Modernising Cervical Screening in New Zealand

In New Zealand, an organised National Cervical Screening Programme (NCSP) was introduced in 1990, following the Cartwright Inquiry. An 'organised programme' meant that all aspects of screening, from health promotion to smear taking to laboratory testing to treatment services (colposcopy), were co-ordinated through a national centre. Women between the ages of 20 and 70 years were encouraged to enrol in the Programme. Special legislation was enacted for the Programme, policies and standards were developed, a national database (the NCSP Register) was established to capture cervical screening and colposcopy results, and ongoing monitoring and evaluation of the Programme was introduced. Within a very short time New Zealand began to see a consistent downward trend in cervical cancer incidence.

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By 2008, the NCSP had achieved a 50 percent reduction in cervical cancer incidence and 60 percent reduction in mortality. Recent modelling work undertaken by the Cancer Council of New South Wales for the NCSP has shown that about 760 invasive cervical cancers would occur annually in New Zealand in the absence of screening, rather than the approximately 160 currently reported to the New Zealand Cancer Registry. Prevention of cervical cancer has been achieved largely through the detection and treatment of precursor lesions (cytological abnormalities) utilising the conventional Papanicolaou (Pap) smear test, although in recent years an increasing proportion of screening has been done using liquid based cytology (LBC).

As early as the 1960s there were significant advances made in understanding the cause of cervical cancer, but it was not until the late 1970s that certain oncogenic (high risk) types of the human papillomavirus (hrHPV) were identified as the single necessary cause of this cancer (and of the abnormal cytology that precedes it). In the 1990s this discovery led both to the development of the HPV vaccine for primary prevention of cervical cancer and to the availability of HPV tests to improve the clinical management of women with abnormal cytological screening results.

While New Zealand has achieved exceptional results in reducing the burden of cervical cancer through screening with the conventional Pap smear (CPS), this screening test has its limitations. In particular, CPS has limited sensitivity (around 60 percent) for detecting high grade lesions (severe cytological abnormalities). This means that a single screen will not infrequently fail to detect women with significant cytological abnormalities, some of which could potentially progress to cancer – hence the need for repeated screens, typically recommended at three yearly intervals.

HPV testing, on the other hand, has consistently shown sensitivity of more than 95 percent. This means that a negative HPV test has a lower risk of failing to detect an underlying high grade lesion than a negative cytology test.

In 2005 and 2006, an extensive review of the performance of different cervical screening tests led the Programme to recommend the introduction of HPV testing as part of the screening pathway. Various screening scenarios utilising conventional and LBC and HPV testing were modelled. The modelling showed that the use of HPV testing to supplement (not replace) cytological testing was warranted in three situations:

- If a woman over 30 years of age returns a low grade cytology smear result (ASC-US/LSIL). NCSP contracted laboratories will undertake this test automatically
- To guide further patient management following treatment at colposcopy. Smear takers will need to request this test from NCSP laboratories
- To assist with further patient management where cytology and colposcopy results are not clear or are inconsistent with each other. Colposcopists will need to request this test as required.

From 1 October, HPV tests requested as part of cervical screening detailed in the previous bullet points, will be fully funded, ie, there will be no charge to women for these tests. Fact sheets for smear takers and women are available on the NSU website: www.nsu.govt.nz

Phasing in from this date, the Programme will move to 100 percent LBC (instead of the current mix of both LBC and CPS). LBC has several technical advantages over CPS, including greater sensitivity and lower unsatisfactory specimen rates – but more importantly, the same specimen can be used for both cytology and HPV testing. Questions and Answers about LBC can be found at www.nsu.govt.nz

The conversion to full LBC and introduction of HPV testing represents a major modernisation of the Programme, necessary if cervical screening is to continue to perform effectively and efficiently to prevent cervical cancer in the new era of HPV vaccination.