Program Management

The wP vaccines have a considerably lower price than aP vaccines and, where resources are limited and the vaccine is well accepted by the local population, wP vaccine remains the vaccine of choice. In countries where the higher reactogenicity of wP is an impediment to high vaccination coverage, aP may be used instead, at least for booster injections.


Vaccine Handling

(Whole-cell pertussis vaccines) must not be frozen, but stored at 2–8 °C. All wP vaccines have an expiry date of 24–36 months.


Schedule

In accordance with the recommendations in the previous position paper on diphtheria, use of diphtheria–tetanus vaccine is preferable to single-antigen tetanus toxoid vaccine. In future, the inclusion of other antigens, e.g. pertussis or Haemophilus influenzae type b (Hib), in booster doses should be considered.


27 June 2008 Page 1 of 5
**Pertussis**

In countries where the incidence of pertussis has been considerably reduced by successful immunization, a booster dose administered 1–6 years after the primary series is warranted. The optimal timing of this booster dose as well as the possible need for additional booster doses of DTP depends on the epidemiological situation, and should be assessed by individual national programmes.

**Pertussis vaccines (WHO position paper)**

The main aim of pertussis vaccination is to reduce the risk of severe pertussis in infancy. The vaccine is usually administered in the national childhood immunization programme as combined DTwP or DTaP vaccine, although the combination often includes additional vaccines (Haemophilus influenzae type b (Hib), hepatitis B (HepB), poliovirus vaccine (IPV)). The optimal schedule and number of immunizations are not well defined but, in most countries, 3 primary doses are administered with at least a 1-month interval to infants aged 2–6 months. A booster dose is commonly offered 1–6 years later. WHO recommends the primary series to be administered at the age of 6, 10 and 14 weeks. National recommendations vary considerably, however.

**Pertussis vaccines (WHO position paper)**

Children whose (pertussis) vaccination series has been interrupted should have their series resumed, without repeating previous doses.

In some countries, an additional vaccine dose is now offered to health-care workers and young parents. Only aP vaccines are used for vaccination of older children and adults. (page 36: Local reactions tend to increase with age and the number of injections.) (page 37: In order to reduce the reactogenicity of booster injections, aP vaccines with reduced antigen concentration have been formulated for use in adolescents and adults.)

**Pertussis vaccines (WHO position paper)**

All infants, including HIV-positive individuals, should be immunized against pertussis.

**Pertussis vaccines (WHO position paper)**
Vaccine Administration

The standard (pertussis) vaccine dose is 0.5 ml, which is administered intramuscularly in the anterolateral thigh in infants or in the deltoid muscle in older age groups. wP or aP and vaccines are offered in fixed-dose combinations with other antigens, and may be administered with other vaccines simultaneously administered at different injection sites.

Contraindications

While in terms of severe adverse events, aP (acellular pertussis) and wP (whole cell pertussis) vaccines appear to have the same high level of safety, mild to moderate adverse reactions are more commonly associated with wP vaccine; wP vaccines are not recommended for use in adolescents and adults.

Except for an anaphylactic reaction following prior administration of the vaccine, there are no strict contraindications to this vaccination. There are no data to support the perception that previous encephalitis may be a contraindication for pertussis vaccination.
**Pertussis**

**Adverse Event**

While in terms of severe adverse events, aP (acellular pertussis) and wP (whole cell pertussis) vaccines appear to have the same high level of safety, mild to moderate adverse reactions are more commonly associated with wP vaccine; wP vaccines are not recommended for use in adolescents and adults.

*Pertussis vaccines (WHO position paper)*

**Outbreak Control**

Every pertussis outbreak should be reported immediately to the appropriate WHO regional office, investigated to understand why it occurred, and confirmed by laboratory methods. Case-based information should be collected on: date of onset, age, immunization status, geographical location and final outcome.

*WHO–recommended standards for surveillance of selected vaccine-preventable diseases*

**Immunization Coverage**

At least 90% coverage with 3 doses of the diphtheria–tetrus–pertussis vaccine (DTP) in infants remains the first programme priority worldwide, particularly where pertussis still poses a serious health problem in infants and young children.

*Pertussis vaccines (WHO position paper)*
**Pertussis**

**Surveillance of Vaccine Preventable Disease**

Careful epidemiological surveillance of pertussis is encouraged worldwide to monitor disease burden as well as the impact of immunization. Of particular interest are surveys comparing age-specific incidences of pertussis in countries with different vaccine booster policies.


In countries where (pertussis) coverage is moderate to low, surveillance should simply monitor improving coverage and decreasing pertussis incidence. Once immunization coverage is high and pertussis incidence is low, surveillance should be enhanced to understand the changing epidemiology of the disease and thus to guide vaccination policy. Bordetella parapertussis, which causes milder disease in general and is not responsible for significant mortality, is not a priority for surveillance in most countries at present.

**WHO–recommended standards for surveillance of selected vaccine-preventable diseases**

Recommended types of surveillance for pertussis:

1) Routine surveillance (where DTP3 coverage is < 90%): Routine monthly reporting of aggregated data on clinical cases from the peripheral level to the intermediate and central levels is recommended. All levels should be encouraged to report cases stratified by age group (e.g. < 1 year, 1-4 years, >/ 5 years) and immunization status.

2) Routine surveillance (where DTP3 coverage is >/ 90%): Case-based surveillance is recommended when coverage reaches 90%. Information on age, immunization status and final outcome (i.e. alive or dead) should be collected.

3) Investigation of outbreaks: Every pertussis outbreak should be reported immediately to the appropriate WHO regional office, investigated to understand why it occurred, and confirmed by laboratory methods. Case-based information should be collected on: date of onset, age, immunization status, geographical location and final outcome.

4) Sentinel surveillance: Sentinel surveillance is recommended in a few major hospitals to collect more in-depth information than that obtained through routine surveillance. The data collected on each case should include: date of onset, immunization stat, age, laboratory confirmation and final outcome (i.e. alive or dead). This provides additional information on the burden and epidemiology of pertussis (e.g. age-specific case-fatality rates). Sentinel surveillance should be linked to developments in laboratory diagnostics and networks.

5) Regardless of the type of surveillance, designated reporting sites at all levels should report at a specified frequency (e.g. weekly or monthly) even if there are zero cases (often referred to as “zero reporting”).

**WHO–recommended standards for surveillance of selected vaccine-preventable diseases**

27 June 2008