Section 2: Population Screening

- 2.1 Principles of Population Screening and the National Cervical Screening Program
2.1 Principles of Population Screening and the National Cervical Screening Program
Organised, population-based cervical screening programs have consistently produced significant reductions in morbidity and mortality from cervical cancer.
Dr George Papanicolaou
Dr George Papanicolaou

- Anatomist studying ovulation in guinea pigs by examining genital tract cells
- Developed science of cytology
- First paper on human cervical cytology in 1928
- Article on the “Pap Smear” in Amer J O&G in 1941 (with Dr Herbert Traut)
  (cells shed by women with cervical cancer observed in vaginal secretions)
- And thanks to Mrs Papanicolaou who had many many Pap smears along the way…
ILLNESS PREVENTION

- **Primary**
  - the prevention of disease occurrence

- **Secondary**
  - the early detection of disease or prevention of disease recurrence

- **Tertiary**
  - the minimisation of the impact of a disease process
Screening - Early Detection

- What is screening?
  - Screening usually falls into the category of secondary prevention. It involves examining and/or testing a population of apparently well individuals to identify risk factors or to detect disease at an earlier stage.

- Why do you screen?
  - By detecting disease at an earlier stage, intervention aims to improve the outcome for the client.
WHO – Fundamental principles of cancer screening programs

- Disease should be common, with high morbidity and mortality
- Effective treatment should be available
- Test procedures should be acceptable, safe, and relatively inexpensive
In Australia:

- Pap smear available 1960s
- Opportunistic screening
- Review of screening in 1988 → only 50% of cervical cancer being prevented (vs 90% possible)
- Organised Approach to the Prevention of Cancer of the Cervix 1991

→ The National Cervical Screening Program 1995
National Cervical Cancer Screening Policy

- Routine screening with Pap smears should be carried out every **two** years for women who have no symptoms or history suggestive of cervical pathology.
- All women who have ever been sexually active should commence having Pap smears between the ages of 18 to 20 years, or one or two years after first sexual intercourse, whichever is later.
The Cervical Screening Pathway

1. Recruitment of women
2. Screening intervals
3. Pap smear provision
4. Pap smear reporting
5. Interpretation and follow-up of results
6. Recall and reminder systems

It is essential that all aspects of the screening pathway are optimised to realise the population benefit
Cervical Screening in Special Circumstances

PREGNANCY

- Pap smear should be offered to every pregnant woman who is due for screening
- Screening up to 28 weeks is appropriate in general, and later in selected women
- No association between Pap smears and miscarriage or pre-term labour

(Refer to Qld Health policy and protocol for cervical screening in pregnancy)
POST-HYSTERECTOMY

a. Sub-total Hysterectomy (i.e. Cervix intact)
   - Normal screening regime
b. Hysterectomy for benign reasons
   - no further screening
c. Unknown smear history
   - baseline vault smear. If negative, no further screening
d. Hysterectomy for CIN 2 or 3
- vault smear at 4-6 months
- annual smears until 2 consecutive negatives
- continue routine screening
- the role of HPV testing requires further investigation (Daling et al 2002)
e. Hysterectomy for genital malignancy
   - ongoing surveillance by gynaecological oncologist
IMMUNOSUPPRESSED WOMEN

e.g. HIV positive, organ transplantation, treatment of autoimmune disease e.g. SLE, ulcerative colitis, asthma

- Any screen-detected abnormality → colposcopy
- Evaluate whole lower genital tract
- Treat by excisional methods
- Follow-up with cytology and colposcopy
- Follow-up annual and indefinite
WOMEN EXPOSED TO DIETHYLSTILBESTROL (DES) IN UTERO

- DES given to pregnant women between 1940 and 1970 to provide luteal support
- Vaginal adenocarcinoma rare, but vaginal adenosis in 45%, structural abnormalities in 25% of women born to these mothers
- Annual cytology and colposcopy of cervix and vagina