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Medicine, Nursing and Health Sciences

The rapid and near elimination of human papillomavirus (HPV) type 6, 11, 16 and 18 among young high-risk women within three years of the national HPV vaccination programme in Australia: findings from a 10-year cross-sectional study

Eric P.F. Chow[1,2], Jennifer A. Danielewski[3,4], Glenda Fehler[1], Sepehr N. Tabrizi[3,4,5], Matthew G. Law[6], Catriona S Bradshaw[1,2], Suzanne M. Garland[3,4,5], Marcus Y Chen[1,2], Christopher K Fairley[1,2]

[1]Melbourne Sexual Health Centre, Alfred Health, Melbourne, VIC, Australia; [2]Central Clinical School, Faculty of Medicine, Nursing and Health Sciences, Monash University, Melbourne, VIC, Australia; [3]Department of Microbiology and Infectious Diseases, The Royal Women's Hospital, Parkville, VIC, Australia; [4]Murdoch Childrens Research Institute, Parkville, VIC, Australia; [5]Department of Obstetrics Gynaecology, University of Melbourne, Parkville, VIC, Australia; [6]The Kirby Institute, UNSW Australia, Sydney, NSW, Australia

Disclosure of interests

- bioCSL
- Australian National Health and Medical Research Council (NHMR)
- GlaxoSmithKline
- Boehringer Ingelheim
- Janssen-Cilag
- Merck Sharp & Dohme
- Bristol-Myers Squibb
- ViiV HealthCare
- Sanofi Pasteur

Background

- HPV is one of the most common STIs among women worldwide (10%)[1], women aged <25 are at high risk[2].
- Three HPV vaccines are available worldwide
  - Bivalent [Cervarix] – 16/18
  - Quadrivalent [Gardasil] – 6/11/16/18
  - Nine-valent [Gardasil9] – 6/11/16/18/31/33/45/52/58
- Effectiveness of HPV vaccination program[3]
  - Reduced HPV 16/18 by 68%
  - Reduced anogenital warts by 61%

1 de Sanjose S et al. Lancet Inf Dis 2007: 7: 453-59
2 Koutsky L. Am J Med 1997; 102-3-8
3 Drolet M et al. Lancet Inf Dis 2015; 15: 565-80

HPV vaccination program in Australia

- Cervarix & Gardasil vaccines are licensed in Australia
- HPV vaccination program
  - ♀ Free Gardasil
  - ♀ School girls (aged 12-13) since mid-2007
  - ♀ Catch-up programme for female aged 13-26 from 2007 to 2009
  - ♂ Including boys aged 12-13 since Feb 2013
  - ♂ Catch-up program for boys aged 14-15 up to Dec 2014

Previous research

- Previous studies on HPV vaccination program in general population
  - A better validity and generalizability
  - ??? Providing overly optimistic data on HPV decline in population where a decline of HPV would be easier to achieve
  - Enrolling low-risk women (including no sexual experience women)
- Important to monitor high-risk individuals for infection elimination

Aim

- To examine the annual trends and changes of HPV types in 4vHPV and 9vHPV vaccines in types young women with chlamydia from 2007 to 2014

Method

- Melbourne Sexual Health Centre (MSHC), Victoria
- Women aged ≤25 with a positive cervical or high vaginal swab sample for chlamydia
- 1 July 2004 to 30 June 2014

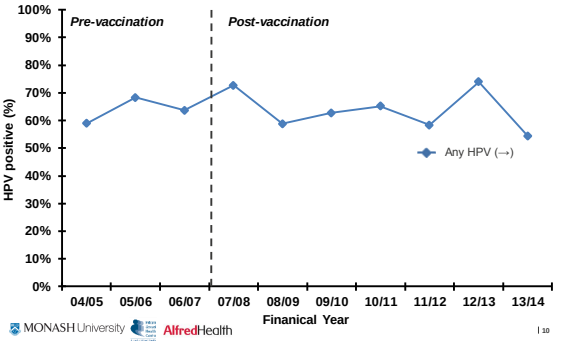
Subgroup analyses

- Years by Australian financial years (July to June)
- Australian-born *vs* overseas-born
  - Only Australian citizen or permanent residents are eligible for the free vaccine
- Women aged ≤21
  - Had been eligible (aged 12-13) to receive the free vaccine at school from 2007

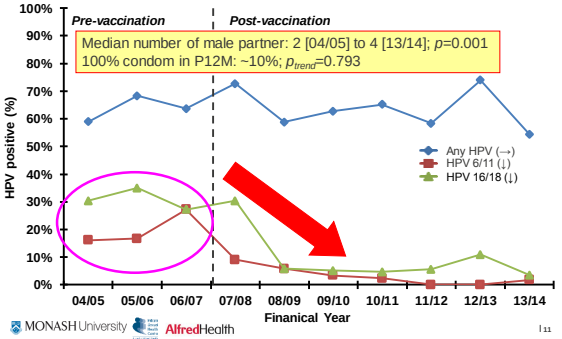
Results

- 1202 women aged ≤25 tested positive for chlamydia
- Country of birth
  - 39% Australian-born
  - 55% overseas-born
  - 6% no information
- Median age = 22 [IQR 20-24]
- Marital status
  - 87% never married
  - 5% divorced, de-facto relationship
  - 8% no information

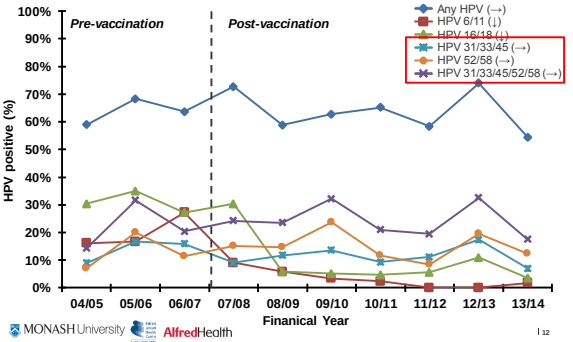
Result 1: Australian-born women ≤25



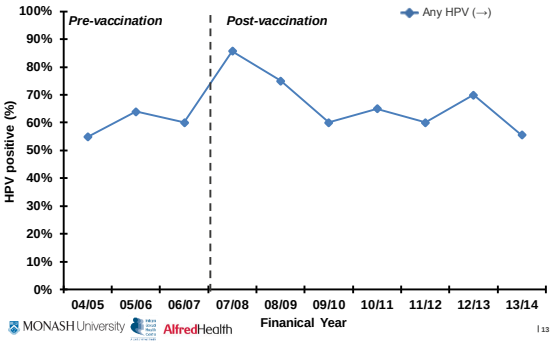
Result 1: Australian-born women ≤25



Result 1: Australian-born women ≤25



Result 2: Australian-born women ≤21



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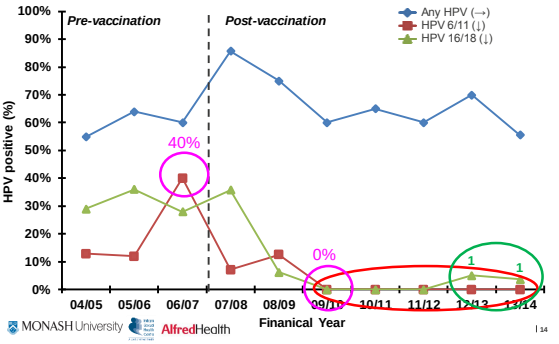
Result 2: Australian-born women ≤21



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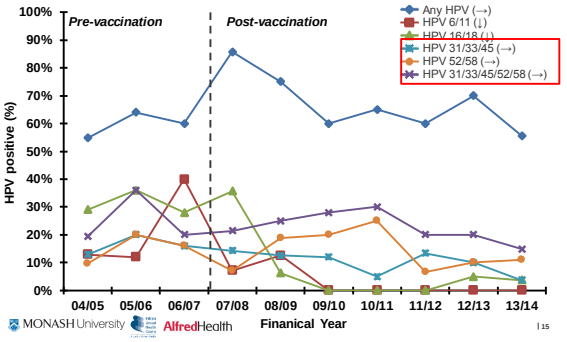
Result 2: Australian-born women ≤21



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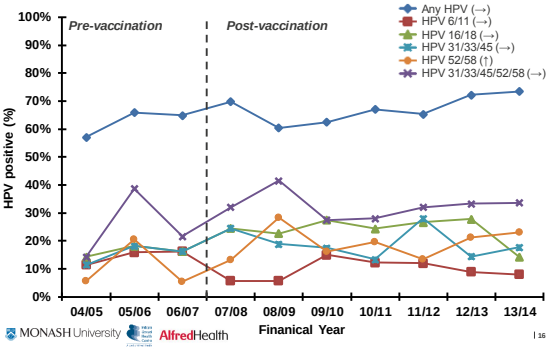
Result 3: Oversea-born women



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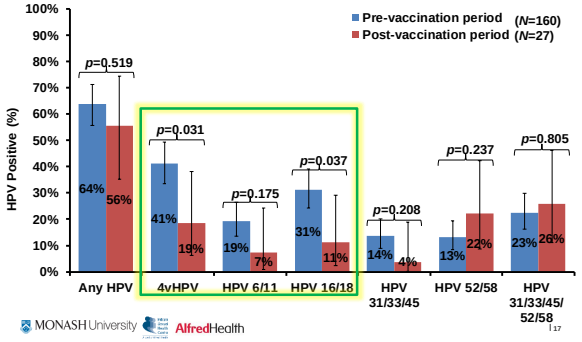
Result 4: Unvaccinated Australian women



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Take home messages

- The 4vHPV types almost disappeared in Australian-born women aged ≤21 three years after the vaccination programme.
- Strong herd protection in unvaccinated Australian women.
- The HPV vaccination programme in Australia has been successful at protecting women against 4vHPV types, particularly sexual active women.

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Citation

Chow EPF, Danielewski JA, Fehler G, Tabrizi SN, Law MG, Bradshaw CS, Garland SM, Chen MY, Fairley CK. **Human papillomavirus in young women with Chlamydia trachomatis infection 7 years after the Australian human papillomavirus vaccination programme: a cross-sectional study**. The Lancet Infectious Diseases. [Epub ahead 20 July 2015]. PMID 26201300

Dr Eric Chow
echow@mshc.org.au