

# The Epidemiology of Pertussis

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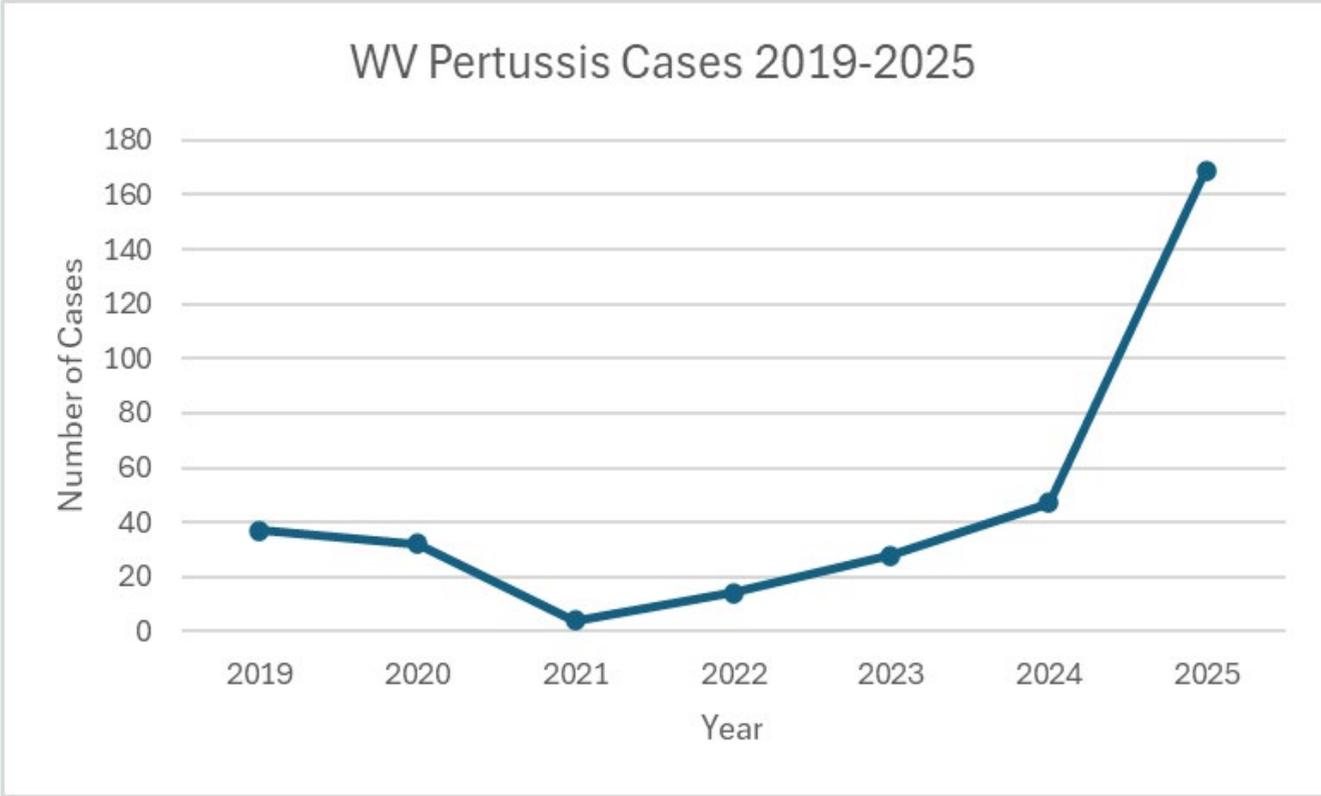
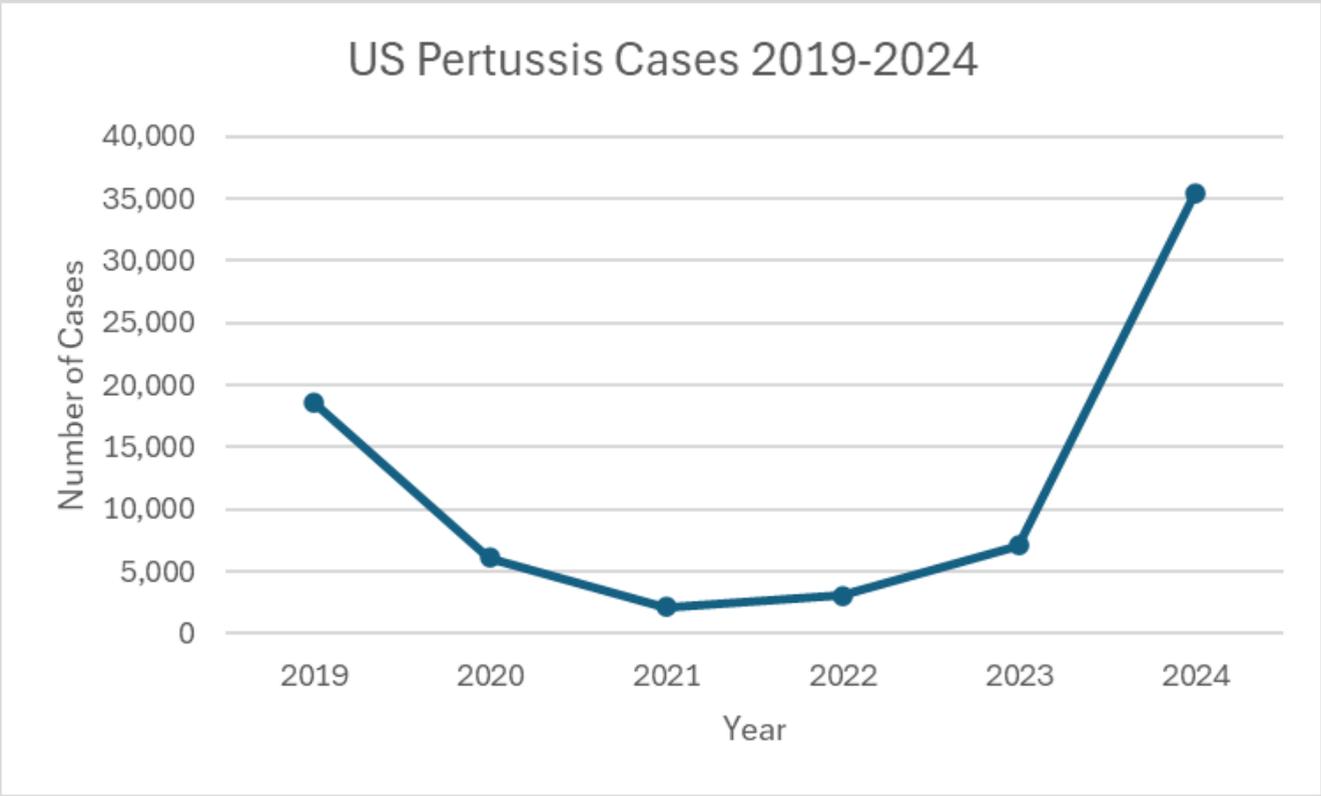
January 13, 2025  
Webinar



# Objectives

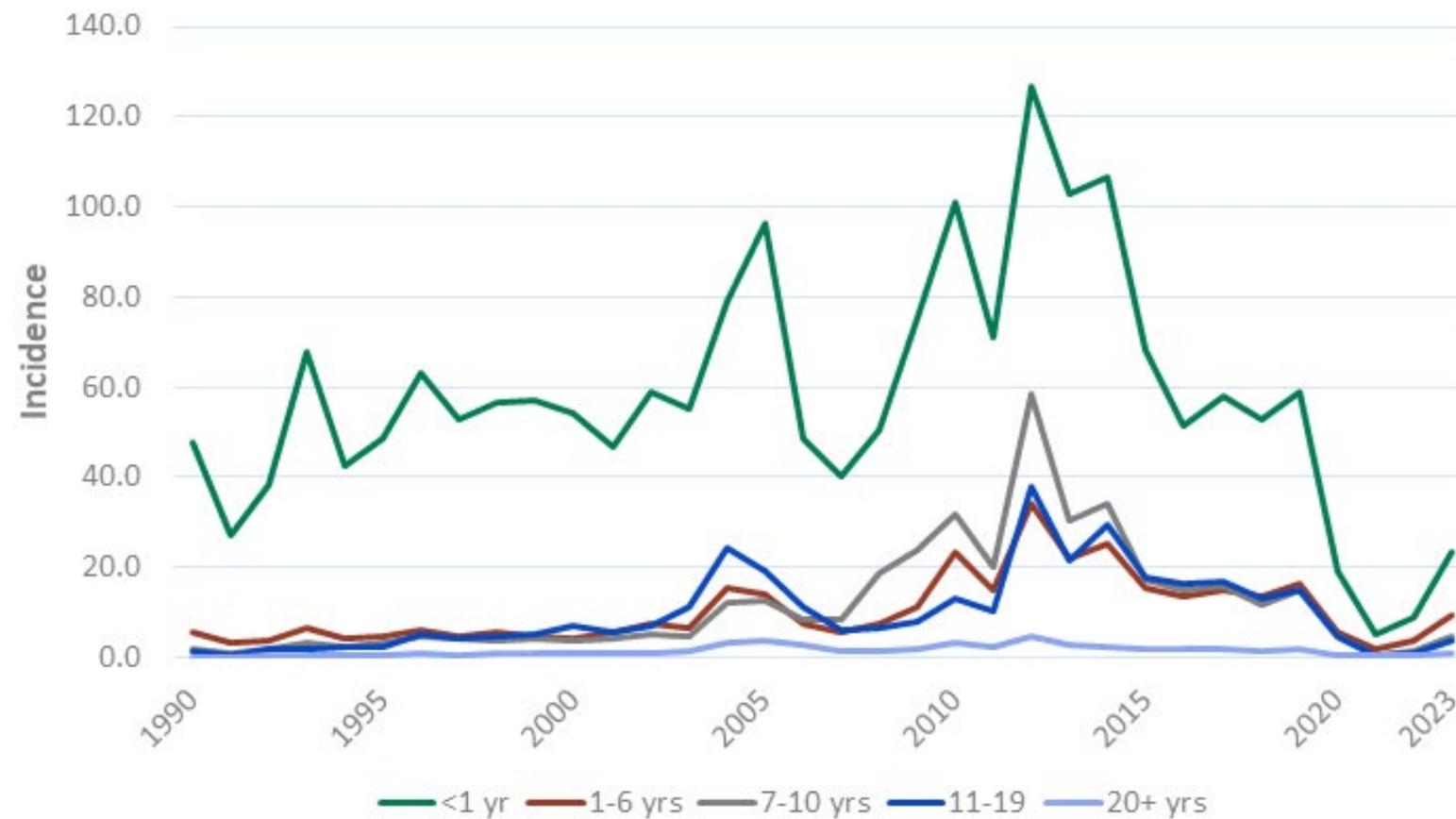
- Describe the nationwide and statewide epidemiologic trends of pertussis over time
- Identify the factors driving the shift in the epidemiology and disease burden of pertussis
- Explain the role of Public Health in pertussis investigations, including the identification and management of close contacts, and control and prevention measures to prevent the spread of disease

# Nationwide vs Statewide Pertussis Cases



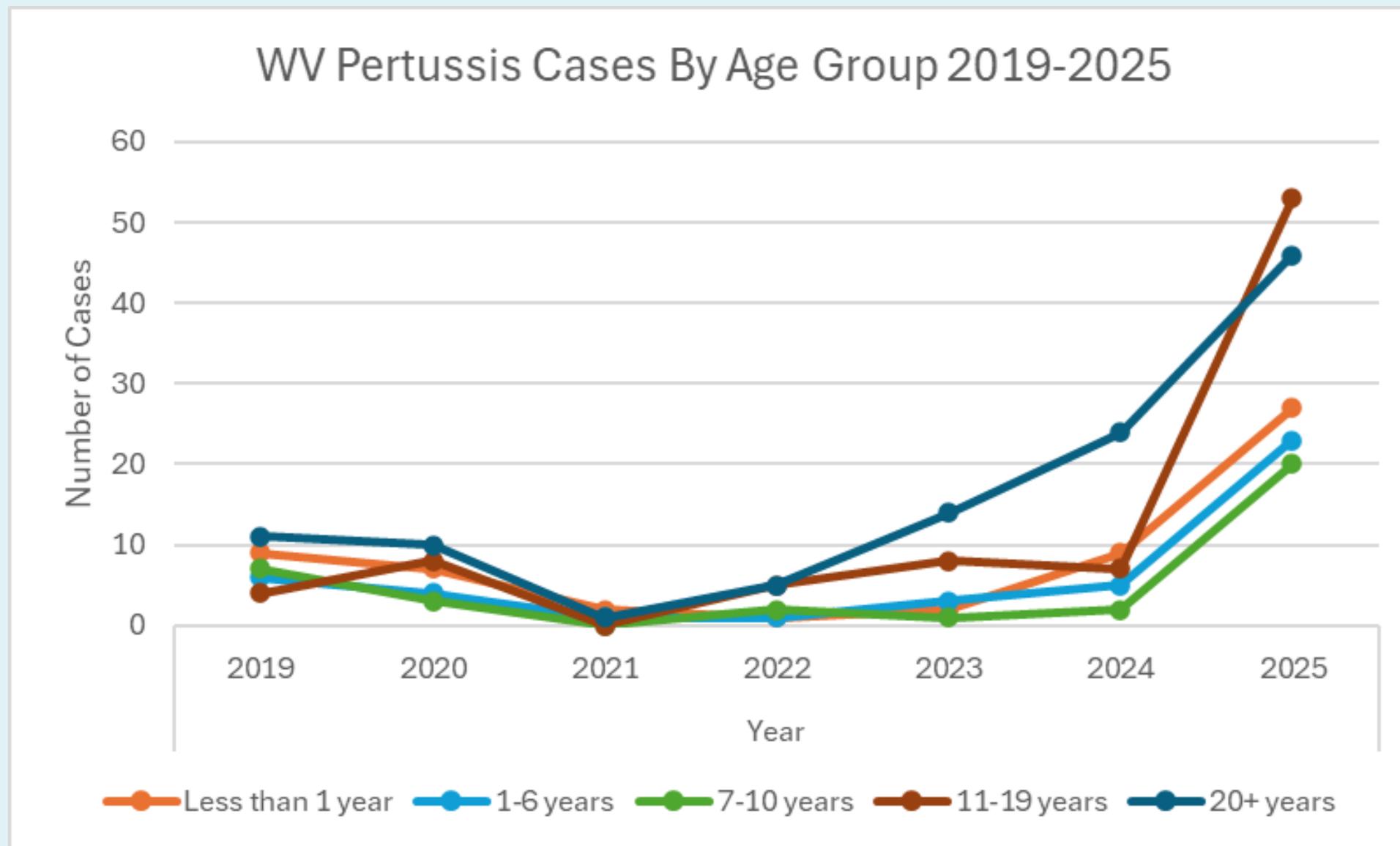
# Nationwide Pertussis Incidence by Age Group

## Reported pertussis incidence by age group: 1990-2023

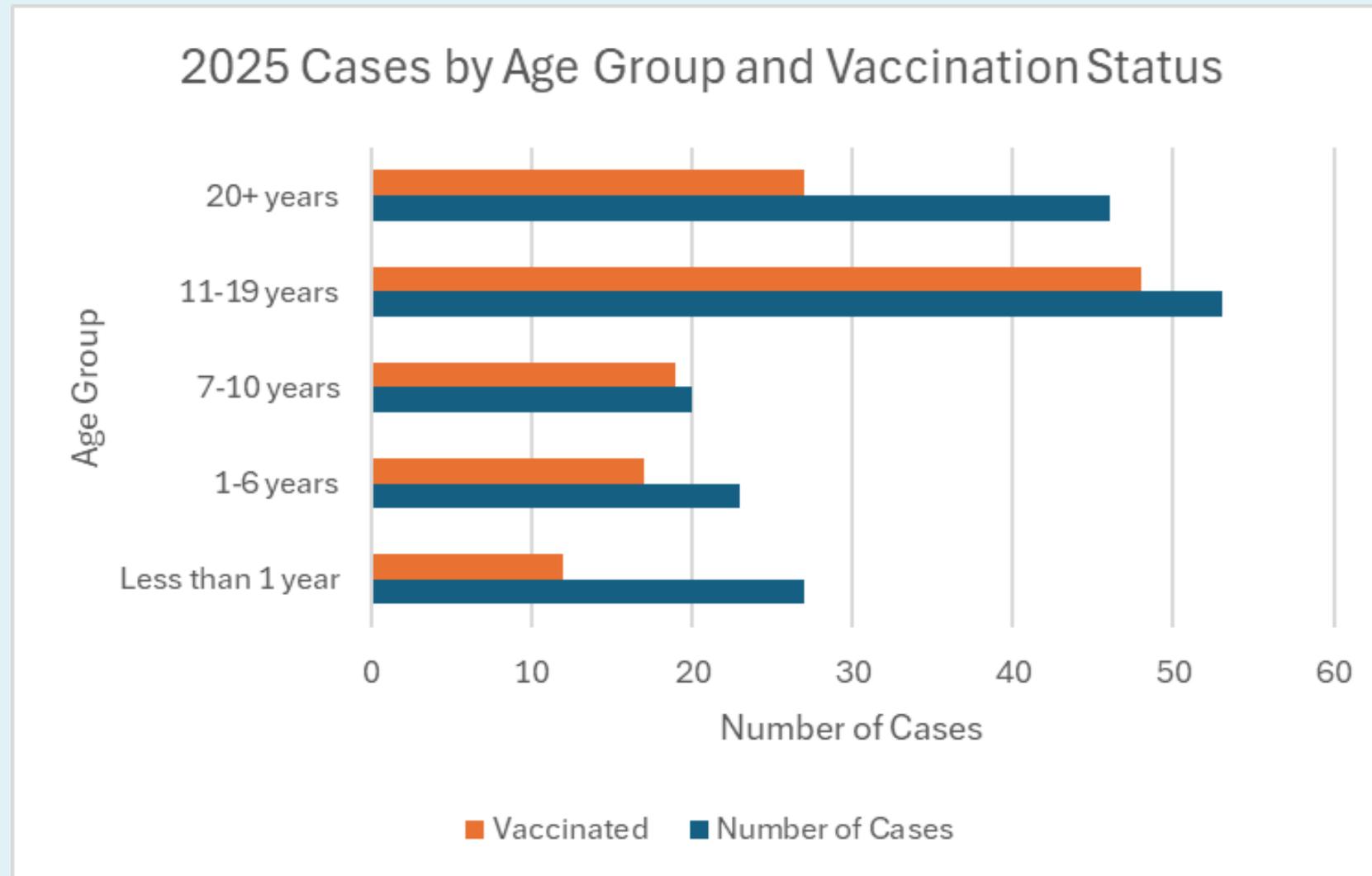


SOURCE: CDC, National Notifiable Diseases Surveillance System

# Statewide Pertussis Cases by Age Group



# 2025 Pertussis Cases By Age and Vaccination



# Possible Factors Driving Shift in Pertussis

## Multiple factors have likely contributed to the increase

- Waning immunity from acellular pertussis vaccines
- Heightened provider and public awareness
- Improved diagnostic testing
- Possible molecular changes within the bacterium itself

# Role of Public Health in Pertussis Investigations

## Public health investigation of probable or confirmed cases should be initiated within 24 hours of receiving the initial report

- Educate the public, healthcare providers, and pregnant women regarding pertussis disease, potential complications and preventive options
- Conduct case investigation to identify potential source of infection
- Conduct contact tracing to locate additional cases and close contacts
- Provide Post-Exposure Prophylaxis (PEP) recommendations for close contacts

## Place confirmed and probable cases in droplet isolation to inhibit further spread of pertussis

- Droplet isolation should be in place for five days after starting antimicrobial therapy or 21 days after the onset of cough if the patient does not receive the recommended antimicrobial therapy
- Recommend PEP to all household and other close contacts of a probable or confirmed case, regardless of their immunization status

# Identification of Close Contacts

**Anyone who has had direct face-to-face contact within three feet of a symptomatic case-patient for a period (one hour or more) during the catarrhal and early paroxysmal stages of infection. This includes:**

- ALL residents of the same household
- Daycare and babysitting contacts
- Close friends
- Anyone in a shared confined space in close proximity for one hour or more
- Anyone with direct contact with respiratory, oral, or nasal secretions from a symptomatic case-patient

## **Asymptomatic contacts who are within 21 days of their last exposure to an infectious case-patient:**

- Prophylaxis with an approved treatment regimen
- Bring immunizations up to date

## **Asymptomatic contacts who were last exposed more than 21 days previously:**

- Chemoprophylaxis has limited value but should be considered in households that have high risk persons
- Bring immunizations up to date

## **Symptomatic contacts:**

- Evaluate case status
- Test the individual
- Treat with an approved treatment regimen
- Isolate until test results received and treatment completed
- Bring immunizations up to date

# Exposures in Childcare

- Exposed children and care providers should be observed for respiratory tract symptoms for 21 days after the last contact with an infectious case-patient
- Immunization and chemoprophylaxis should be administered as recommended for household and other close contacts
- Symptomatic children with probable or confirmed pertussis should be excluded from childcare pending evaluation and completion of five days of recommended antibiotic therapy
- Untreated individuals should be excluded until 21 days have elapsed from cough onset
- Asymptomatic close contacts are not contagious and do not need to be excluded but should be monitored for the development of symptoms

# Prevention Measures

- Educate the public regarding pertussis, transmission, risks, and prevention measures
- Educate the public about proper cough etiquette and respiratory hygiene
- Educate about proper hand hygiene and washing hands frequently

## **Two or more epi-linked cases from different households with symptom onset within 42 days of one another**

- Immediately isolate symptomatic individuals and ensure that cases stay home until they have completed five days of appropriate treatment or for 21 days after cough onset
- Report outbreak immediately to your local health department (LHD)
- Conduct contact tracing and collect nasopharyngeal (NP) swabs from symptomatic individuals for testing
- Start a line list and use it to identify and track cases and to identify contacts
- Provide close contacts with PEP
- Bring contacts up to date on vaccinations
- Bring cases up to date on vaccinations upon completion of treatment

# Contact Information



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