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GYNAECOLOGICAL CANCER INQUIRY

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CANCER screening services require a multistep, complex and expensive chain of events to render them effective in any population at risk of a particular disease.

Cancer of the cervix is a prime example of the high cost to the community of a very complex system of screening.

The current screening system relies on the morphological analysis by highly trained scientists and doctors, of cells that are collected from patients by their family doctors.

At present the availability of trained scientists to do the initial screening of these cells is **in crisis** for several reasons;

1. the trained workforce is aging (see ASC survey)
2. there are no university based training programmes,
3. the cost to the laboratories to train new staff is high, and is one reason for the continued high cost of the current test.

In the literature, most of the errors, both false positives and false negatives, are related to the methods of collection and the preparation of cells on glass slides.

The recent introduction of LBC methods, and the addition of image analysis of cells, will minimize these errors, but the cost to the community will remain high, and human errors in interpretation of cellular morphology will remain.

In the 1990's both the WHO and NIH stated that human Papillomavirus is the cause of cervical cancer in humans.

Virtually all (99%) of squamous and glandular cancers of the cervix contain HPV DNA in their cells. This DNA can be detected readily in the cancers and the pre-cancerous cells, using many different automated technologies.

At present in Australia, the integration of this knowledge (the association of HPV with precancerous changes in the cervix was first reported in 1975) into a global strategy for screening the population **has not occurred**.

Using the most sensitive DNA tests to detect HPV, current estimates of the number of females infected in a population is around 12 to 15%.

If it is accepted that HPV is necessary for the development of cancer, then the at risk population can be readily identified, and resources can be channeled to monitor that small group.

A recent article in the Medical journal of Australia 2006, looking at cervix cancer rates in far north Queensland, identified two major factors as the reasons for more cancers in that population compared to the national average.....1, remoteness, which prevented patients accessing services, and 2, cultural issues in aboriginal communities which were a barrier to the appropriateness of current screening methodologies.

All of these problems are resolved with the use of DNA sampling and testing.

Therefore the ideal situation would be

A. PRIMARY SCREENING FOR CERVIX CANCER

All sexually active females can be tested for **high risk HPV** using DNA methodologies. Those who tested positive would go onto to full cytological assessment using the same sample, i.e., liquid based cytology vials.

This option has been proposed in the UK and Europe.

B. SELF COLLECT SAMPLES

All females would be able to collect a sample from their own genital tract, in total privacy and confidentiality, eg using a tampon, and send the sample on to a central laboratory

This overcomes issues of remoteness, education levels, cultural diversity, access to medical services, and availability of female doctors

C. OTHER SEXUALLY TRANSMITTED INFECTIONS

The combination of specific DNA tests for STI's and self collect samples from patients wanting to be screened for those organisms will lead to considerable cost savings and increase the participation rates for all states in the detection of many readily treatable diseases, eg Chlamydia, Gonorrhoea

There are many advantages for the introduction of DNA based screening systems:

Automation, and therefore cost reduction and cost containment,

High specificity and sensitivity

Reproducibility and removal of observer subjectivity

Non-Medicare direct funding with predictable expenditure

Identification of *at risk subpopulation*

Sample collection more varied and robust, eg self collection

Ethnic and cultural issues around sexuality resolved

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