

# Auckland Regional Public Health Service

Rātonga Hauora ā Iwi o Tamaki Makaurau



Working with the people of Auckland, Counties Manukau and Waitemata

## Update on Pertussis

### Health Professional Advice for the Auckland Region

Version: 24<sup>th</sup> August, 1600hrs

#### 1.0 CURRENT SITUATION

- The number of pertussis cases in the Auckland Region has trended upwards since September 2008.
- The monthly number of pertussis cases observed in May, June and July this year is five times higher than the number of cases notified in the same months last year.
- The year-to-date number of pertussis cases (01/01/2009 to 17/08/2009) was 136 compared to 38 cases for the same time period last year.
- Epidemics of pertussis tend to occur every 3 to 4 years. The last epidemic of pertussis in New Zealand occurred during 2004 and 2005.

#### 2.0 CHARACTERISTICS OF BORDETELLA PERTUSSIS INFECTION

- A highly infectious bacterial disease of the respiratory tract, caused by *Bordetella pertussis*, a gram negative cocco-bacillus.
- Transmitted by droplets from infected persons.
- Incubation period: 7-10 days (range 6-20 days).
- A case is most infectious from 7 days after exposure until 3 weeks after the onset of paroxysmal cough OR until the case has had at least 5 days of a treatment course of an appropriate antibiotic.
- Clinically, the disease is characterised by two stages. The catarrhal stage lasts 1 to 2 weeks and includes symptoms of runny nose, fever, malaise and cough. This stage is followed by the paroxysmal/toxaemic stage, which lasts 6 to 8 weeks and includes episodes of severe, prolonged coughing that often end in an inspiratory whoop, apnoea or vomiting. Infants under 6 months of age, immunised children, adolescents and adults often do not have paroxysmal coughing or a typical whoop.
- Complications include secondary infections (otitis media, pneumonia), and physical sequelae of prolonged coughing (e.g. subconjunctival haemorrhages, epistaxis, petechiae, central nervous system haemorrhages, pneumothoraces, herniae).
- Young infants are the most vulnerable with respect to complications. Periods of apnoea may result in anoxic encephalopathy, seizures and death.

### 3.0 CASE AND CONTACT DEFINITIONS

- A **suspect case** is defined as a child under the age of 5 years with paroxysmal cough and whoop, vomit, or apnoea, for which there is no other known cause.
- A **probable case** is defined as a case with cough lasting longer than two weeks and one or more of the following: paroxysmal cough, cough ending in vomiting or apnoea, inspiratory whoop, for which there is no other known cause.
- A **confirmed case** is defined as a case with a clinically compatible illness that is laboratory confirmed or that is epidemiologically linked to a confirmed case.
- **Vulnerable contacts** are household contacts or those who have stayed overnight in the same room as the case AND are in one of the following categories:
  - Age less than 1 year,
  - Age less than 5 years of age AND partially immunised or un-immunised,
  - Has chronic disease or is immunocompromised,
  - Last trimester of pregnancy.
- **Non-vulnerable contacts** are defined as all members of the case's household or those who have stayed overnight in the same room as the case during their infectious period and are in continuing contact with a vulnerable person, but are not vulnerable themselves.

### 4.0 IMPORTANCE OF TIMELY IMMUNISATION

- Given the current high levels of pertussis in the community, it is even more important than usual that infants receive their immunisations on-time at 6 weeks, 3 months, and 5 months.
- Timely immunisation will prevent severe infection and infant death associated with pertussis.
- Booster immunisations are required at 4 and 11 years of age.
- Consider pertussis booster immunisation for people, including healthcare staff and preschool staff, who work with infants and young children.

### 5.0 MANAGEMENT OF PERTUSSIS CASES

- Due to the current increase in pertussis cases, please consider pertussis in the differential diagnosis for patients presenting with respiratory illness.
- If pertussis is suspected please phone or fax notification of the case to Auckland Regional Public Health Service (ph 09 623 4600 ext 27132# or ext 27134# or ext 27136#, fax 09 630 7431)
- It is recommended that 2 nasopharyngeal swabs should be taken, i.e.:
  - Nasopharyngeal swab with charcoal transport medium for pertussis **culture** AND
  - Nasopharyngeal swab with universal transport medium for pertussis **PCR**.
- First line treatment for pertussis is a **14 day course** of erythromycin.
  - Recommended erythromycin doses are as follows:
    - Adults (including in pregnant women with suspected pertussis): erythromycin ethylsuccinate 800mg bd for 14 days or 400mg QID for 14 days.
    - Infants aged > 1 month and older children: erythromycin ethylsuccinate 40-50mg/kg/day, given in equal doses 2 to 4 times/day, for 14 days (maximum 2 grams per day).

- Exceptions are as follows:
  - Infants less than 1 month old: Erythromycin is contraindicated because of the risk of infantile hypertrophic pyloric stenosis. Azithromycin (5 day course) is recommended instead for these infants at a dose of 10mg/kg (as a single dose) on the first day, followed by 5mg/kg/day on days 2-5.
  - People taking medicines which interact with erythromycin (such as anticonvulsants, immunosuppressives, lipid-lowering agents or chemotherapeutic agents). Alternative macrolides to consider in this situation are roxithromycin and clarithromycin.
  - People with macrolide hypersensitivity/allergy. A non-macrolide alternative is cotrimoxazole (sulphamethoxazole and trimethoprim).
- Exclude case from work, school, or pre-school until they have received at least 5 days of the treatment course of antibiotic, or until 3 weeks from the date of onset of paroxysmal cough.

## 6.0 MANAGEMENT OF CONTACTS OF PROBABLE/CONFIRMED CASES

- Household contacts should be assessed with respect to:
  1. whether they have symptoms suggestive of pertussis AND
  2. whether they are considered to be vulnerable to pertussis.

### 6.1 HOUSEHOLD CONTACTS WITH SYMPTOMS OF PERTUSSIS

- Arrange for nasopharyngeal swabs for pertussis culture/PCR if possible.
- Prescribe a **14 day treatment course** of antibiotics (see section 5.0 above) to reduce the infectivity of the patient to others.
- Notify Auckland Regional Public Health Service (see contact details above).
- Exclude person from work, school, or pre-school until they have received at least 5 days of the treatment course of antibiotic, or until 3 weeks from the date of onset of paroxysmal cough.

### 6.2 VULNERABLE AND NON-VULNERABLE HOUSEHOLD CONTACTS

- See definition above (Point 3.0).
- In order to minimise the risk that a vulnerable contact will develop pertussis, a **7 day prophylaxis** course of erythromycin is recommended for persons in the household. This is only effective if it is commenced within 21 days of the onset of cough in the index case.
- An alternative for adult members of the household is a 7 day course of roxithromycin, which has fewer side effects than erythromycin.
- Non-vulnerable contacts aged 5-15 years are exempt from chemoprophylaxis if they are fully immunised, including having received the appropriate booster immunisations at age 4 years and 11 years.
- Non-immune children who are household contacts should be excluded from school/preschool for 7 days after the last exposure to infection, or until they have received 5 days of antibiotic prophylaxis.