lesion (HSIL) category describes pre-cancerous changes resulting from HPV infection.</td>
<td>The Pap test provider will refer the woman to a gynaecologist for colposcopy.</td>
</tr>
<tr>
<td>Atypical endocervical cells of undetermined significance</td>
<td>Changes that do not suggest the possibility of cancer but are unusual.</td>
<td>The Pap test provider will refer the woman to a gynaecologist or gynaecological oncologist for a colposcopy.</td>
</tr>
<tr>
<td>Atypical glandular cells of undetermined significance</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Possible high grade glandular lesion</td>
<td>This description is used when a high grade glandular abnormality is suspected but it is not possible to make a confident prediction of cancer.</td>
<td>The Pap test provider will refer the woman to a gynaecologist or gynaecological oncologist for a colposcopy.</td>
</tr>
<tr>
<td>Endocervical adenocarcinoma in situ</td>
<td>This describes an abnormality inside the canal of the cervix. In situ means the abnormal cells have not extended into deeper tissue or surrounding areas.</td>
<td>The woman will be referred to a gynaecologist or a gynaecological oncologist for a colposcopy and treatment.</td>
</tr>
</tbody>
</table>

Low and high grade abnormalities are most often found in women aged between 25 and 35 years. However, they also occur in both younger and older women. For many women, especially those with low grade abnormalities, the problem will resolve without treatment with the cells of the cervix returning to normal over time.

High grade abnormalities can also regress (go back to normal) however this does not occur as often. High grade abnormalities are more likely to progress although it is usually a long time (more than 10 years) before a serious abnormality such as invasive cancer develops. It is impossible to predict whether the abnormality will return to normal or develop into cancer. Therefore additional tests, such as
colposcopy, are required to confirm the diagnosis and inform if further treatment is warranted.

**Cervical cancer**

Sometimes the results of the Pap test indicate cervical cancer. Cervical cancer can be either squamous cell carcinoma or less likely, adenocarcinoma.

The table below explains the technical terms used to describe cervical cancer and gives a summary of the recommended courses of action.

<table>
<thead>
<tr>
<th>Terms used in describing results</th>
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<th>What happens next</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Squamous cell carcinoma</strong></td>
<td>The presence of cancer in the squamous cells of the cervix.</td>
<td>The Pap test provider will refer the woman to a gynaecological oncologist or gynaecological oncology unit for evaluation and treatment.</td>
</tr>
<tr>
<td><strong>Adenocarcinoma</strong></td>
<td>A rare high grade abnormality affecting the glandular or columnar cells of the cervix rather than the squamous cells.</td>
<td>The Pap test provider will refer the woman to a gynaecologist or a gynaecological oncologist for a colposcopy to confirm the result and discuss treatment options with her.</td>
</tr>
</tbody>
</table>

### 1.4 Where are Pap tests available?

It is important to know where women can access Pap test providers in Victoria. For a database of all Pap test providers in Victoria refer to the PapScreen Victoria website at [www.papscreen.org.au](http://www.papscreen.org.au) and “search for a provider”. Alternatively contact 13 11 20 for cancer information and support service counsellor to provide details.
2. References


2.1 Additional Reading


