

What can we learn from West Virginia's whooping cough outbreak?

The respiratory condition is as contagious as measles, with one infected person able to spread the disease to as many as 17 others



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Throughout her 15-year career as a pediatric hospitalist, Lisa Costello had never seen a case of pertussis.

That is, until this fall.

Pertussis, or whooping cough, is on the rise in Pennsylvania's neighboring state of West Virginia, [at rates not seen in the state since 2010](#).

This occurs as vaccine confidence takes a hit at the highest levels of American government, and doctors fight to urge parents to get themselves and their children vaccinated. The young child Costello first diagnosed with

whooping cough did not have immunizations for any vaccine-preventable diseases, she said.

“We have good school-age immunization rates, but our preschool rates are still pretty low,” said Costello, who is also an associate professor in the pediatrics department at the WVU School of Medicine. “This is where having high [immunization rates] is helpful to protect the youngest among us from getting severe disease,” she said.

West Virginia law requires students entering schools to be vaccinated. Students can get a medical exemption signed by a doctor, but, unlike Pennsylvania, the state does not allow nonmedical exemptions.

Pertussis is a highly contagious respiratory condition caused by the bacteria *Bordetella pertussis*. Symptoms start off similar to a common cold then develop into a characteristic “whoop” cough. Infants and children are especially susceptible to complications, because infants’ immune systems are still developing and their airways are more easily blocked. Whooping cough also leads to coughing fits, which, in babies, can stop their breathing.

The respiratory condition is as contagious as measles, with one infected person able to spread the disease to 12 to 17 others, and it can be contagious for up to three weeks since the first onset of a cough.

The West Virginia Department of Health (WVDH) [alerted hospitals and providers of the outbreak](#) on Nov. 6, when 126 cases had been reported cases since the beginning of the year; more than one in five of those patients required hospitalization.

That’s also when Jeannine Welch, a nurse with the health department, and Lucas Moore began to see cases. Moore, an epidemiologist overseeing six West Virginia counties, including the Preston County, a hotspot for the pertussis outbreak, has been with the health department for six years. Similar to Costello, this has been the first whooping cough outbreak he’s seen in the state.

“I’ve seen lots of COVID-19, lots of flu and lots of GI outbreaks,” he said. “This is the first of a vaccine-preventable disease I’ve seen.”

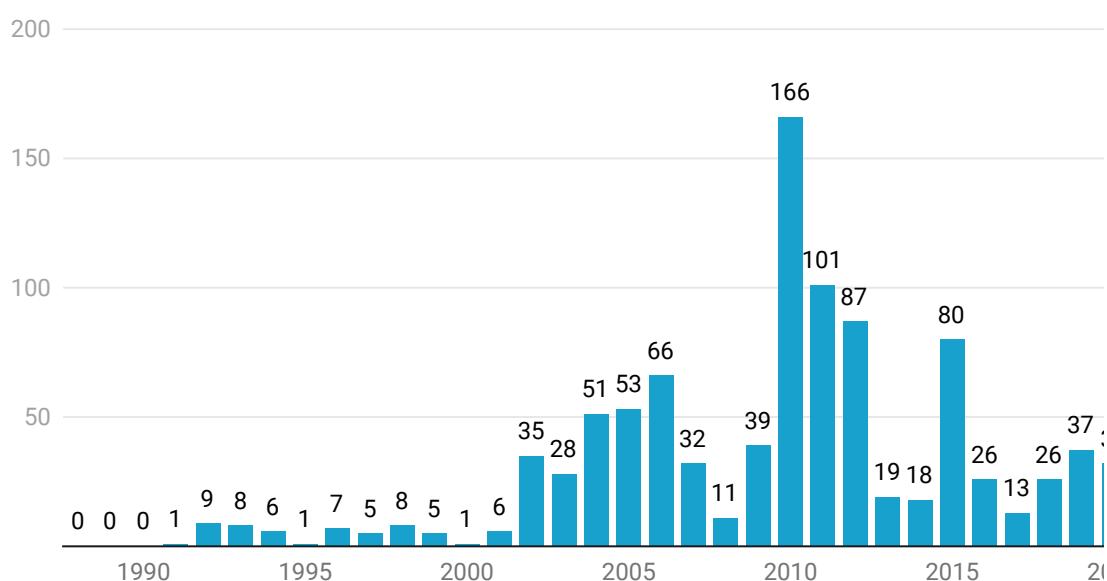
Cases started rising in Preston County in December, they said. One such outbreak was traced to a school, with 30 cases.

The state department has now reported 232 cases in 2025, 87 of which are still active, per Gailyn Markham, director of communications at WVDH. That's more cases than the state has seen since at least 1988, and, for a small county like Preston, contact tracing becomes more difficult to manage at these levels.

“The West Virginia Department of Health works closely with local health departments, healthcare providers, and community partners to quickly identify cases of pertussis, ensure appropriate treatment, and control measures to help reduce the spread of the disease,” said State Epidemiologist Shannon McBee said in a Jan. 2 email.

Whooping cough spikes in 2025

Reported pertussis cases* in West Virginia, 1988 to 2025†



*Confirmed and probable cases

†Diphtheria/tetanus/pertussis vaccine requirement for K-12 entry in effect prior to 1988. Beginning in 2012-13, West Virginia state law requires one dose of Tdap prior to 7th and 12th grade entry.

Chart: James Hilstion/Post-Gazette • Source: [West Virginia Department of Health](https://www.wvdhhs.gov/ehc/ehc-pertussis.aspx) • Created with [Datawrapper](https://datawrapper.de)

Pennsylvania had its own whooping cough outbreak last year, [with 2,889 cases](#) of the respiratory illness — six times more than it saw in 2023.

Allegheny County saw hundreds of those cases last year, representing a 4,700% increase from 2023, when the county saw seven cases. Preliminary county data, still yet to be reviewed, shows 65 cases this past year.

The country at large saw a similar trend in 2024, with six times more cases than in 2023.

Many of the whooping cough cases seen by Michael Petrosky, a pediatrician with Allegheny Health Network Pediatrics' outpatient clinic, during last year's outbreak were in unvaccinated or undervaccinated patients.

Immunity to pertussis wanes over time, so patients and pregnant women are advised to get vaccinated with the Tdap vaccine, a booster shot protecting against tetanus, diphteria and acellular pertussis, every 10 years, said McBee. Children aged 6 and under should get the Dtap vaccine, a full-dose shot against diphteria, tetanus and pertussis that builds children's immunity.

“We saw a lot of transmission was actually from parents to the child and not from the child to the parent,” said Joe Aracri, chair of pediatrics at AHN Pediatrics Institute, who also treated young patients during last year’s outbreak in Pennsylvania.

“As we saw the kids, we reminded the parents and everyone in the family to create a protective bubble around the baby,” he said. “Get your flu shot as well. These are things kids can’t protect themselves against.”

Costello’s daughter will turn 4 soon, so she similarly asked adults around her to get vaccinated or check their status to protect her.

“We know the younger someone is, the more likely they are to have severe disease with this,” she said.

Moore and Welch said that, so far, relatively few infants and older people have been hit with pertussis in Preston County. They think part of that can be associated with high vaccine rates.

“Typically milder infections are what we’re seeing,” said Welch.

They have also been grateful for tight-knit relationships and strong communication within the county of 34,000 people.

“We have learned that, in a smaller county, when you have the relationships with community and school district, it makes things that much easier, especially in a post-COVID world, where people are very leery about public health,” Moore said. “It was a smooth operation. It takes a

community, really, to do public health right.”

Doctors can give a pertussis patient antibiotics to treat the disease, but it's better to prevent infection entirely. So local health departments have ramped up their communication efforts around vaccines. Moore and Welch spent time speaking to parents and school officials about vaccines, and, this past summer, Allegheny County Health Department launched a vaccine hesitancy campaign on social media, in ads and on billboards.

Iulia Vann, ACHD director, called on doctors to make space for conversations about vaccines and to answer any questions parents may

have.

Araci thought West Virginia University was doing “a great job marketing vaccines” as its state’s pertussis cases tick upward.

It will remain crucial, too, to get health information from trusted sources, and not only from social media, said Costello. She directs parents to healthychildren.org.

Patients with questions should reach out to their primary care provider or their child’s pediatrician. ACHD’s Immunization Clinic, located at 425 First Ave Downtown, offers all routine vaccinations free of charge, as does the Pitt Vaccination & Health Connection Hub located in Nordenberg Hall in Oakland, with most insurances.

Anyone with pertussis symptoms lasting for more than two weeks should seek medical care promptly, especially if the symptoms are severe or someone in their home is at high risk for severe infection, such as a pregnant person or with a compromised immune system, said McBee.

“Antibiotics can treat pertussis and reduce contagiousness; especially if started early. Those with pertussis should isolate themselves from others until advised otherwise by a clinician,” she added.

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