

## Human Papillomavirus (HPV) Vaccines Bivalent (Cervarix™) and Quadrivalent (Gardasil®)

### Human Papillomavirus Vaccine Vaccination Schedule: (Table 1)

Dose Number	Dose	Route	Intervals
First	0.5 mL	IM	
Second	0.5 mL	IM	1-2 months after first dose (A minimum of 4 weeks after first dose)
Third	0.5 mL	IM	6 months after first dose (At least 12 weeks after the second dose <u>and</u> at least 24 weeks after the first dose)

### Quadrivalent HPV Vaccine (HPV4)

- Gardasil®, manufactured by Merck
- The vaccine protects against 4 types of human papillomavirus: Types 16 and 18 which are responsible for 70% of cervical cancers and Types 6 and 11 which (along with type 18) are responsible for 90% of genital warts.

### Bivalent HPV Vaccine (HPV2)

- Cervarix™, manufactured by GlaxoSmithKline
- The vaccine protects against 2 types of human papillomavirus: Types 16 and 18 which are responsible for 70% of cervical cancers.

### Indications and Usage: (See Table 2)

#### Females

- HPV vaccines are recommended for routine vaccination of females aged 11-12 years. The 3-dose vaccination series can be started as early as 9 years.
- Catch-up vaccination is recommended for females 13 – 26 years of age who have not completed the vaccine series. Ideally, vaccine should be administered prior to potential exposure through sexual contact. (VFC purchased vaccine may be administered to females through age 18 years (i.e., before the 19<sup>th</sup> birthday).

#### Males

- Quadrivalent HPV (Gardasil®) vaccine may be given to males aged 9 – 26 years to reduce the likelihood of acquiring genital warts. (VFC purchased vaccine may be administered to males through age 18 years (i.e., before the 19<sup>th</sup> birthday).

### Contraindications & Precautions

- Hypersensitivity such as a severe allergic reaction (e.g., anaphylaxis) after a previous dose of HPV vaccine or any vaccine component.
  - Cervarix™ (HPV2) vaccine: the prefilled syringes contains latex
  - Gardasil® (HPV4) vaccine is contraindicated for persons with a history of immediate hypersensitivity to yeast
- HPV vaccines are not recommended for use in pregnant women; pregnancy testing is not needed before vaccination. Any exposure to an HPV vaccine during pregnancy should be reported to the appropriate vaccine pregnancy registry:
  - 1-800-986-8999 (Merck & Co. for Gardasil® vaccine)
  - 1-888-452-9622 (GlaxoSmithKline for Cervarix™ vaccine)
- Because some people may develop syncope, sometimes resulting in falling with injury, observation for 15 minutes after administration is recommended

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### Adverse Reactions

- Local (injection site): pain, redness, and swelling.
- General (systemic): fatigue, headache, myalgias (muscle pain), gastrointestinal symptoms, and arthralgia (joint pain).

### Vaccine Storage and Handling

- Store Cervarix™ and Gardasil® in the refrigerator between 35°F and 46°F (aim for 40° F).
- **Do not freeze** – discard if vaccine has been frozen.

### Administration

- Whenever possible, the same HPV vaccine product should be used for all doses in the series.
- However, if vaccination providers do not know or have available the HPV vaccine product previously administered, either HPV vaccine product can be used to continue or complete the series to provide protection against HPV 16 and 18.
- Gardasil® and Cervarix™ can be used interchangeably in females. Cervarix™ is not recommended for use in males.
- If the HPV vaccine schedule is interrupted, the vaccine series does not need to be restarted.
- HPV vaccines are not live vaccines and can be administered either simultaneously or at any time before or after an inactivated or live vaccine.

### HPV Vaccine Comparison Chart: (Table 2)

Vaccine	HPV Types	Recommended Age	Minimum Age	Indicated for Females?	Indicated for Males?	Prevents
<b>Gardasil® (quadrivalent)</b>	6, 11, 16, & 18	11-12 years	9 years	Yes	Yes	Cervical cancer, pre-cancers, vulvar, vaginal cancers in females, and genital warts in females and males,
Cervarix™ <b>(bivalent)</b>	16 & 18	11-12 years	9 years	Yes	No	Cervical cancer, pre-cancers