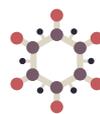


the 2017 pertussis guide for general practitioners

whooping cough

Infants less than 6 months are at greatest risk of severe illness and death.



**IMMUNISATION
COALITION**

Pertussis

Cause Pertussis (whooping cough) is an acute respiratory illness caused by the *Bordetella pertussis* bacterium.

Transmission Pertussis is highly contagious and only found in humans. It spreads by airborne droplets when an infected person sneezes or coughs. The droplets can be breathed in by others or passed on to others by touching a contaminated surface.

People with pertussis are most infectious in the first three weeks after the onset of symptoms.

Symptoms Symptoms will start to appear 1–3 weeks after exposure to the bacteria. The disease begins like a cold, with a runny nose, mild fever and a cough.

The cough gets worse and can last 1–2 months or longer. The illness is characteristically known for repeated violent bouts of coughing followed by a whooping inspiration. The whoop may be absent in very young infants, older children and adults.

Some children cough so much they vomit afterwards.

Complications

Severe complications, which occur almost exclusively in unvaccinated people, include pneumonia, hypoxic encephalopathy and death.

Some of the complications of whooping cough in young babies:

- haemorrhage
- apnoea
- pneumonia
- inflammation of the brain
- convulsions
- permanent brain damage
- death.



In 2016, 20,104 cases of pertussis were reported nationally.

In 2016, children under 15 years of age accounted for 52% of the pertussis notifications.¹

Vaccination

Efficacy A 3-dose primary series of immunisation with DTPa vaccine at 2, 4 and 6 months of age results in 84% protective efficacy against severe disease.²

Immunity to pertussis wanes over time. Effectiveness of 3 doses of DTPa vaccine declined progressively from 2 years of age to less than 50% by 4 years of age.³

A large trial in adolescents and adults demonstrated overall vaccine efficacy against confirmed pertussis of 92% within 2.5 years of vaccination.⁴

Who should be vaccinated?

Infants and children FREE pertussis vaccine is available under the National Immunisation Program (NIP): see table below.

Vaccine	2 m ⁵	4 m	6 m	18 m	4 y	12–17 y
(DTPa) ⁶	1st dose	2nd dose	3rd dose	1st booster	2nd booster	
(dTpa) ⁷						3rd booster

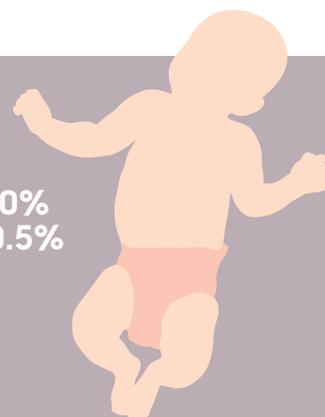
Older children and teenagers FREE catch up vaccines are now available through the NIP for individuals 10 to 19 years of age.

Humanitarian entrants FREE catch up vaccines are now available through the NIP for refugees and other humanitarian entrants aged 20 years and over.

Adults dTpa is recommended for any adult who wishes to reduce the likelihood of becoming ill with pertussis, but particularly important for special risk groups. Vaccination for adults is NOT FUNDED under the NIP, apart from pregnant women (see overleaf).



Children under one year of age have a 50% hospitalisation rate 0.5% mortality.



If a child under 6 months of age gets whooping cough, they will usually need to be admitted to hospital.

- ⁵ First dose can be given as early as 6 weeks of age
- ⁶ DTPa = Diphtheria tetanus and acellular pertussis-containing vaccines, which are used in children < 10 years of age. There are six formulations: Infanrix (DTPa), Infanrix hexa (DTPa-hepB-IPV-Hib), Hexaxim (DTPa-hepB-IPV-Hib), Infanrix IPV (DTPa-IPV), Quadracel (DTPa-IPV) and Tripacel (DTPa)
- ⁷ dTpa signifies formulations that contain substantially lesser amounts of diphtheria toxoid and pertussis antigens than child (DTPa-containing) formulations. dTpa vaccines are used in adolescents and adults. There are four formulations: Boostrix (dTpa), Boostrix-IPV (dTpa-IPV), Adacel (dTpa) and Adacel Polio (dTpa-IPV)

Adults account for almost half of all notified pertussis cases.

Special risk groups

Pregnant women

(vaccine FREE under state and territory initiatives)

- Protects the newborn especially in the first 6 weeks of life via antibodies that cross the placenta.
- dTpa vaccine is recommended during the third trimester of each pregnancy. Optimal time is between 28 to 32 weeks but can be given at any time during the third trimester.
- Women who are not vaccinated during pregnancy should be vaccinated as soon as possible after delivery. dTpa can be given to breastfeeding women.

People in contact with infants

(NOT FUNDED under NIP for these individuals)

- Adult household contacts and carers (e.g. fathers and grandparents of infants) should ideally receive a dTpa vaccine at least 2 weeks before beginning close contact with the infant.
- A booster vaccine is recommended for those who have not received one in the previous 10 years.
- Adults working with infants and children under 4 should receive a dose of dTpa vaccine with a booster dose every ten years.
- All healthcare workers should receive a dose of dTpa with a booster dose every ten years.

Side effects

Compared to whole-cell pertussis vaccines (DTPw), acellular pertussis vaccines are associated with a much lower incidence of:

- Fever (20% vs 45%)
- Local reactions (10% vs 40%)

Extensive limb swelling can occur with booster doses of DTPa. Such reactions commence within 48 hours of vaccination, last 1–7 days and resolve completely.⁸

Vaccine safety in pregnancy

Studies show no increased risk of adverse pregnancy outcomes (such as stillbirth, fetal distress or low birth weight) related to pertussis vaccination during pregnancy.⁹

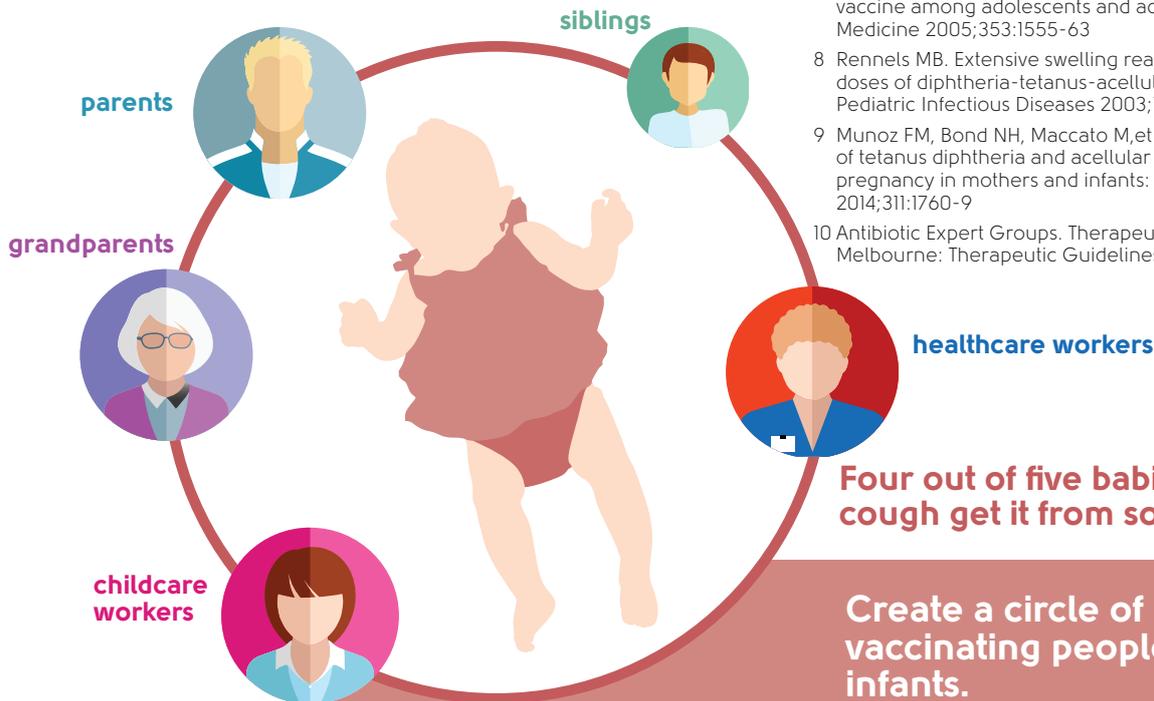
How is pertussis treated?

Pertussis is treated with an antibiotic usually azithromycin for 5 days, or trimethoprim-sulfamethoxazole for 7 days or clarithromycin for 7 days.¹⁰ These antibiotics will prevent the spread of pertussis to other people.

If the patient has been coughing for more than three weeks, they are no longer infectious. In these cases, antibiotics are usually not needed.

REFERENCES

- 1 Department of Health, National Notifiable Diseases Surveillance System, 9 October 2017
- 2 Zhang L, Prietsch SO, Axelsson I, Halperin SA. Acellular vaccines for preventing whooping cough in children. Cochrane Database of Systematic Reviews 2012;(3):CD001478
- 3 Quinn HE, Snelling TL, Macartney KK, McIntyre PB. Duration of protection after first dose of acellular pertussis vaccine in infants. Pediatrics 2014;133:e513-9
- 4 Ward JI, Cherry JD, Chang SJ, et al. Efficacy of an acellular pertussis vaccine among adolescents and adults. New England Journal of Medicine 2005;353:1555-63
- 8 Rennels MB. Extensive swelling reactions occurring after booster doses of diphtheria-tetanus-acellular pertussis vaccines. Seminars in Pediatric Infectious Diseases 2003;14:196-8
- 9 Munoz FM, Bond NH, Maccato M, et al. Safety and immunogenicity of tetanus diphtheria and acellular pertussis immunization during pregnancy in mothers and infants: a randomized clinical trial. JAMA 2014;311:1760-9
- 10 Antibiotic Expert Groups. Therapeutic guidelines: antibiotic. Version 15. Melbourne: Therapeutic Guidelines Limited; 2014



Four out of five babies with whooping cough get it from someone at home.

Create a circle of protection by vaccinating people in contact with infants.

Published by the Immunisation Coalition in October 2017
Suite 1222, 1 Queens Road, Melbourne, Victoria 3004 T: 03 9863 8650
E: info@immunisationcoalition.org.au

The Immunisation Coalition is a not for profit advocacy group with a mission to create awareness regarding the importance of immunisation. Immunisation still provides the best protection against infectious diseases. We work with consumers, health professionals and organisations with an interest in immunisation and government health agencies, ensuring that the information provided to consumers through our website and other communication channels is current, easily understood and scientifically informed.

Visit www.immunisationcoalition.org.au

 Follow us on Twitter
@immunisationgap
 Find us on Facebook
@immunisationcoalition



Additional copies of this document can be downloaded from our website.

IMMUNISATION
C O A L I T I O N