The first young women given human papillomavirus vaccination will soon be invited for cervical screening and should be encouraged to attend

HPV vaccination: effects on cervical screening

**In this article...**

- Nurses’ role in advising young women on cervical screening
- Why young women vaccinated against HPV should still have smear tests

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**Abstract**


Uptake of cervical screening has declined slightly since the 1990s, and is generally lower among young women than older women. Although the human papillomavirus vaccination programme is successful, some girls are still not being vaccinated. In addition, the programme may have a negative impact on the uptake of cervical screening, as young women may not realise they are still vulnerable to cervical cancer after vaccination. Nurses should encourage girls and young women to take up both HPV vaccination and cervical screening.

In 2010, 2,851 women were diagnosed with cervical cancer (Cancer Research UK, 2014) and each year, around 215,000 are told they may have some form of cervical abnormality (NHS Cervical Screening Programme, 2013). It is estimated that 99.9% of cervical cancers are caused by the human papilloma virus (Walboomers et al, 1999).

Anyone who is sexually active can contract HPV through contact with someone who already has the virus. Most people are infected with HPV at some point in their lives – the infection is so common that it can almost be considered a normal consequence of having sex.

Around eight high-risk types of HPV are responsible for 90% of all cervical cancers. In the high-risk group, types 16 and 18 are the most prevalent and responsible for 70% of cervical cancers; the remainder are associated with HPV types 31, 33, 34, 45, 52 and 58 (De Sanjose et al, 2010).

Although HPV infection is generally transient, if persistent it can cause changes to the cells of the cervix, creating abnormalities. Left untreated, these abnormalities can become severe and progress to cancer. Cervical screening can detect cell changes at an early stage when treatment can be effective.

The development of a vaccine for HPV types 16 and 18 is significant in the strategy for reducing the incidence of cervical cancer (Cuzick et al, 2010). The aim of primary prevention (preventing infection with HPV) is to reduce persistent infection, which can lead to cervical cancer.

The HPV vaccination programme

A three-dose vaccination programme was implemented in 2008 following advice from the Joint Committee on Vaccination and Immunisation, which recommended that the HPV vaccine should be offered routinely to girls aged 12-13 years. The committee also recommended a time-limited catch-up vaccination of females aged 13-18 years. The objective of the programme is to vaccinate females before they reach an age when the risk of HPV infection increases and they are at subsequent risk of cervical cancer.

Two HPV vaccines are available: Cervarix provides protection against types 16 and 18; Gardasil – which is used in the UK vaccination programme – provides protection against low-risk HPV types 6 and 11 as well. These do not cause cervical cancer but can result in genital warts. It is predicted that 80% vaccination coverage in girls aged 12-13 will result an eventual 63% reduction in cervical cancer (Cuzick et al, 2010).

**5 key points**

1. 99.9% of cervical cancers are caused by the human papilloma virus
2. Two types of HPV, types 16 and 18, are responsible for 70% of cervical cancers
3. An HPV vaccine was introduced for 12-13 year-old girls in 2008
4. 86% of 12-13 year-old girls in England were vaccinated in 2012-13
5. The uptake of cervical screening is lower among younger women than other age groups

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NHS Q&A sheet on the HPV vaccination for girls and their parents
Despite the potential of HPV vaccines to significantly reduce the incidence of cervical cancer, a cervical cancer screening programme remains necessary because:

- Approximately 30% of cervical cancers are related to HPV types not included in the vaccine (Bosch et al, 2008);
- Although 86% of 12-13 year-old girls had all three vaccines in 2012-13 (Public Health England, 2013), the remaining 14% are unvaccinated and are therefore unprotected against all HPV types. While cervical screening is first offered at the age of 25 years in England and Wales, in Scotland it is offered from the age of 20, so the Scottish cohort vaccinated in 2008 will be invited for cervical screening for the first time in 2015. This is, therefore, a good time to review data on the likely uptake of cervical screening in women who have been vaccinated, as nurses may be able to increase uptake by advising women of the importance of cervical screening regardless of HPV vaccine status.

Public perception of the need for cervical screening following vaccination has implications for its uptake. The leaflet given to girls at the time of vaccination (NHS Immunisation Information, 2012) explains that cervical screening is important regardless of whether they have received the HPV vaccine (Box 1).

**Impact of vaccination on cervical screening**

The uptake of cervical screening in the target population (women aged 25-64) has fallen from about 82% in the late 1990s to about 79% in the last five years; it is significantly lower in women aged 25-30 (60%) than in older age groups (NHS CSP, 2013).

Many complex factors influence a woman’s decision to attend for screening, and an understanding of these is essential for any attempts to increase take-up. In an attempt to explain factors affecting decision making, many studies refer to the health belief model (Hochbaum, 1958), which is based on a psychosocial approach to explaining health-related behaviour. It was developed to explain the widespread failure of people to participate in programmes to prevent disease, and suggests that people consider a range of options when deciding whether to take up a health intervention, including:

- Their perceived susceptibility to the condition;
- The perceived severity of the condition;
- The potential benefits;
- The perceived barriers to participating.

In the case of cervical screening, public perception of perceived susceptibility can be a strong motivating factor in the uptake of screening. The “Jade Goody effect” illustrates this. Ms Goody’s highly publicised illness and death from cervical cancer in 2008 resulted in a significant increase in attendance for screening (Lancucki et al, 2012). However, a review (NHS CSP, 2013) has noted that cervical screening in younger women is still 10% lower than in 30-34 year-olds and 20% lower than in 50-54 year-olds. The NHS cervical screening programme is endeavouring to address some of the underlying reasons for this. An ongoing study (Kitchener, 2013) is seeking to evaluate a range of interventions designed to encourage women aged 25 to attend for screening.

**Findings from the literature**

Sadler et al (2013) recruited young women aged 16 or over who were eligible for HPV vaccination to complete a questionnaire measuring risk-compensating behaviour, to determine whether receiving the HPV vaccination influenced their plans to attend for cervical screening.

Of the 822 participants, 73.5% had received at least one dose of the vaccine; 8.4% anticipated they would be less likely to attend for screening following vaccination, while 32.5% expressed increased intention to attend for screening. The study concluded that receiving HPV vaccination leads to some women anticipating they will be less likely to attend for cervical screening (reduced susceptibility), but a larger number believed they would be more likely to attend. However, in the latter group, expressed intention at age 16 may not translate into action and in the former group, consideration should be given regarding how awareness can be raised about the benefits of screening.

A study conducted in Manchester on the uptake of HPV vaccination revealed a strong correlation between uptake of vaccination in girls and their mother’s cervical screening history. In girls whose mother had never attended for screening, uptake was as low as 58%; in girls whose mother had attended in the past five years, uptake was 84%. The study concluded that this may indicate a worrying trend for future uptake of screening in the unvaccinated population (Spencer et al, 2013).

In a trial to examine what influenced uptake of the vaccine, which involved a survey of 2,000 teenagers eligible for the catch-up vaccine from 13 London schools, only ethnicity was associated with vaccine uptake (Bowyer et al, 2014). Participants from black or “other” ethnic backgrounds were less likely to have received the HPV vaccine than white participants. Unvaccinated girls also said they would be less likely to attend cervical screening as adults. The authors said more research was needed to find out why there was a difference between ethnic groups when it came to intention to attend for screening.

**Implications for practice**

The falling trend in cervical screening uptake is a cause for concern nationally, and nurses can play a part in raising awareness of the importance of HPV vaccination and the fact that cervical screening is still a potentially life-saving test, even in women

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**Box 1. Excerpt from HPV Vaccination Leaflet**

**Q:** Now I’ve had the injections, will I still need to go for cervical screening?

**A:** Yes. All women should decide to go for cervical screening (smear tests) when they are old enough (25 and over in England). The vaccine protects against over 70% of the human papillomavirus types that cause cervical cancer, so you still have to be screened to try to pick up cervical abnormalities caused by other HPV types that could lead to cancer.

Source: NHS Immunisation Information (2012)
who have had the HPV vaccination. While they are not in a position to influence ethnicity or socioeconomic resources, nurses can recognise that these factors may be indicators of low vaccination and screening uptake. Nurses can influence women’s perception of their susceptibility to cervical cancer and the perceived severity of the disease by discussing the link between HPV infection and cervical cancer (Box 2).

The NHS Cancer Screening Programme Cervical Screening: the Facts leaflet is available in 23 languages and can be downloaded from the programme website (www.cancerscreening.nhs.uk/cervical). This leaflet is a useful in promoting an understanding of the screening programme, and can assist in tailoring consultations to women’s individual needs by raising awareness of the potential benefits of HPV vaccination and the continued need for screening. This is especially important at this time of major change with the introduction of HPV vaccination. NT

BOX 2. A LIFE-SAVING INTERVENTION

- Factors influencing the uptake of HPV vaccination include mother’s screening history, ethnicity and socioeconomic factors
- HPV vaccination does not offer protection against all types of the virus
- Even with good HPV vaccination uptake, some cases of cervical cancer will occur, so screening is still needed
- Nurses should advise girls and young women about their susceptibility to cervical cancer and the links between HPV and cervical cancer


References


