

Articles

View “Pertussis—United States, 1997-2000 at:

<http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5104a1.htm>

View “Pertussis Deaths—United States, 2000”
at:

<http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5128a2.htm>

View “Pertussis in Texas” at:

<http://www.tdh.state.tx.us/phpep/dpn/issues/dpn61n16.pdf>

One Family's Battle with Pertussis

By Jan Pelosi

For the most part, the disease reports we routinely receive come from places we've never been to or are about people we've never known. On very rare occasions, however, a disease report is on someone we know or someone some how linked to a member of our extended family of Immunization Division employees. That happened earlier this year when a member of our staff mentioned in passing that a baby she knew—a newborn distantly related by marriage and through in-laws—had pertussis. Several weeks ago, that employee and I traveled to a small town southeast of Austin to talk to this family affected by pertussis. In some respects, I wish that I didn't have this story to tell, but I do. I hope that by putting a face to the statistics we report regularly, and personalizing these experiences, that others will understand the pain and suffering a single case of any vaccine-preventable disease can cause to a child and to their parents. Maybe some day, my wish will come true, but for now here's Aubree's story.

On January 10, 2001, Wade and Tina welcomed their beautiful baby girl into the world. This young mom and dad fell instantly in love with Aubree—their 6 lb,10 oz blue-eyed creation, and Aubree's big brother could not wait to help take care of his new baby sister. For three weeks, life was great. Aubree was happy, healthy, and the house was filled with joy. It did not take long, however, for things to go terribly wrong. Instead of a home filled with the laughter of small children and excitement of a new baby, the home soon became silent.

It was February 6, 2001—a Tuesday—when Aubree started coughing. A cold? Tina hoped that her five-week-old baby was not coming down with the same cough she had developed a week and a half earlier—a cough so severe that Tina would wake during the night, choking and gasping for breath. Tina's doctor had diagnosed her with a sinus infection and put her on antibiotics, but ten days later she was still coughing.



By Friday, Aubree's raspy little cough had become much more serious. Aubree too was now choking. Tina called her baby's doctor and was advised to give the infant an over-the-counter cough suppressant, which she did. But by the following Monday, when Aubree had not become any better, Tina rushed her to the local hospital—a small facility with less than 35 beds. The baby was examined and placed under an oxygen tent to help her breathe. Even though the doctors in the hospital admitted to having little experience with pertussis, they correctly made the diagnosis, prescribed erythromycin for Aubree, and released her the following day.

At first it seemed that Aubree was going to get better, but within only 24 hours she was coughing so severely that she was vomiting a mixture of her formula and a thick mucous. These choking episodes were, in fact, coming as often as every 15 minutes. Tina and Wade were scared. Because Aubree was a very sick little girl, her parents decided to take her to Texas Children's Hospital (TCH) in

Houston where pediatric infectious disease experts could treat her. The doctors at TCH had much more experience with pertussis. Even so, cystic fibrosis was also considered as a differential diagnosis during her admission. Once pertussis was confirmed, however, a doctor commented to Tina and Wade that Aubree "seemed to be over the worst of it." Tina looked on in horror wondering just how much worse this could get. Then another doctor told them that this cough might continue for 8 to 10 weeks. They had only been through week 1, and Aubree's parents could not fathom going through another 7 to 9 weeks of seeing their baby so ill, gasping and choking for every breath. Aubree did seem to be getting better, and after only five nights at TCH, she was released and sent home.

For the next two weeks, Tina watched her baby daughter closely and carefully. Aubree continued to cough severely and began to experience at least one cyanotic episode every day. Tina came to call these "Aubree's blue spells." Every couple of days, Tina would take her baby to a respiratory therapist who would use a suctioning procedure to remove the thick mucous and respiratory secretions that continued to settle in Aubree's airways and restrict her breathing.

On Monday, March 12, 2001, during a visit to the local hospital to have Aubree suctioned, the baby again experienced a severe paroxysm of coughing, went limp, and turned blue. The doctor immediately called TCH to have Aubree readmitted. Aubree had developed pneumonia. She was in the pediatric intensive care unit for 12 days and required intubation for 8 days. Intravenous catheters (IVs) were run through the veins in Aubree's feet and in her head. Her feet and legs became bruised and swollen from the needles and tubes. For the next two weeks, Tina never left her baby's side.

Aubree pulled through and has now fully recovered. Her doctors said she was remarkably strong. They called her a "miracle baby." Tina has yet to return to work full-time. She treasures every moment she has with her beautiful daughter, and cannot imagine placing her in a child-care facility just yet. Seven months after this ordeal began, the bills from the hospitals and doctors are still coming in. It will be a while before the total cost of Aubree's pertussis is known, but right now, the bills total in excess of \$100,000.

In recounting this very personal story, Tina had to fight back the tears as she remembered the IVs in Aubree's head, the frequent episodes in which her baby would cough so severely that she would lose consciousness and turn blue, and the fear she felt in the pit of her stomach when told that her child might lose her battle with a disease that could easily be prevented with a vaccine. Unfortunately though, neither Tina's nor Aubree's pertussis could have been prevented. There is no pertussis vaccine for adults, and Aubree was too young to have even started the DTaP (diphtheria, tetanus, and acellular pertussis) vaccine series.

At the time of this interview, Aubree was healthy and strong at 17 pounds and up-to-date on all her vaccines. Tina and Wade tell Aubree's story to relatives, friends, and acquaintances who are surprised that a disease they knew as "whooping cough" still occurs. Aubree's parents have a new appreciation for prompt medical treatment and accurate diagnoses, as well as vaccines. And neither can understand why any parent would not want to have their child vaccinated.

Visit other TDH webpages to read more about pertussis.

1. Dallas Area Pertussis Outbreak - <http://www.tdh.state.tx.us/immunize/uparch/sp00pert.htm>
2. Guidelines for the Control of Pertussis Outbreaks - <http://www.tdh.state.tx.us/immunize/uparch/w01guide.htm>
3. Pertussis Spreading Throughout Texas - <http://www.tdh.state.tx.us/immunize/uparch/f00pertx.htm>

4. Pertussis in Texas - <http://www.tdh.state.tx.us/phpep/dpn/issues/dpn61n16.pdf>



Battle to Control Pertussis Outbreak

By Laura Tabony

Midland Health and Senior Services (MHSS) and the Texas Department of Health Public Health Region 9 (PHR) field office in Midland had their hands full in May and June 2001 responding to an outbreak of pertussis. The index case who attended Midland Academy Charter School (MACS) was diagnosed on May 18, but had been coughing since April 23.

The initial investigation revealed 10 additional students in the 5th and 6th grades that were symptomatic for pertussis, and MHSS recommended prophylaxis for students in those classrooms. They sent letters to parents, gave a presentation at a parent meeting, and worked with the media to inform the community about pertussis. By May 31, the number of suspected cases had risen to 28. Symptomatic persons included students in 1st, 5th, and 6th grades, teachers, staff, family contacts, and relatives including two residents of Monahans, Texas in neighboring Ward County.

The PHR 9 field office in Midland, PHR 9 headquarters in El Paso, the local health authority (Dr. Humphreys), MHSS, and the Bureau of Immunization and Pharmacy Support (BIPS) in Austin participated in frequent conference calls to share updates, plan the outbreak response, and identify resources. As the outbreak picture enlarged, Ector County Health Department was invited to participate. (Ector County is adjacent to Midland County). Dr. Humphreys worked with MHSS to recommend control measures and keep area physicians informed about the outbreak. The MHSS closed their regular services and held special clinics on June 5th and 6th with extended hours to test and treat 23 school students, staff, and family members who had symptoms for pertussis. In addition, 238 contacts of symptomatic people were treated. On June 7th and 8th, MHSS clinics were extended, and PHR 9 sent staff to Monahans where they interviewed 19 symptomatic people and treated another 205 contacts.

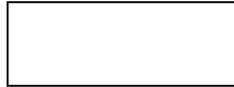
As MHSS identified symptomatic students in other classes, they recommended prophylaxis for all of the students at the school and for all close contacts of symptomatic persons. Another special clinic was held on June 15th, and MHSS focused on treating the remaining students at MACS before the end of their school year.

Case investigations of school-associated pertussis revealed a possible link to a Midland infant who died in February. A household contact of the infant did not complete the antibiotic given for post-exposure prophylaxis, became symptomatic in mid-March, and coughed for three weeks while attending the charter school. Four students began coughing the second week of April, and then six more students and a janitor began coughing 7 to 20 days later.

Altogether 114 persons in Midland have had symptoms of acute cough onset with or without other symptoms of pertussis. The MHSS has treated 650 close contacts of symptomatic persons including about half of the MACS student population. Most of these are associated with the school, but publicity about the outbreak resulted in the identification of other possible cases in Midland, Monahans (18), Wickett (5), and Odessa (5). Media releases about the Midland outbreak encouraged those with

symptoms or those needing prophylactic treatment to see their physician or contact the health department.

On June 13th, the MACS presented a thank you banner signed by all of the students and teachers to MHSS. The BIPS in Austin would also like to thank the staff at MHSS and PHR 9 in Midland for all of their hard work investigating and controlling this pertussis outbreak.



Dallas Area Pertussis Outbreak

By Laura Tabony

An outbreak of pertussis occurred in Dallas County in February through May of 2000. After a cluster of reports from a local hospital, the Dallas County Department of Health & Human Services faxed a pertussis alert to emergency rooms in Dallas County. Pertussis activity was also seen in four surrounding counties during the same period. During May, an alert was sent to local health departments, physicians, and hospitals in Dallas and surrounding counties.

Initial reports came primarily from hospitalized cases. Investigations revealed 17 confirmed cases in Dallas, Collin, and Tarrant counties (13, 1, and 3 respectively), and an additional 44 probable cases in Dallas, Denton, Kaufman, and Tarrant counties (36, 6, 1, and 1 respectively). The total number of confirmed and probable cases (61) is double that of any four month period in public health region 3 during the previous year. The median age of the 14 hospitalized patients was two months (range: one month to nine years). The median age of all confirmed and probable cases was one year (range: 17 days to 63 years).

Pertussis is a highly contagious upper respiratory illness with symptoms that can linger six to ten weeks. As the disease progresses, coughing often comes in spasms interspersed with a characteristic “whoop” on inspiration of air and may be followed by vomiting or cyanosis. Fever is absent or minimal. In infants less than six months of age, apnea is a common manifestation, and the whoop may be absent. Pertussis is most severe in young infants, who experience complications more frequently than adults. Secondary bacterial pneumonia is the cause of most pertussis-related deaths. Other complications include seizures, encephalopathy, otitis media, and conditions resulting from pressure effects of severe paroxysmal coughing, including pneumothorax, epistaxis, subdural hematomas, hernias, and rectal prolapse. The classic symptoms of pertussis may be inapparent especially in adolescents and adults whose only symptom may be a cough lasting 14 days or longer. A high index of suspicion is therefore necessary for the early diagnosis of pertussis. Although pertussis vaccine usually provides adequate protection against pertussis, immunity wanes over time, leaving most adolescents and adults susceptible. It is especially important to treat suspected cases that may be in contact with infants and young children. All household and other close contacts of suspected pertussis cases should be given erythromycin prophylaxis, even if they are up to date on pertussis vaccination. For children under seven years of age, acceleration of the pertussis vaccination schedule is also recommended.

Pertussis is clinically defined as a cough illness lasting at least two weeks with either paroxysmal coughing, inspiratory whoop, or post-tussive vomiting without other apparent cause as reported by a health professional. Because it may not be possible to isolate pertussis late in the course of illness or after antibiotics have been initiated, diagnosis may be based on symptoms that meet case definition. The laboratory criteria for confirmation are isolation of *Bordetella pertussis* from a clinical specimen (nasopharyngeal swab or aspirate) or a positive polymerase chain reaction (PCR) for *B. pertussis*. Reagan-Lowe transport media and culture confirmation is available from the Texas Department of Health Laboratory.

Evidence suggests that adults are a significant source of pertussis transmission and may be the main reservoir. Due to the reactivity of whole-cell pertussis vaccines in adults, pertussis vaccine has not been licensed in the United States for use in persons seven years of age or older. As antibody levels wane, older children and adults

may become infected with pertussis even if they were fully immunized as children. Because the illness is non-specific in adults, pertussis is often not considered as a diagnosis. Culture confirmation may not be possible if pertussis is not suspected until late in the illness or until after antibiotics have been utilized. Three studies of adults with chronic coughs found that 21% to 26% of these patients had evidence of pertussis infection.



Pertussis Spreading Throughout Texas

By Jan Pelosi

The outbreak of pertussis in Dallas County — which we reported in the last edition* of The Upshot — continues, increases have also been noted in other parts of the state. Through December 18, 2000, 109 cases have been documented in the Dallas area, more than four times the number of cases reported in 1999. Pertussis activity in both Bexar and Harris counties is also three to four times higher than that which occurred last year.

Physicians and other medical providers throughout Texas should suspect pertussis in any patient with a prolonged cough. Pertussis is not a disease that occurs just among children. Quite commonly children and young infants acquire the infection from their parents, grandparents, or other older adults. Pertussis is highly contagious with symptoms that can linger six to ten weeks. The disease is most severe in young infants, who experience complications more frequently than adults. A high index of suspicion is, therefore, necessary for early diagnosis.

*see “Dallas Area Pertussis Outbreak” By Laura Tabony
<http://www.tdh.state.tx.us/immunize/uparch/sp00pert.htm>

