



Published in final edited form as:

Lancet Infect Dis. 2015 January ; 15(1): 8–9. doi:10.1016/S1473-3099(14)71019-9.

HPV transmission in adolescent men who have sex with men

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Men who have sex with men (MSM) have a substantial burden of disease associated with human papillomavirus (HPV) infection, including anogenital warts, anal cancer, penile cancers, and oropharyngeal cancers.¹ However, the dynamics of HPV transmission in young MSM are poorly understood. Understanding of the natural history of HPV infection in men has become increasingly important for policy as more countries consider and adopt sex-neutral HPV vaccination programmes.

In *The Lancet Infectious Diseases*, Huachun Zou and colleagues² report high incidence of HPV infection in 200 Australian adolescent and young MSM aged 16–20 years (median age 19 years). Over the 1 year follow-up period, they detected 48 incident definite HPV infections in the anus and ten incident definite HPV infections on the penis. Definite incidence rate per 100 person-years for any anal HPV infection was 57 (95% CI 46–68), and 12 (6–21) for any penile HPV infection.

The authors estimated per partner transmission through comparison with data from a study by Goldstone and colleagues,³ reporting higher probability from the penis to the anus than from the anus to the penis. The transmission estimates are the best we have for adolescent MSM and the best data for this population that we will have any time soon. The data reported are best seen as rough estimates, albeit very good ones, in view of the many differences between the two samples. It will be important as others cite and use these data to keep some of their limitations in mind. First, estimates of partner incidence from Goldstone and colleagues³ are of a somewhat older sample of MSM than those used by Zhou and colleagues.² Only half of the Zou and colleagues' sample reported older sexual partners. Furthermore, although the entire sample used by Zou and colleagues was from Australia,² only 15% of the Goldstone sample was from Australia,³ and they had markedly lower prevalence of HPV infection compared with the rest of the study sample. Second, the transmission estimates do not account for penile to penile transfer of HPV, such as through frottage. Third, 4–6 years separate the collection of data in the two studies. These

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Disclosure of potential conflicts of interest: WAC declares no competing interests.

differences could bias estimates to be somewhat higher or lower than true rates. Despite these and other potential limitations that Zou and colleagues note, their data are novel and valuable.

HPV transmission estimates are useful for many reasons, including to increase the precision of HPV vaccine cost-effectiveness models.⁴ and ⁵ Zou and colleagues' findings can inform policy decisions for the several countries that are debating routine provision of HPV vaccine to boys and men. HPV vaccination programmes that target young MSM are appealing because they have higher risk for HPV-related disease than do other young men and are thus especially likely to receive benefit from vaccination.⁶ However, evidence suggests that risk-based vaccination strategies are not successful. For example, the USA abandoned risk-based vaccination when national efforts to give hepatitis B vaccine to MSM and injection-drug users were unsuccessful.⁷ The failure of risk-based vaccination is one of several good reasons why US guidelines recommend routine provision of HPV vaccine to all boys aged 11 or 12 years. Most boys at this age do not yet identify themselves as MSM; they might not do so until after sexual initiation and, thus, probably after exposure to HPV. A study of Australian MSM noted that 93% would be willing to disclose same-sex behaviour to a health-care provider to get HPV vaccination, but not until a median age of 20 years, which was 2 years later than their median age of sexual initiation and after a median of 15 sexual partners.⁸ Universal vaccination of age-eligible boys against HPV is a sensible policy.

The findings of Zou and colleagues² are timely because they show high rates of HPV infection in young MSM and the potential benefits of prophylactic vaccination. Although some individuals have proposed targeted vaccination of MSM on the basis of several hypothetical situations,⁹ we believe that universal vaccination of boys will lead to a meaningful public health benefit. Clinician recommendation has a key role in increases in HPV vaccination. Findings of a US study showed that 55% of parents who received a doctor's recommendation to get their adolescent sons vaccinated against HPV did so, compared with only 1% of parents without a recommendation.¹⁰ Emerging evidence suggest that vaccination in alternative settings, especially pharmacies and schools, can also increase rates of HPV vaccination.¹¹ Since MSM have a high burden of anal and penile cancers, and routine HPV-associated-cancer prevention programmes for men are sparse,¹² vaccination is an especially important strategy for prevention of cancer and reduction of health disparities.

Acknowledgments

NTB has received grants and personal fees from GlaxoSmithKline and Merck, Sharp & Dohme.

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