

Texas Preventable Disease

NEWS

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HAEMOPHILUS INFLUENZAE INFECTIONS

Haemophilus influenzae type b (Hib) remains the most common cause of bacterial meningitis in children under 5 years of age in the United States. The organism can also cause other serious invasive illnesses. The most common systemic infections caused by *H. influenzae* are septicemia, pneumonia, epiglottitis, cellulitis, and septic arthritis; osteomyelitis and pericarditis are rare manifestations of *H. influenzae* infection. A vaccine to prevent systemic Hib infections was licensed for use in the US in April 1985, and the Advisory Committee on Immunization Practices (ACIP) now recommends that all children be vaccinated at 24 months of age. Only through continued reporting and surveillance of *H. influenzae* infections in Texas can the impact of the vaccine be studied.

In September 1986, the rules and regulations for the control of communicable diseases were amended making all systemic *H. influenzae* infections reportable in Texas. Prior to this Board of Health action, only meningitis due to *H. influenzae* was required to be reported to the Texas Department of Health.

In 1986, a total of 647 *H. influenzae* infections was reported to the Bureau of Epidemiology, and meningitis was the most frequently reported infection (Table 1). Children under the age of 5 years accounted for 94% (461/493) of the *H. influenzae* meningitis cases and 81% of all *H. influenzae* infections. Infants under the age of 1 year experienced the highest incidence rate of *H. influenzae* disease in Texas (111 cases per 100,000 population); in children 1 to 4 years of age, this rate decreased to 20 cases per 100,000.

Sixty-seven percent (23/34) of the septicemia cases also occurred among children under 5 years of age. Almost half (47%) of the cellulitis cases were reported in children between 1 and 4 years of age; five cases were infants between 6 and 10 months of age. Nine of the 11 cases (82%) of epiglottitis were reported in children in the 1- to 4-year age group. Six of the seven cases of septic arthritis reported in Texas in 1986 were under the age of 3 years; one case was reported in a 50-year-old female. *H. influenzae* pneumonia was more common among older adults as 70% (60/87) of the cases were over 55 years of age.

Secondary disease is illness which occurs from 1 to 60 days after contact with a child who has an *H. influenzae* infection. Because these infections are so common in young children, the risk of secondary disease among children exposed to a primary case in a day-care center continues to be a matter of concern to health professionals. However, less than 5% of all invasive *H. influenzae* disease is a result of day-care exposure. Secondary attack rates for household contacts have been estimated to be higher than that for day-care center contacts, and in Texas, secondary disease has been reported more frequently among household contacts rather than among children attending day-care centers.

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In Texas, 104 (35%) of the 295 infants and children on whom this information was reported were enrolled in day-care centers at the time of onset. These 104 children were contacts to 1,973 other children in their respective day-care centers of whom 1,514 received prophylaxis. Only one episode of secondary disease in a day-care center was reported to the Bureau of Epidemiology. This involved a 9-month-old infant diagnosed with septic arthritis; *H. influenzae* was isolated in joint fluid taken from his left elbow. Fifty-one days later, a 19-month-old child attending the same facility was diagnosed as having *H. influenzae* meningitis and septicemia. After this second case occurred, classroom contacts to these children received rifampin prophylaxis.

Two episodes of secondary disease among household contacts were reported to the Bureau of Epidemiology during 1986. These included a 2-month-old with meningitis whose 16-month-old brother developed pneumonia ten days later and infant cousins who were diagnosed with meningitis within seven days of each other. Two additional episodes of possible secondary disease among household contacts included sisters, 20 months and 2 months of age, who developed meningitis on consecutive days. An 11-month-old infant died following a sudden onset of meningitis; his 2-year-old sister became ill the following day with fever, vomiting, otitis media, and a diagnosis of possible sepsis.

There were several other instances in which siblings or other household members of diagnosed *H. influenzae* cases were reported to have "similar" illnesses. However, complete information was not available to determine whether or not these cases were in fact *H. influenzae* infections.

The ACIP currently recommends that in any household in which a case of invasive Hib disease has occurred and in which another child under 4 years of age resides, all members of the household, including adults, and the index case should receive rifampin prophylaxis. Prophylaxis should be strongly considered for all staff and children -- regardless of age -- in the day-care classroom in which a case of systemic Hib disease has occurred and in which one or more children under 2 years of age have been exposed.

Resistance of *H. influenzae* to ampicillin or chloramphenicol is of growing concern to medical practitioners. Ampicillin-resistant isolates of *H. influenzae* were first recognized in 1974 and since then, have become increasingly prevalent. In 1976, a national survey of pediatric medical facilities found the prevalence of ampicillin-resistant *H. influenzae* isolates from blood or cerebrospinal fluid cultures to be 4.5%. By 1981, ampicillin-resistance rates of 17% were reported. Texas data (1982-1986) on this trend are available from the Bureau of Epidemiology's surveillance of reported *H. influenzae* infections and are presented in Figure 1.

A significant increase in the percentage of ampicillin-resistant organisms was noted in 1986. Results of antibiotic sensitivity studies indicated that 37% of the 224 organisms tested in 1986 were resistant to ampicillin. Three of the 179 isolates tested were resistant to chloramphenicol, and three of the 33 isolates tested were resistant to sulfadiazine. Only 45 organisms were tested for sensitivity to rifampin; none were resistant, but three displayed intermediate sensitivity.

Twenty-three deaths due to *H. influenzae* infections were reported in 1986 resulting in a case-fatality ratio of 3.6%. This ratio has steadily declined since the surveillance of *H. influenzae* in Texas began, most likely reflecting improved reporting of non-fatal cases (Figure 2).

The overwhelming majority (70%) of deaths occurred among infants under 1 year of age; this age group experienced a case-fatality ratio of 5.4% (16/296). Six deaths were reported among children 1 to 4 years of age for a case-fatality ratio of 2.6%. The remaining death was a 76-year-old man who died from pneumonia.

Table 1.
Reported cases of *H. influenzae* infections,
Texas, 1986

Type of infection	# Cases	Percent of Total
Meningitis	493	76.2 %
Pneumonia	87	13.4
Septicemia	34	5.3
Cellulitis	15	2.3
Epiglottitis	11	1.7
Septic Arthritis	7	1.1
Total Infections	647	100.0 %

Figure 1.
Percentage of ampicillin-resistant
H. influenzae organisms, Texas,
1982-1986

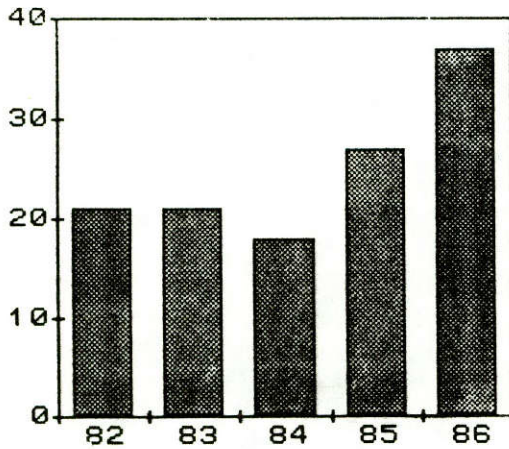
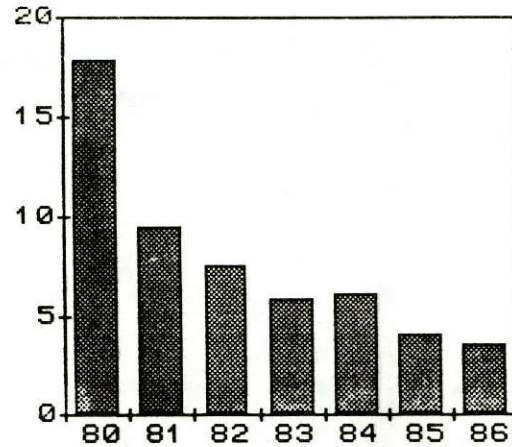


Figure 2.
Case-fatality ratios of *H. influenzae*
meningitis, Texas 1980-1986



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FIRST CHOLERA CASE IDENTIFIED IN 1987 -- LOUISIANA

The first case of cholera acquired on the Gulf Coast in 1987 has been confirmed. A 72-year-old woman living in Abbeville, Louisiana developed diarrhea on June 10, was hospitalized for rehydration, and recovered. Toxigenic *Vibrio cholerae* 01, Inaba, biotype El Tor, was isolated from her stool. The woman ate local crabs two days before onset of her illness. The crabs were caught by a family member in southeast Louisiana and were inadequately cooked. To begin active surveillance, Moore swabs will be placed in four sewerage systems (New Orleans, Abbeville, Lafayette, and Lake Charles) weekly during the rest of the summer.

Sporadic cases of cholera on the Gulf Coast have occurred as early as May, and it is not known whether this confirmed case means there will be more cholera than usual this summer and fall. Nonetheless, physicians and local public health authorities should be aware that cholera season has now begun; cholera should be suspected in patients with severe watery diarrhea, and appropriate stool cultures obtained on TCBS agar.

ERROR IN RED BOOK

The following is the text of a memo sent to all State Health Officers on April 22, 1987, by Jean D. Lockhart, MD, Director: Maternal, Child and Adolescent Health, American Academy of Pediatrics.

"We have just discovered an error in Immunization Table 2, on page 9 of the 1986 RED BOOK, which may have led to a misunderstanding about giving OPV beyond the seventh birthday. The error is a transposition of a footnote, footnote 7, which should have been placed after the DTP, not in the left hand column. As a result of the error, we have learned that there is reluctance to give OPV past the seventh birthday.

Please note that **OPV should be given to children and youth under 18 years old who are partially immunized, to complete the required series of three doses.** (See pp. 286, 287 of the 1986 RED BOOK.)"

* * *

URBAN YELLOW FEVER BULLETIN

The yellow fever epidemic in Nigeria has continued to spread and now includes densely populated areas. Although not "officially" reported, there is evidence that the epidemic is now of the urban type, involving the household mosquito, *Aedes aegypti*. Therefore, CDC recommends yellow fever vaccination for all travelers over 6 months of age regardless of their destination within Nigeria.

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