

Cervical cancer vaccination

National Human Papillomavirus (HPV) Vaccination Program

IMMUNISATION PROVIDER GUIDELINES

National Human Papillomavirus (HPV) Vaccination Program

The National Human Papillomavirus (HPV) Vaccination Program will commence from April 2007.

This Program will provide free HPV vaccine to females aged 12 to 26 years through the National Immunisation Program.

Eligibility

From April 2007, free HPV vaccine will be provided through school-based programs for:

- females aged between 12 and 13 years (ongoing program); and
- females aged between 13 and 18 years - until the end of the school year in 2008 (catch-up program).

School-age females will be offered free HPV vaccine in either 2007 or 2008 depending on the state or territory where they attend school. By the end of the 2008 school year, all females aged 12-18 years will have been offered free HPV vaccine.

The ongoing program for females aged between 12 and 13 years will continue from 2009.

From July 2007 until June 2009, free HPV vaccine will be available through general practice and other immunisation providers for:

- females aged 12-18 years who missed doses during the school-based program; and
- females aged 18 to 26 years, however, the full course of 3 doses must be completed before the end of June 2009 and before the woman reaches age 27 years.

HPV vaccine has not been approved for use by the Therapeutic Goods Administration (TGA) in females younger than 9 years and older than 26 years.
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HPV vaccine is not funded for males under the National HPV Vaccination Program.

Rationale for eligible cohorts

Females aged 12-18 years (school-based program)

Vaccination is recommended for females before they become sexually active, as its effectiveness is optimal before exposure to infection with HPV genital types 6, 11, 16, and 18.

Females aged 18-26 years (community-based catch-up program)

Females in the 18 to 26 year age group will benefit from vaccination if they have not been infected with HPV types 6, 11, 16 and 18. Even if infection has been acquired with one of these HPV types, protection against infection and disease from the other HPV types in the vaccine will be achieved. However, during the vaccination visit women should be counselled that the vaccine may be less effective if they have been exposed to HPV before vaccination.

The decision to vaccinate needs to be an individual one, taking into consideration the likelihood of past and future exposure to HPV. A woman's lifetime number of sexual partners is the most important predictor of HPV acquisition. Women at the upper end of the age group are more likely to have been infected with at least one of the vaccine types than younger women, but infection with all four of the vaccine types is unlikely.

Pre-immunisation screening is not helpful in determining whether a woman will benefit from HPV vaccination.

Currently available laboratory tests are not able to detect vaccine type-specific HPV infection and will not identify whether the woman has had previous HPV infection.

Human papillomavirus (HPV)

Human papillomaviruses (HPV) are small, non-enveloped DNA viruses that can affect cutaneous and mucosal epithelial tissues. Over 100 different types of HPV can be linked to anal, vaginal, vulval, penile and head and neck cancers.

Up to 40 of these HPV types can infect the anogenital epithelium. These HPV types are classified as high risk (oncogenic) or low risk (non-oncogenic). Persistent infection with some high risk HPV types can cause cell changes that may lead to cervical cancer over a period of usually more than 10 years.

Some low risk HPV types can cause genital warts. Types 6 and 11 are linked to approximately 90 per cent of genital warts cases.

HPV can be transmitted by HPV can be transmitted by direct, skin-to-skin contact during all types of sexual activity.

HPV is very common. HPV infection rates vary widely in different regions across the world. However, it is estimated that 79 per cent of women may have genital HPV infection at some time in their lives. HPV infection rates are highest in younger women and rise sharply soon after the median age of first sexual activity (16 years).

Most genital infections with HPV do not cause any symptoms and people do not know they have the infection. Most HPV infections are cleared within 12-24 months.

The link between HPV and cervical cancer

High-risk HPV types 16 and 18 are linked to 70% of cervical cancers in Australia.

In an estimated 3-10 per cent of women HPV infection persists, which can cause changes to the cells in the cervix, known as intraepithelial lesions. These lesions, if left untreated, can develop into cervical cancer.

It usually takes more than 10 years for cancer to develop. During this time, cervical cell lesions can be detected through regular Pap smear screening, enabling treatment to be given before the development of cancer.

Most women who have HPV slowly clear the virus naturally and do NOT develop cervical cancer.

**Insert HPV and cervical health diagram here*

There are no treatments for HPV infection. Treatments are available for the effects of the virus, such as genital warts and abnormal changes to cells in the cervix.

Regular Pap smears are still essential because the HPV vaccine does not prevent all cervical cancers. Pap smears detect abnormal changes to cells in the cervix so treatment can start before cancer develops.

Vaccine

GARDASIL® is highly effective in protecting against persistent infection with, and diseases caused by, HPV types 6, 11, 16 and 18, in *women who have not been previously infected with these types*. In clinical trials, vaccine efficacy was: 89% in preventing type-specific persistent infection; 100% against HPV 16/18 related cervical intraepithelial neoplasia (CIN) grade 2/3 or worse; 95% against any HPV 6/11/16/18-related CIN (of any grade); and 99% against external genital lesions, including warts.

Vaccine efficacy remained high for women who were HPV naïve at the beginning of the trial, but who received fewer than 3 vaccine doses or became infected with a HPV vaccine type during the vaccination course. Efficacies of 99%, 94%, and 94% were demonstrated against HPV 16/18 related CIN grade 2/3 or worse; any HPV6/11/16/18-related CIN (of any grade); and external genital lesions, respectively.

The vaccine elicits antibody titres many times higher than those seen following natural infection. Seroconversion occurs in 99.5% of those who complete the 3 dose course. Compared with 2 doses, a three dose regime gives higher peak antibody titres and increases the longevity of protection.

The vaccine has not been demonstrated to be effective against the other HPV types that can cause cervical cancer.

Dosage and administration

GARDASIL® is administered intramuscularly, usually in the upper arm, as a series of three injections over a period of six months. The optimal schedule is:

- first dose - at elected date;
- second dose - 2 months after the first dose; and
- third dose - 6 months after the first dose.

The vaccine has been shown to be effective if all three doses are given within 12 months. However, if doses cannot be completed within this time, it is not recommended to restart the course. Missed doses should be given as soon as is practicable.

If a shorter vaccination schedule is necessary, the second dose should be administered at least one month after the first dose and the third dose should be administered at least three months after the second dose. Because of the April start date, shorter vaccination schedules are likely to be used in the school-based program during 2007.

GARDASIL® can be administered concomitantly with the following routine vaccine listed on the National Immunisation Program – hepatitis B vaccine. No data is available on the concomitant use of GARDASIL® with diphtheria, tetanus and acellular pertussis (dTpa) vaccine or varicella vaccine, but there is no reason to anticipate any adverse outcomes if they are given simultaneously in different injection sites.

Contraindications and precautions

GARDASIL® should not be given to any person who has a history of severe immediate hypersensitivity to yeast or any of the vaccine components (aluminium phosphate, sodium chloride, L-histidine, polysorbate and sodium borate), or who has had a severe allergic reaction to a previous dose of the vaccine.

GARDASIL® is not recommended for use in pregnant women. However, there is no evidence to suggest that administration of the vaccine adversely affects fertility, pregnancy or infant outcomes. If the vaccine is inadvertently administered during pregnancy, advice should be given to defer completion of the course until after the birth; there is no need to consider termination.

GARDASIL® can be administered to lactating women.

Administering GARDASIL® should be delayed in a person who has a moderate to severe febrile illness until they have fully recovered from the illness.

The safety and efficacy of GARDASIL® has not been tested in children younger than 9 years, males over 15 years, females over 26 years and HIV-positive people.

Adverse events

Few serious adverse events were reported during clinical trials. Mild to moderate pain, redness or swelling at the injection were reported by 83% of vaccine recipients, compared with 73% of those who received placebo. There was no difference in the proportion of vaccine and placebo recipients (59-60%) who reported systemic symptoms, the most common of which were headache, fever and nausea. For more information refer to the product information.

Pain and swelling can be relieved with paracetamol as directed, and by placing a cool, moist cloth over the injection site.

Exposure to HPV between doses

Exposure to any of the four HPV types covered by the vaccine before the three doses are completed may slightly lessen the effect of the vaccine. Once vaccination has commenced, the full course of the vaccine should be completed.

Storage and handling

GARDASIL® should be refrigerated at 2 to 8°C and administered soon after being removed from refrigeration. Shake well before administration.

Booster doses

Research to date has demonstrated protective immunity for at least 5 years and there is no indication currently that boosters are needed. Clinical trials are continuing and the results will be monitored to determine whether booster doses will be needed in the future.

Vaccinating males

GARDASIL® is approved for use in males aged 9 to 15 years, based on the demonstration of safety and HPV antibody response in males in this age group. There is insufficient data on the clinical efficacy of the vaccine in males available at this time. Free HPV vaccine should not be given to males.

National Cervical Screening Program

The HPV vaccine does not protect against all HPV types that can cause cervical cancer, only high risk types 16 and 18.

All females who have been vaccinated against HPV should be advised to commence or continue Pap smears according to the National Cervical Screening Program (NCSP) recommendations.

Current National Cervical Screening Program (NCSP) recommendations are that all women, whether vaccinated or unvaccinated, should have two yearly Pap smears, commencing from the age of 18 or within two years of first having sex, whichever is

later.

Presentation for HPV vaccination is an ideal time to offer opportunistic cervical screening to sexually active women who are not up to date with their Pap smears.

The National Cervical Screening Program will continue into the future. The impact of the HPV vaccination program on cervical cancer will be monitored over time.

Women with abnormal smear results should be managed in accordance with the National Health and Medical Research Council's *Screening to prevent cervical cancer: guidelines for the management of asymptomatic women with screen detected abnormalities (2005)*.

Further information about cervical screening is available on the Cancer Screening website at www.cancerscreening.gov.au.

HPV Register

A National HPV Vaccination Program Register (HPV Register) is being developed by the Australian Government to collect data about the Program. Personal details identifying you will be kept confidential.

Personal information collected will be used to evaluate the impact of the HPV Vaccination Program on cervical cancer rates, to issue reminders if the course is incomplete, to issue confirmation the course is complete and to contact vaccine recipients if booster doses are required. If your patient's details are not included in the Register it will not be possible to contact her about missed or booster doses.

Information will not be sought about your patient's sexual history.

Your patients can decline having their details included in the HPV Register.

Data collection is a requirement for girls aged 12-18 years who may have received doses in the school-based program. Data collection is not a requirement for vaccinating females aged 18-26 years, however, the Register will accept data for females in this age group, if they elect to have their details included in the HPV Register.

Further information

Information on HPV and HPV vaccine is available on the National Centre for Immunisation Research and Surveillance website at www.ncirs.usyd.edu.au and the Immunise Australia Program website at www.immunise.health.gov.au.

The draft NHMRC *Australian Immunisation Handbook 9th Edition (2007)* contains information about human papillomavirus and the HPV vaccine. The *Handbook* was released for public consultation on 24 February 2007 and is available through the Immunise Australia Program website. The draft will remain available on the Website until the final Handbook becomes available, which is expected to be later in 2007.

Information about the National Cervical Screening Program is available on the Cancer Screening website at www.cancerscreening.gov.au.

You can also phone the National Immunisation Infoline on 1800 671 811 or contact your state or territory health department for more information.

State and Territory contact information:

ACT: (02) 6205 2300

NSW: Contact the local Public Health Units (look under "Health" in the White pages)

NT: (08) 8922 8044

QLD: 13 HEALTH (13 43 25 84)

SA: (08) 8226 7177

Tas: 1800 671 738

Vic: 1300 882 008

WA: (08) 9321 1312

Note: This information is correct as at March 2007.

For the back panel of the booklet:

Immunise Australia Program logo (colour)

www.immunise.health.gov.au

National Cervical Screening Program logo

www.cancerscreening.gov.au