Whooping Cough (Pertussis)

OCTOBER 31, 2024

Pertussis Surveillance and Trends

KEY POINTS

- CDC tracks pertussis cases using a national surveillance system.
- CDC works with several states on enhanced pertussis surveillance.
- Cases have increased over the last few decades but remain low.
- Experts believe that much of the disease goes unrecognized and unreported.
- Learn where the data come from and latest trends.



Recent trends

Reports of pertussis cases were lower than usual over the past few years, during and following the COVID-19 pandemic. However, the United States is beginning to **return to pre-pandemic patterns** where more than 10,000 cases are typically reported each year. It's likely mitigation measures used during the pandemic (e.g., masking, remote learning) lowered transmission of pertussis.

In 2024, reported cases of pertussis increased across the United States, indicating a return to more typical trends. Preliminary data show that more than **five times as many cases** have been reported as of week 43, reported on October 26, 2024, compared to the same time in 2023. The number of reported cases this year is higher than what was seen at the same time in 2019, prior to the pandemic.

Vaccination is the **best way to prevent pertussis**. However, as typical infection patterns return to the United States, CDC expects pertussis cases to increase both in unvaccinated and vaccinated populations. Pertussis occurs in vaccinated people since protection from vaccination fades over time. Local and state health departments are familiar with these patterns. They're also efficient at responding to increasing pertussis cases and implementing appropriate control strategies.

Available data

The latest data reported to CDC are available online through the National Notifiable Diseases Surveillance System. Note that due to a lag in reporting and data verification, the most up to date information would be available from state and local health departments.

View the latest data available from CDC

Data systems

National Notifiable Diseases Surveillance System

Pertussis is a **nationally notifiable disease**.

Healthcare providers should notify the appropriate health department of all patients with suspected pertussis.

Diagnostic laboratories should notify health departments of all positive pertussis laboratory results.

State health departments then report pertussis cases to CDC through the National Notifiable Diseases Surveillance System (NNDSS). NNDSS is useful for monitoring epidemiologic trends in disease over time.

Keep Reading:
National Notifiable Diseases Surveillance System (NNDSS)

Enhanced pertussis surveillance

CDC partners with seven states participating in the Emerging Infections Program network to conduct enhanced pertussis surveillance (EPS). This network also conducts surveillance on other *Bordetella* species.

EPS sites

- Conduct enhanced case ascertainment and augmented data collection.
- Collect isolates and specimens for further characterization at CDC.
- Provide infrastructure for conducting pertussis special studies.

This additional information goes beyond what CDC receives through NNDSS.

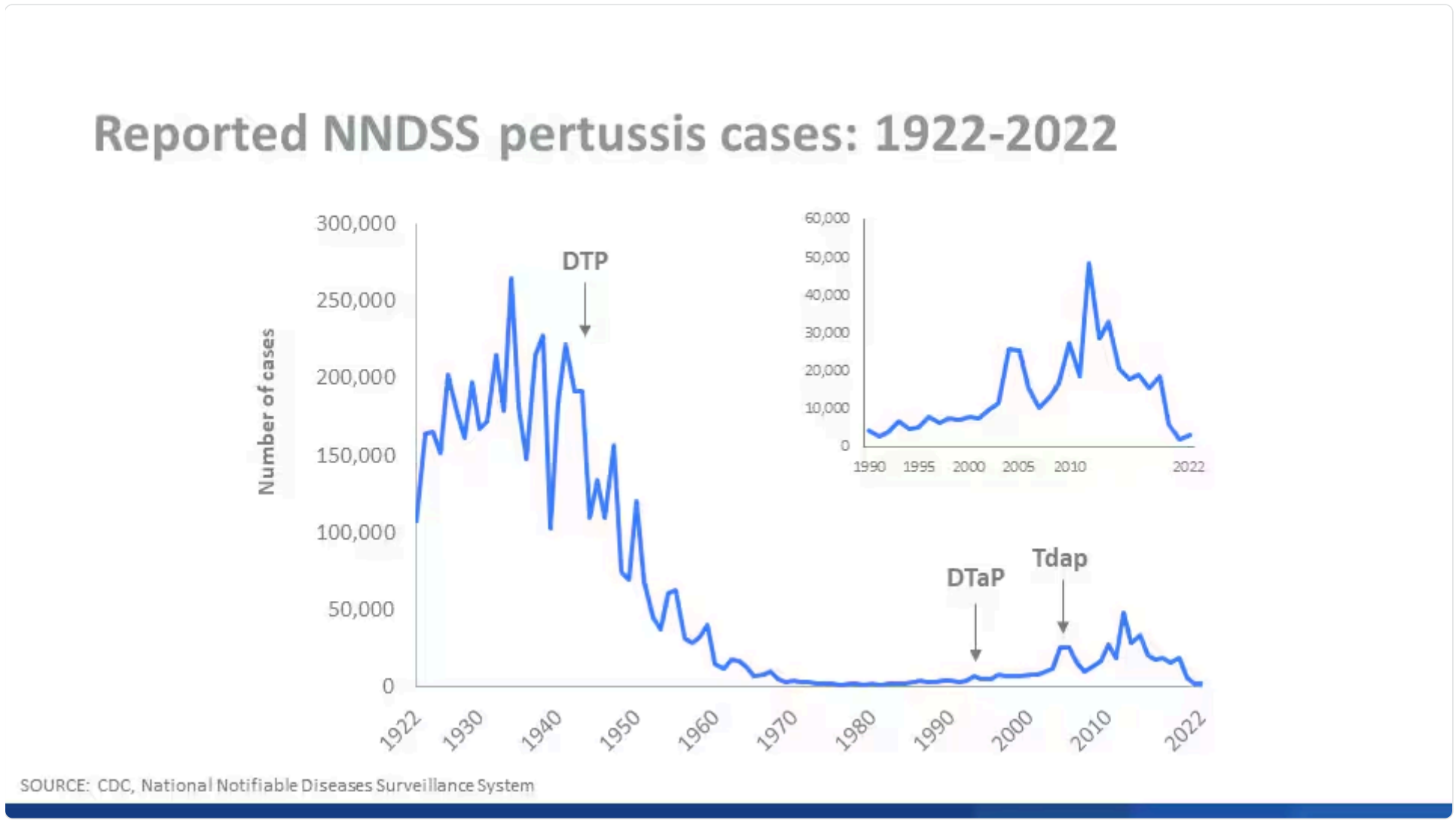
How the data are interpreted

Pertussis cases before widespread vaccination

In the 20th century, pertussis was one of the most common childhood diseases and a major cause of U.S. childhood mortality. Before the availability of a pertussis vaccine in the 1940s, public health experts reported more than 200,000 cases of pertussis annually.

Pertussis cases from the 1940s to 1980s

Widespread use of the vaccine began with the introduction of the diphtheria, tetanus toxoid, and whole-cell pertussis (DTP) vaccine in 1948. Since then, the number of cases each year has decreased more than 90%, compared with the pre-vaccine era.



Cases have steadily declined, and remain relatively low today.

Pertussis cases since the 1980s

During the 1980s, pertussis reports began increasing gradually, leading to a peak in 2012 with 48,277 reported cases. Since then, reported cases remained elevated until the start of the COVID-19 pandemic in 2020.

Several factors have likely contributed to the increase in reported cases, including

- Improved recognition of pertussis by healthcare providers
- Greater access to and use of laboratory diagnostics
- Increased surveillance and reporting to public health departments
- Waning immunity from acellular pertussis vaccines

Keep Reading:

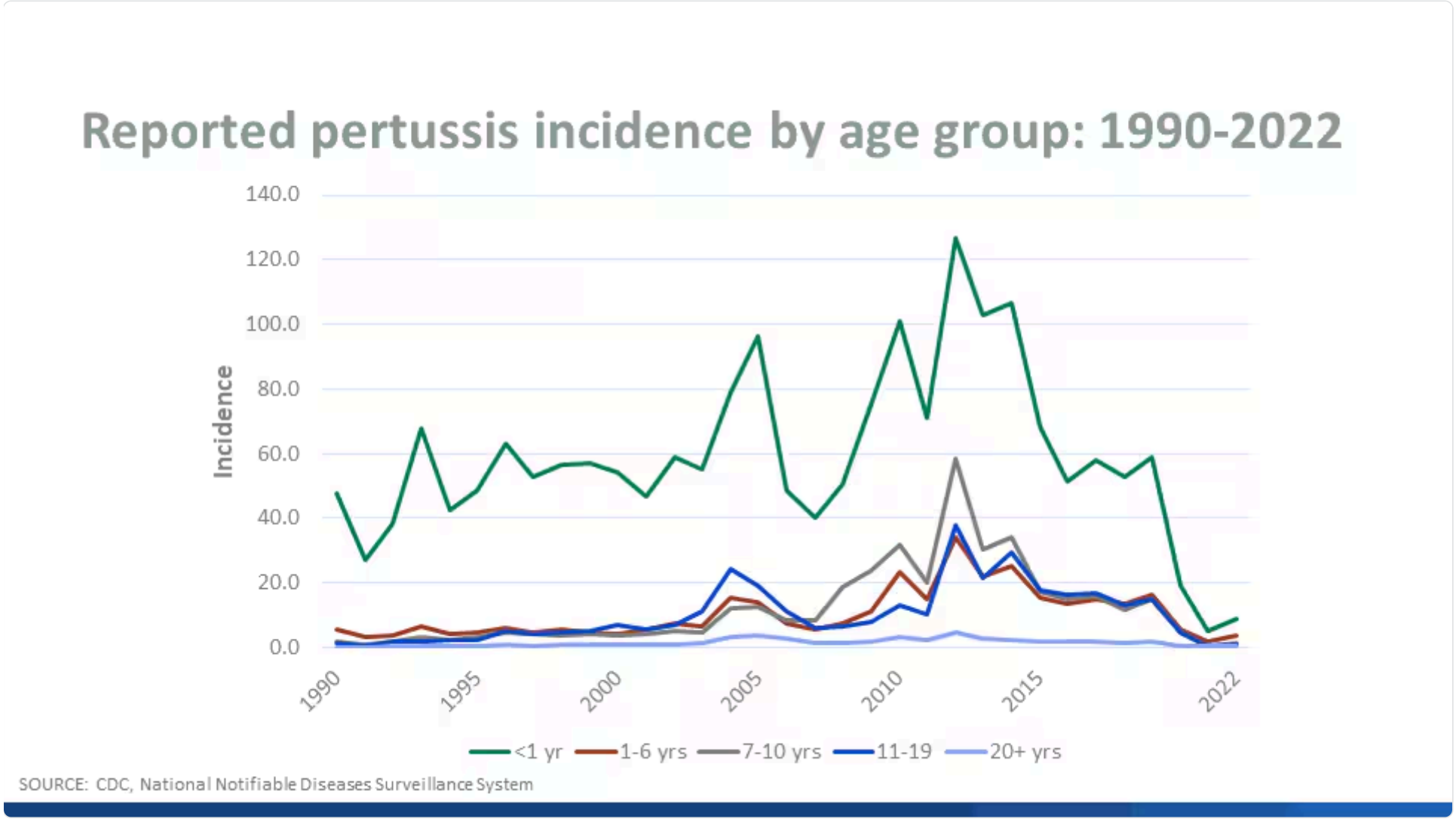
Pertussis Cases by Year (1922-2022)

Impact of genetic changes

Bordetella pertussis, the bacteria that cause pertussis, are always changing at a genetic level. CDC continues to evaluate what impact, if any, molecular changes in *B. pertussis* are having on public health.

Infants experience highest incidence

Infants under one year old are at greatest risk for serious disease and death because their immune systems are still developing. This age group continues to have the highest reported rate of pertussis.



Infants under 1 year old have the highest incidence of pertussis.

Keep Reading:
Pertussis Incidence by Age Group and Year (1990-2022)

Data reporting

NNDSS

View NNDSS infectious disease data tables.

Pertussis surveillance reports

View pertussis data, including case counts and incidence by state and age, DTaP vaccination history of cases, and pertussis-related deaths.

- 2023 provisional report PDF
- 2022 final report PDF
- 2021 final report PDF

These and older surveillance reports can be found at CDC Stacks.

Data definition

The Council of State and Territorial Epidemiologists (CSTE) published the most recent case definition for pertussis in 2020.

Resources

Pertussis chapter of the Manual for the Surveillance of Vaccine-Preventable Diseases

SOURCES

CONTENT SOURCE:

National Center for Immunization and Respiratory Diseases; Division of Bacterial Diseases