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 smear), which can detect early changes in the cervix before they have a chance to develop into cancer.

Regular Pap smears 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 smears every two years (Hakama et al 1986).

1.2 The Pap smear

The Pap smear is named after the man who developed it in the 1930s, Dr George Papanicoleau. The Pap smear became available to Australian women in the 1960s. A Pap smear 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. Research has shown the majority of women (three out of four) who develop cervical cancer have not had a Pap smear or have not had one regularly (Commonwealth Department of Health and Family Services, 1998).

How often should women have a Pap smear?

All women who have ever had sexual intercourse should commence having Pap smears 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 smears until the age of 70, provided they have had two normal Pap smears in the previous 5 years.

Pap Smears 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 smear following hysterectomy depends on:

- whether she still has a cervix
- why the hysterectomy has been performed
- whether the Pap smear was normal before the operation.

When the cervix was removed during the operation, a woman MAY need to have Pap smears 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

• it is not known why the hysterectomy was performed

• the woman had abnormal Pap smears in the past

• the woman does not know if she had abnormal Pap smears

• the woman is taking medication which suppresses the immune system, eg cortisone prescribed for asthma or arthritis

• the woman was exposed to the drug Diethyl-stilboestrol before she was born. (This drug was prescribed for pregnant women in the 1950s and 1960s to prevent miscarriage). (NHMRC 2005)

What is involved in having a Pap smear?

Step 1
The Pap smear provider can be a General Practitioner, Registered or Enrolled Nurse, Health Worker or Obstetrician/Gynaecologist. Pap smear providers receive specialised training in women’s health and the provision of Pap smears. For the purpose of this resource the term Pap smear provider (PSP) will be used to describe the health professionals that provide Pap smears and includes all the above mentioned health professionals.

Before proceeding with a Pap smear, the PSP should provide the woman with information about the Pap smear 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 smear, while others may find the procedure frightening and embarrassing. For this reason the PSP should explain why a Pap smear is necessary and emphasise the preventive function of the procedure, especially if it is a woman’s first Pap smear 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 smear. A Pap smear 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 smear 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 PSP 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 PSP may use or suggest. The PSP will ask the woman to try to relax and breathe slowly through her mouth as this helps the muscles relax and makes the Pap smear experience more comfortable.

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

Step 6
The Pap smear procedure should take only a few minutes. The PSP 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 PSPs 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.
Step 7
The PSP 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 PSP straight away, so that the discomfort can be eased.

Step 8
Once the PSP 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 PSP’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.
Step 9
The PSP 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 PSP 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 smear is collected. At this point the PSP 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 PSP will also conduct an internal pelvic examination after collecting the Pap smear. The PSP will place one hand on the woman’s stomach and then insert two gloved fingers gently into her vagina. The PSP 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 PSP 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 PSP should supply this. At this point a woman will be informed that the Pap smear has been completed and she can now get dressed.

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

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**Equipment used during a Pap smear**

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

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

**Spatula**
Flat, long-handled wooden sampler for collecting cells from the 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 smear collection tools are rinsed. This is used if the PSP 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 PSP to see the cervix. Only the lips of the speculum go into the vagina. The handle remains on the outside and is for the PSP to use to gently open the speculum. Metal speculums used during a Pap smear undergo sterilisation, according to Australian standards, before being reused. Plastic devices are used once and then thrown away.

1.3 Pap Smear Results

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

The Pap Smear Provider (PSP) will usually receive the Pap smear result within two to four weeks depending upon the location of the clinic and where it is tested.

About one in every ten Pap smear 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 smear 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 smear 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 smear 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 smear; 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 smear 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 smear 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 papillomavirus (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 smear results and gives a summary of the courses of action that the PSP 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 PSP is aware of, the PSP 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 smear in 12 months time unless she has had a previous abnormality or is over 30 years of age and has not had a Pap smear in the last 3 years.</td>
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If a woman is over 30 years of age and has not had a Pap smear at all in the last 2 or 3 years, or has had abnormal Pap smears in that time, she will either have a follow up Pap smear in 6 months, or be referred for a colposcopy.

If this is woman’s second Pap smear result with LSIL (definite or possible) the PSP will refer the woman for a colposcopy.

Possible high-grade squamous lesion (Possible HSIL)

The presence of a high-grade abnormality is suspected but not definite.

The PSP will refer the woman for colposcopy.

High-grade squamous intraepithelial lesion (HSIL)

The high-grade squamous intraepithelial lesion (HSIL) category describes pre-cancerous changes resulting from HPV infection.

The PSP will refer the woman to a gynaecologist for colposcopy.

Atypical endocervical cells of undetermined significance

Changes that do not suggest the possibility of cancer but are unusual.

The PSP will refer the woman to a gynaecologist or gynaecological oncologist for a colposcopy.

Possible high grade glandular lesion

This description is used when a high grade glandular abnormality is suspected but it is not possible to make a confident prediction of cancer.

The PSP will refer the woman to a gynaecologist or gynaecological oncologist for a colposcopy.

Endocervical adenocarcinoma in situ

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.

The woman will be referred to a gynaecologist or a gynaecological oncologist for a colposcopy and treatment.

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 smear 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.
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</thead>
<tbody>
<tr>
<td>Squamous cell carcinoma</td>
<td>The presence of cancer in the squamous cells of the cervix.</td>
<td>The PSP will refer the woman to a gynaecological oncologist or gynaecological oncology unit for evaluation and treatment.</td>
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<tr>
<td>Adenocarcinoma</td>
<td>A rare high grade abnormality affecting the glandular or columnar cells of the cervix rather than the squamous cells.</td>
<td>The PSP 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>
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1.4 Where are Pap smears available?

It is important to know where women can access Pap smears and who provides them in your region. Endeavour to ensure choice by providing information on a range of services and service providers. For information on Pap Smear Providers in Queensland email Women's Health Queensland Wide or telephone (07) 3839 9988 or 1800 017 676 (toll free outside Brisbane).
2. References


NSW Cervical Screening Program, 2003

2.1 Additional Reading


2.2 Additional Resources

Healthy Aboriginal Women in mind, body and spirit. Brochure produced by Queensland Government/Queensland Health. Free copies can be obtained from Queensland Cervical Screening Program Phone 07 3234 1596.

Queensland Health Pap Smear Register. Brochure produced by Queensland Government/Queensland Health. Free copies can be obtained from Queensland Cervical Screening Program Phone 07 3234 1596 or 1800 777 790.

Early Detection is the Best Protection. Brochure produced by National Cervical Screening Program. It is a free brochure which can be obtained from the Queensland Cervical Screening Program Phone 07 3234 1596.