

## LETTER

## Evidence for effectiveness of a national HPV vaccination programme: national prescription data from New Zealand

To prevent cervical cancer, a government-funded vaccination programme against human papillomavirus (HPV) infection started in New Zealand in 2008. After an initial catch-up phase, vaccination with a quadrivalent vaccine was routinely offered from year 2011 onwards to girls in school year 8 (typically age 12 years) or in primary care settings at age 12.

To better understand the impact of this vaccination programme, we examined national prescription data from the government's pharmaceutical purchasing agency (PHARMAC). From this agency, we obtained national data for both imiquimod cream (ie, Aldara) and for podophyllum resin-based products (eg, Condyline) for the financial years 1998/1999 to 2011/2012 (with data collection for imiquimod starting at 2008/2009). The data provided by PHARMAC were only for prescriptions explicitly for treating external anogenital warts.

The data indicated that prescriptions for podophyllum products have declined each year from 5266 prescriptions in

2007/2008 (the period prior to the vaccination programme) to 4315 in the 2011/2012 period. For comparison in the preceding 5-year period from 2002/2003 to 2006/2007, it had averaged 5410 prescriptions per year (range 5375–5449). For imiquimod, the decline was only over the last 2 years (after peaking in 4025 in 2009/2010 it declined to 3138 in the 2011/2012 period). The demographic data associated with these prescriptions have often not been obtained routinely until more recently (where the proportion with 'unknown' age/sex was 7.3% in 2011/2012). Nevertheless, the data for podophyllum products suggest that the decline in prescriptions has been largest in young women under age 20. That is, this group was given 15.1% of all the prescriptions in 2007/2008, which has declined to 11.4% in 2011/2012.

These reductions in prescriptions are entirely consistent with other evidence for beneficial HPV vaccination impacts (ie, reduced number of first presentations for genital warts seen in sexual health clinics for both young women and men in New Zealand). This pattern is also consistent with declining population burdens of genital warts after vaccination programmes were introduced in Australia and Sweden.

Finally, this brief analysis also further supports the potential use of pharmaceutical data for evaluating HPV prevention programmes, as also performed in Sweden.<sup>1</sup>

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**Contributors** NW and JM independently initiated the project and then worked together. JM obtained the data, which were analysed by NW. All authors contributed to the preparation of the manuscript.

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## REFERENCE

- 1 Leval A, Herweijer E, Arnheim-Dahlstrom L, *et al.* Incidence of genital warts in Sweden before and after quadrivalent human papillomavirus vaccine availability. *J Infect Dis* 2012;**206**:860–6.



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