

Jabs for the boys: the case for gender-neutral HPV vaccination

Human papilloma virus (HPV) is a common sexually transmitted infection and is a major cause of multiple types of cancer as well as genital warts. In the UK a vaccination for HPV reaches 90% of girls but is not offered to boys. Here, Peter Baker from HPV Action puts forward the case for expanding the HPV vaccination programme to males

Whether boys should receive the human papilloma virus (HPV) vaccination is now a very live health policy issue in the United Kingdom. The government's advisory body, the Joint Committee on Vaccination and Immunisation (JCVI), is currently looking at whether all adolescent boys should be included in the national vaccination programme which has been vaccinating girls aged 12–13 years since 2008.

HPV, a very common sexually transmitted infection, is estimated to be responsible for 5% of all cancers. It is a major cause of cancers of the cervix, vagina, vulva, anus, penis, tonsils, base of tongue and oropharynx and contributes to cancer of the larynx. HPV also causes genital warts and a rare but often disabling breathing condition known as recurrent respiratory papillomatosis. Overall, the disease burden caused by HPV is equally shared by both sexes.

The key issue is whether the United Kingdom's very successful HPV vaccination programme, which now reaches 90% of females, actually protects males too. If both sexes are protected by a girls-only programme, then it could be argued that it is not necessary to extend the programme to boys.

Men who have sex with men (MSM) constitute a significant group that remains entirely unprotected by a girls-only programme. While anal cancer occurs most often in women, the incidence of anal cancer is highest in MSM. In fact, the incidence in MSM is estimated to be equivalent to that of



cervical cancer in an unscreened population and is even higher in HIV-positive MSM.¹ MSM also have a higher risk of developing genital warts than men who have sex with women (MSW).

HPV vaccinations for adult MSM (aged 16–40 years), offered at sexual health and HIV clinics, has been suggested by JCVI as a possible solution for this group. While this would undoubtedly benefit the individuals who do receive the vaccine, it cannot be seen as the most effective intervention for MSM as a whole. This is because

- Many MSM will already have been infected with HPV before they attend a clinic.^{2,3} MSM who attend genitourinary medicine (GUM) clinics often do not do so until their late 20s.⁴
- The Stonewall health survey⁵ found that 44% of gay and bisexual men had never discussed sexually transmitted infections with a healthcare professional, suggesting they may have never used a sexual health service.

- Vaccination in adolescence produces a much greater immune response providing a higher level of protection against infection in the future.

It is best practice to vaccinate before 'sexual debut' and exposure to HPV. But it would, of course, be neither ethical nor practical to try to identify and vaccinate adolescent boys who might later become MSM. The best way of protecting MSM is therefore to vaccinate all boys.

But what about MSW? Are they adequately protected by a girls-only HPV vaccination programme?

- In countries with female vaccination coverage of at least 50%, the reduction in genital warts in young men aged <20 years is around half of that in girls.⁶ Overall, there is a 34% reduction in young men. In other words, protection is at a much lower level for men when they remain unvaccinated.
- Men who have sex with unvaccinated women continue to be at risk. In total, 20% of men in Britain aged 16–24 years have had 10 or more female sexual partners.⁷ Given a 90% vaccination rate in girls, this means that these men are likely to have had at least one unvaccinated partner.
- MSW in those areas of the United Kingdom where vaccination rates for girls are much lower than the national average, such as East Sussex, Cornwall and several London boroughs, are at greater risk of HPV infection.⁸
- Men may have sexual contact with unvaccinated women from other countries with limited or no HPV vaccination programmes. In total, 13% of 16- to 24-year olds and 15% of 25- to 34-year olds are thought to have had at least one sexual partner from outside the United Kingdom in the past five years.⁷

- Women in the United Kingdom who did not take up the offer of vaccination in adolescence may also be disproportionately likely to acquire or transmit HPV because being unvaccinated is a marker for high-risk sexual behaviour.⁹
- Men may have sex with women who are too old to have been eligible for HPV vaccination as an adolescent in the United Kingdom or elsewhere.
- The proportion of girls vaccinated through the national programme might fall in the future as a result of a vaccine safety scare. HPV vaccination rates have recently fallen sharply in Japan for this reason.¹⁰

There is an additional argument for vaccinating boys: it is unethical and discriminatory to withhold a medical intervention of proven effectiveness from

a population group – in this case, males – that, if untreated, remains at risk from a range of potentially life-threatening diseases. Moreover, vaccinating females only implies that they alone are affected by HPV-related diseases or are solely responsible for transmitting and preventing HPV.

The vaccination of boys is supported by HPV Action's 41 member organisations (which include Royal Society for Public Health (RSPH)) as well as the British Medical Association (BMA) and Jo's Cervical Cancer Trust. It is also now recommended in an increasing number of countries around the world: Australia, Austria, Canada, Israel, Switzerland and the United States as well as in some German and Italian regions. Gender-neutral is now part of mainstream public health policy in an increasing number of countries comparable to the United Kingdom.

The cost of extending the vaccination programme to boys in the United Kingdom would be relatively modest, especially now that two doses of the vaccine are required instead of three. HPV Action estimates the additional cost as being in the region of £20–22 million a year at most.¹¹ By comparison, the annual cost of treating genital warts is an estimated £58 million.¹²

The JCVI's examination of whether to vaccinate all adolescent boys began in 2013. In 2014, it announced that its decision would be delayed from 2015 to 2017. The Independent Cancer Taskforce has suggested that, even if the JCVI decides in 2017 to vaccinate boys, implementation would not begin until 2020.¹³ This timescale each year leaves a cohort of about 400,000 boys unvaccinated and at risk of a range of serious HPV-related diseases.

References

1. Stanley M. Vaccinate boys too. *Nature* 2012; 488: S10.
2. Zou H, Tabrizi S, Grulich A, Garland S, Hocking JS, Bradshaw CS *et al*. Early acquisition of anogenital human papillomavirus among teenage men who have sex with men. *The Journal of Infectious Diseases* 2014; 209: 642–51.
3. Zou H, Tabrizi S, Grulich A, Hocking J, Bradshaw CS *et al*. Site-specific human papillomavirus infection in adolescent men who have sex with men (HYPER): An observational cohort study. *The Lancet Infectious Diseases* 2015; 15: 65–73.
4. Clarke E, Burtenshaw C, Goddard M, Patel R. Genitourinary medicine clinics may not see young men who have sex with men before they become infected with human papillomavirus (HPV). *BMJ* 2014; 349: g5215.
5. Guasp A. *Gay and Bisexual Men's Health Survey*. London: Stonewall, 2012.
6. Drolet M, Bénard É, Boily MC, Ali H, Baandrup L, Bauer H *et al*. Population-level impact and herd effects following human papillomavirus vaccination programmes: A systematic review and meta-analysis. *The Lancet Infectious Diseases* 2015; 15(5): 565–80.
7. Mercer C, Tanton C, Prah P, Erens B, Sonnenberg P, Clifton S *et al*. Changes in sexual attitudes and lifestyles in Britain through the life course and over time: Findings from the National Surveys of Sexual Attitudes and Lifestyles (Natsal). *The Lancet* 2013; 382(9907): 1781–94.
8. Public Health England. *Annual HPV Vaccine Coverage 2013 to 2014: By PCT, Local Authority and Area Team*. Available online at: <https://www.gov.uk/government/statistics/annual-hpv-vaccine-coverage-2013-to-2014-by-pct-local-authority-and-area-team> (Last accessed 4th November 2015).
9. Sadler L, Roberts S, Hampal G, McManus D, Mandal D, Brabin L. Comparing risk behaviours of human papillomavirus-vaccinated and non-vaccinated women. *Journal of Family Planning & Reproductive Health Care* 2015; 41: 255–8.
10. Hanley S, Yoshioka E, Ito Y, Kishi R. HPV vaccination crisis in Japan. *The Lancet* 2015; 385(9987): 2571.
11. HPV Action. HPV Action estimates the cost of vaccinating boys. Available online at: <http://www.hpvaction.org/news/previous/2> (Last accessed 4th November 2015).
12. Coles V, Chapman R, Lanitis T, Carroll S. The costs of managing genital warts in the UK by devolved nation: England, Scotland, Wales and Northern Ireland. 2015. *International Journal of STD & AIDS*. Epub ahead of print 12 February 2015. DOI: 10.1177/0956462415573121.
13. The Independent Cancer Taskforce. *Achieving World-Class Cancer Outcomes: A Strategy for England, 2015–2020 (2015)*. Available online at: http://www.cancerresearchuk.org/sites/default/files/achieving_world-class_cancer_outcomes_-_a_strategy_for_england_2015-2020.pdf (Last accessed 4th November 2015).