HPV vaccine: positive insights from universal adolescent HepB vaccination

J Claire Cameron, Lesley A Wallace, Syed Ahmed, Rina Duff, Martin Donaghy, David J Goldberg

The introduction of universal adolescent HPV vaccination in schools has a positive outlook

Preventing cervical cancer by vaccination has become a reality, complementing highly successful screening programmes. One vaccine against human papillomavirus (HPV) is already licensed (Gardasil®, Sanofi Pasteur), and approval for a second (Cervarix®, GSK) is expected shortly. Trials indicate over 90% efficacy in preventing persistent infection with vaccine types (HPV-16 and 18).^{1,2} In several countries, including the United States, Canada, Australia, Austria, Italy, Germany and France, HPV vaccination has now been universally recommended. Other countries, including the UK, are considering recommendations for its use.

The clinical benefit of HPV vaccines is incontrovertible, and excellent safety profiles have been established. As HPV is a sexually transmitted infection, however, some groups are anxious that vaccination may encourage earlier sexual activity.³ Further, uncertainty about the programme's optimal delivery setting remains.³

However, precedents exist. First, with rubella, against which many countries vaccinated adolescent schoolgirls to protect during later pregnancy, and more recently with hepatitis B (HepB), against which some countries, including Italy, Spain and France, have had universal adolescent vaccination of both boys and girls. Like HPV, HepB is sexually transmitted and is associated with long-term health consequences, and vaccination has had a large impact on global cancer reduction, despite an initial lack of data on long-term efficacy and side effects.

In 2001–2, the first UK, albeit pilot, programme to offer universal HepB vaccination was implemented in Glasgow. Vaccination was offered to all Secondary One pupils (aged 11–12 years; $n = 10\,832$) in all 81 state and private schools. The aim was to assess the feasibility, acceptability and costs of universal HepB vaccination in a city with considerable ethnic, religious and socio-economic diversity. A qualitative component investigated pupil and parent attitudes toward

adolescent HepB vaccination; this was undertaken in the context of suggestions that high coverage would be difficult to achieve due to logistical problems and the refusal of consent from parents who might regard their children to be at negligible risk of acquiring an infection, transmitted primarily through sexual intercourse and injecting drug use.⁴ The parallels with HPV vaccination are striking. The findings of this research revealed that schools-based vaccination was highly acceptable, with most parents and pupils preferring this setting to primary care, although some did indicate they would seek additional advice from health centre staff.⁵ As is currently applicable to HPV, there was a lack of awareness of HepB, regarding the virus, its transmission and potential vaccine protection.⁶ Some participants, not perceiving pupils to be at immediate high risk, requested further explanation as to why HepB vaccination should be offered. The majority of pupils and nearly all parents, however, were ultimately in favour of universal HepB vaccination, even when risk factors were made explicit. The programme was also positively received by members of parliaments, religious leaders, public health organisations, schools, school nurses and the media. This response was attributed to directly engaging with these stakeholders prior to implementation.

The encouraging qualitative research translated into high uptake when vaccination was offered, as for HPV, in a three-dose course. Consent was received for 92% of pupils, and 91.3%, 89.2% and 80.3% received at least 1, 2 and 3 doses, respectively.⁷ Even higher rates could have been achieved in an ongoing programme, where missed scheduled doses could have been received subsequently, either in primary care or at school. Similarly, a high uptake has been achieved in schools programmes elsewhere.⁸ No significant concerns about safety or parental absence were raised, in contrast to some other European settings.

Significantly ($p < 0.05$) lower uptake rates among the following groups were evident: males, pupils living in more deprived areas, pupils attending special needs schools, schools with more non-Caucasian pupils and schools with higher absentee rates.⁹ While, initially, HPV vaccine is likely to be offered to females only, the potential for lower uptake among individuals, or schools, with the above characteristics needs consideration. This is particularly important given higher rates of cervical cancer among more deprived communities, who also tend to have a lower uptake of cervical screening, as do certain ethnic groups. Further, experience from rubella shows that the programme may eventually need to be expanded to boys, should herd immunity be aimed for. Notably, over 30% of pupils attended Roman Catholic schools, but there was no significant difference in uptake according to schools' religious status. Data on costs incurred in the pilot programme were used to estimate costs for delivery of a routine, ongoing schools programme.¹⁰ Similar costs could be expected to apply to adolescent HPV vaccination. Vaccine costs (averaging £30 for a course) accounted for almost 70% of the overall HepB programme costs and was the most significant factor in sensitivity analysis; if the cost of an HPV vaccine course is over £200, the corresponding proportion will be even greater. Alternative delivery models were not costed. Vaccination of younger children in primary schools, however, would involve more establishments, incurring more costs, without a substantially higher uptake.¹¹ A primary care-based approach would also be an option, but studies have shown this to be generally less cost-effective than schools, with a lower uptake.¹²

The above experience suggests a positive outlook for introduction of universal adolescent HPV vaccination in schools, should this be recommended.

J Epidemiol Community Health
2007;**61**:1018–1019.
doi: 10.1136/jech.2007.059832

Authors' affiliations

J Claire Cameron, Lesley A Wallace, Martin Donaghy, David J Goldberg, Health Protection Scotland, Glasgow, UK
Syed Ahmed, NHS Greater Glasgow and Clyde, Glasgow, UK
Rina Duff, East Renfrewshire Community Health Care Partnership, Glasgow, UK

Correspondence to: Dr J Claire Cameron, Epidemiologist (Immunisation), Health Protection Scotland, Clifton House, Clifton Place, Glasgow G3 7LN, UK; claire.cameron@hps.scot.nhs.uk

Competing interests: Health Protection Scotland and NHS Greater Glasgow and Clyde have received funding for research and conference attendance from pharmaceutical companies.

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APHORISM OF THE MONTH

"What shall we do about London?"

Edwin Chadwick in 1848 is reputed to have asked, "What shall we do about London?", and health planners have often agonised since then about what to do about capital cities. These places are different in many ways, not least because they are on the doorstep of ministers of state, who find it even more difficult to avoid meddling in the minutiae of everyday operations than in health services elsewhere. Perhaps they are ever aware of their own potential treatment needs?

As we write, a new review of the British National Health Service seems to be at risk of coming up with solutions for the country as a whole based on the perennial weakness of their London system, where an unholy alliance of teaching hospital domination and private medical practice has prevented the development of strong primary care. The solution of polyclinics, in which hospital consultants see patients in their new, walk-in specialist settings, is the obverse of what many people have been striving to create, with the skilling-up of primary care workers and the development of areas of specialist expertise which can be readily accessed through their frontline contact.

The adage of "professionals on tap, not on top" is one we have touched upon before,¹ and which appears to be pertinent here.

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