



# Changes to cervical screening in Australia: applying lessons learnt

The potentially more effective new program will rely heavily on successful implementation

In Australia, the organised approach to preventing cervical cancer began over 20 years ago. This approach has been a great public health success story that has resulted in substantial reductions in incidence of and mortality from cervical cancer.<sup>1</sup> The key reason for this success was recognition of the complexity of the screening pathway<sup>2</sup> — which includes recruitment, sample taking, laboratory quality assurance, reporting, management recommendations, follow-up and monitoring — and the need for high quality in each of these processes. Defined quality standards were implemented, assisted by the establishment of Pap test registers. Over the same period, there has been a great increase in the understanding of the pathobiology of cervical cancer, including its strong association with human papillomavirus (HPV) infection, which led to development of an HPV vaccine that provides protection against the two HPV subtypes that are most strongly linked to cervical cancer.

Australia successfully introduced an HPV vaccination program in 2007. High coverage rates have been reported<sup>3</sup> and early data show a reduction in the incidence of the vaccine-targeted viral subtypes.<sup>4</sup> However, in this issue of the Journal, research by Budd and colleagues

shows a significant reduction in screening participation in 20–24-year-old and 25–29-year-old vaccinated women compared with unvaccinated women in Victoria (37.6% v 47.7% and 45.2% v 58.7%, respectively, over the period 2010–2011).<sup>5</sup> When HPV vaccination was being assessed, modelling showed that vaccination alone would be less effective in reducing the incidence of cervical cancer than the current screening program.<sup>6</sup> Consequently, when the vaccination program began, there was a public education campaign emphasising that screening needed to continue. The results of the study by Budd et al indicate that this message has not been heeded.

In April this year, the Medical Services Advisory Committee announced recommendations to significantly alter cervical screening in Australia.<sup>7</sup> The recommendations include: replacing cytological testing for primary screening with HPV testing using a molecular diagnostic assay; increasing the age of commencement to 25 years; screening every 5 years until age 69–74 years; and using cytological testing for triage purposes in those who test positive for HPV. These recommendations are based on an extensive review of scientific literature and modelling studies of disease and cost-effectiveness. The review

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was initiated to assess a 20-year-old program in light of changing technologies and the HPV vaccine.

While the evidence suggests that this new screening regimen will be more effective (and cost-effective), it represents major changes to a well accepted and well functioning screening program. The regimen seems to be good for women's health, but this will depend entirely on whether it is implemented successfully. As the study by Budd et al shows, changing one aspect of a public health program may have unwanted consequences on another aspect.

For example, in 2003, the age of commencement of cervical screening in England was raised from 21 years to 25 years. This change was based on modelling data and was considered to be safe. Subsequently, there has been a significant decrease in participation in screening and a significant increase in cervical cancer in the 25–29-year age group.<sup>8</sup>

The proposed explanation for the increase in cervical cancer was an increase in HPV infections.<sup>9</sup> No data were provided to support this assumption but, given the known pathogenesis of this disease, the failure of the screening program to detect and remove the precancerous lesions common in 20–25-year-old women cannot be ignored as one of the reasons for the marked rise in invasive disease in 25–29-year-old women.

It is hoped that in a vaccinated population, raising the age for commencing cervical screening to 25 years will not have the same consequences as in England. Strategies to ensure that women enter the new program at 25 years must be devised, and a clear message must be given to women and health professionals that screening needs to continue, regardless of vaccination status.

Another crucial part of the screening pathway is the quality of the screening and investigatory tests.

- Quality assurance of cytological testing has been integral to the success of the current program, and this must continue, albeit in a revised form. The number of cervical samples taken for cytological testing will fall dramatically and this may result in only a few laboratories being able to perform the tests optimally.
- Quality parameters need to be put in place for HPV testing. There are many types of diagnostic HPV tests

that will need to be evaluated as screening tests in asymptomatic women. HPV tests used for screening must have an internal control to recognise invalid results due to poor sampling or assay failure (eg, inhibition of polymerase chain reaction used for DNA amplification). Invalid test results are not rare; at a large laboratory in Sydney (Douglass Hanly Moir Pathology), I observed a 1% rate of invalid test results during 2013.

- Rigorous quality standards which have not applied to colposcopy in the past will be needed because the number and importance of colposcopies will increase in the new program.

While modelling and scientific studies overseas may show that the new screening program is preferable to the current one, successful implementation of the changes is crucial to the wellbeing of Australian women.

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