Clinical Pathway — *Pertussis* — Updated March 2023

Key Points

- Bordetella pertussis is a bacterial illness transmitted by respiratory droplets and secretions.
- Pertussis is especially serious in infants under 12 months of age (70% hospitalised, 30% apnoea)
- Incubation period 7-10 days (range 5-21)
- Case is most infectious from the onset of catarrhal symptoms to 3 weeks after onset of cough
- 80% of non-immune household contacts will acquire the disease
- Exclude from work, school, ECEC until 2 days of Azithromycin/ 5 days other antibiotics OR from 3 weeks from onset of paroxysmal cough if not treated
- Clinically compatible illness: a cough and one or more of: paroxysms of cough; cough ending in vomiting, cyanosis, or apnoea; inspiratory whoop

Case Definitions

- Under Investigation: a case that has been notified, but information is not yet available to classify it as probable or confirmed
- Probable case: a clinically compatible illness with
  - positive B. pertussis serology or,
  - no other known cause
- Confirmed case: a clinically compatible illness that is
  - laboratory confirmed by culture/PCR, or
  - linked epidemiologically to another confirmed case
- Not a case: a case that has been investigated and subsequently found not to meet the case definition

CLINICAL FEATURES

- Catarrhal stage (7-10 days)
- Fever, Runny nose, Malaise, Cough paroxysmal/Toxaemic stage (6-8 weeks)
- Severe prolonged coughing. May end with:
  - Inspiratory whoop
  - Apnoea
  - Vomiting
- Infants < 6 months and immunised cases may not have a typical whoop. Infants may only present with apnoea.

COMPLICATIONS

- Secondary infections
- Sequelae of prolonged coughing. e.g. sub conj. haemorrhage, epistaxis, petechiae, hernia, CNS haem., pneumothorax

NOTIFY TO ARPHS WITH THE FOLLOWING:

by Phone 09 623 4600 or notify@adhb.govt.nz

- Your details: Name, treating doctor, contact no.
- Case details: Name, address, age, ethnicity, NHI, occupation, contact number, pregnancy
- Clinical History: Include onset date of illness, paroxysmal cough onset date.
- Laboratory tests: Any tests arranged
- Immunisation Status: Dates of immunisations if available (schedule is 6 weeks, 3 months, 5 months, 4 years, 11 years)
- Links to confirmed or probable cases: Including names

MANAGEMENT OF CASE

LABORATORY TESTING

Investigate only where necessary
- Preferred: Flocked nasopharyngeal swab for PCR
- NP charcoal swab for culture early in illness
- Paired serology (2-4 weeks apart) late in illness

FIRST LINE TREATMENT OPTIONS

1**. Azithromycin** for a 5-day course is fully funded for all age groups. The recommended dose varies by age and is:

Infants and children:

Day 1: 10mg/kg/day in a single dose (max 500mg / day)

Days 2-5: 5mg/kg/day in a single daily dose (max 250mg / day)

Adults:

Day 1: 500mg as a single dose

Days 2-5: 250mg once daily

Exclusion: 2 days (48 hrs) since treatment started

2. **Erythromycin ethyl succinate** (EES/E-Mycin) is also fully funded for treatment in children aged 12 months and older and in adults but must be given as a 14-day course:

Children 12 months or older: 10 mg/kg/dose four times a day for 14 days (max 400mg qid)

Adults: 400 mg four times a day for 14 days

Exclusion: 5 days since treatment has started

NOTE: Macrolide use in pregnancy and the neonatal period has been associated with an increased risk of hypertrophic pyloric stenosis.

Roxithromycin (RULIDE) is NOT recommended for pertussis treatment or prophylaxis due to low serum and tissue concentrations.

CONTACT TRACING & MANAGEMENT

The aim of contact management is two-fold:

- To identify symptomatic contacts for treatment.
  A contact can be defined as someone who has been in close proximity (within 2 meters) of the index case for 1 hour or more, during the cases infections period or who has had direct contact with respiratory secretions.
- To provide chemoprophylaxis to reduce the odds of infection in high priority contacts:
  - infants under 12 months
  - pregnant women in their 3rd trimester
  - immune compromised, those with chronic disease
  - contacts who themselves have daily contact (e.g. through childcare or work) with infants under 12 months, pregnant women, or others at risk of severe illness or complications

CHEMOPROPHYLAXIS OF CONTACTS

Recommend for all High Priority Contacts (as above)
- Same antibiotics/dose/duration as first line treatment

Other Contacts
- Anyone exposed to pertussis may benefit from chemoprophylaxis
- Chemoprophylaxis is least likely to be of benefit to the following:
  - 5-15 years and fully immunised (including 4, 11 years booster)
  - >15 years and had TdaP in the last 5 years

EXCLUSION OF CONTACTS

All contacts should be advised to avoid attending ECEC, school, work or associating with high risk individuals if they become symptomatic.

Contact exclusion for 14 days after their last exposure to the infectious case is recommended where:
- Contacts have been advised prophylaxis (high priority contacts); AND
- They are incompletely immunised for age; AND
- They refuse to take prophylactic antibiotics

RESOURCES
For written resources for health professionals and patients refer to:

https://www.arphs.health.nz/our-resources/category/whooping-cough-pertussis