Whooping cough (pertussis)

Public Health Agency

factsheet for primary care practitioners

Background

The information in this factsheet has been developed to help health professionals identify and test appropriately for suspected cases of whooping cough (pertussis).

Whooping cough (pertussis) is a notifiable disease under the Public Health Act (NI) 1967. Health professionals have a duty of care to report all suspected and confirmed cases to public health to ensure that contacts are managed promptly.

Notifiable cases should be notified to:
Public Health Agency (PHA) Health Protection Duty Room
Telephone: 0300 555 0119;
Email: pha.dutyroom@hscni.net

Pertussis is a highly contagious, vaccine-preventable, respiratory disease that is caused by the Bordetella pertussis bacterium. It can affect people of all ages, and can cause serious and life-threatening complications. Young unimmunised infants are the most vulnerable group with the highest rates of complication and death.

Pertussis activity tends to peak every three to four years. In 2012, cases peaked above anticipated levels across the United Kingdom (UK), and as a result a UK-wide national outbreak was declared in April 2012. Following further increases in disease and a number of deaths in young infants, in October 2012 the then Department of Health, Social Services and Public Safety launched a vaccination programme to vaccinate all pregnant women from week 16 of pregnancy. This immunisation is important to protect infants from birth until they can receive their first primary vaccines at two months of age.

Since 2012, the annual number of laboratory confirmed cases of pertussis in Northern Ireland has remained higher than before 2012. In 2017, there were 72 confirmed cases, a decrease since 2016 (110 cases). The greatest number of cases is in those aged over 25 years (50%) who usually suffer milder disease with a cough that may persist for many weeks.

Clinical features

The clinical presentation of pertussis is influenced by a variety of factors including the patient's age and vaccine status. The incubation period is on average between 7–10 days (range 5–21 days).

Classical symptoms are most often seen in children and consist of three symptomatic stages of illness: catarrhal stage; paroxysmal stage (frequent episodes of paroxysmal coughing and inspiratory 'whooping' which can be accompanied by vomiting); and a convalescent

stage. Each stage may last several weeks. Atypical presentations occur and the 'whoop' is less likely to be a feature of adult disease. Infection in adults and adolescents can lead to onward transmission to vulnerable infants.

You should suspect pertussis infection and report it to the PHA Health Protection Duty Room if someone presents with an acute cough lasting for 14 days or more, without an apparent cause, **plus one or more** of the following:

- paroxysms of coughing;
- post-tussive vomiting;
- inspiratory whoop;
- undiagnosed apnoeic attacks in young infants;

Or

- someone with signs and symptoms consistent with pertussis who has been in contact with a confirmed case in the previous 21 days;

Or

- someone who is known to be part of an ongoing outbreak investigation in a specific group of people. For example, children attending the same school or nursery where pertussis is known to be been circulating.

Laboratory tests for pertussis

The following tests can be used to diagnose pertussis:

1. Ppolymerase chain reaction (PCR) to detect bacterial genome.
2. Culture of the bacteria.;
3. Serology testing for detecting anti-pertussis toxin IgG.

Test performance and interpretation is affected by the duration of symptoms, patient's age, vaccine status, antibiotic treatment, specimen quality, specimen collection and timing of transport to the laboratory.

In order to ensure the laboratory reports results accurately, and to reduce false negative reports, clinicians should:

- document duration of symptoms on the laboratory request form;
- select the most appropriate test method as outlined in table 1;
- consider appropriate personal protective equipment (PPE) when obtaining sample to reduce the risk of infection spread.

Table 1: Laboratory tests for pertussis

Duration of symptoms	Patient age group	Test method	Sample type	Laboratory (consult your HSC Trust laboratory for local guidance on samples and transport)
Cough symptoms for < 3 weeks	All	PCR and culture if your local HSC lab offers it	Nasopharyngeal swab (NPS) / pernasal swab (PNS) /nasopharyngeal aspirates (NPA) Throat swabs acceptable for PCR testing **ONLY**	**PCR** requests tested and reported by Regional Virus Laboratory
Cough symptoms > 3 weeks	Older than 12 months of age and not vaccinated against pertussis in the previous year*	Serology	Serum blood sample	**Serology** requests tested and reported by National (Public Health England) Reference Laboratory

*Antibody levels confounded by recent vaccination

Public health management of suspected cases

Report suspected and confirmed cases to the PHA Health Protection Duty Room. The duty team will provide advice on the appropriate public health management of suspected cases and contacts to help reduce the spread of infection.

Management of suspected cases

1. Send appropriate laboratory test.
2. Antibiotic treatment:
   - Depends on duration of symptoms and clinical assessment.
   - Appropriate antibiotics only recommended if symptoms <21 days.
   - Administer as soon as possible after onset to eradicate organism and limit ongoing transmission.
   - Discuss with HSC Trust Microbiology Service if advice on antibiotic choice is required.
3. Provide advice on good respiratory hygiene.
4. Infectiousness and exclusion:
   - Cases are infectious for up to 21 days from onset of symptoms if antibiotics have not been administered.
   - Exclude from school / work until 2 days of the antibiotic course is complete.
   - No exclusion necessary after 21 days of symptoms.
5. Assist the PHA Duty Team in the identification and management of contacts requiring public health action (below).

Management of contacts of suspected cases

Household contacts of the case that are in a 'priority group' will require further public health action, for example, administration of antibiotic prophylaxis.

'Priority groups' include:

- individuals at increased risk themselves from complications following pertussis, for example, susceptible infants.

- those at risk of transmitting the infection to individuals at increased risk, for example, Health Care Workers who work with infants and pregnant women.

HSC Public Health Agency

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