

Connecticut Epidemiologist



STATE OF CONNECTICUT DEPARTMENT OF HEALTH SERVICES

Douglas S. Lloyd, M.D., M.P.H., Commissioner

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1982 IN REVIEW

The Epidemiology Section collected and collated 60,754 reports of disease as part of their ongoing disease surveillance program. Highlights are presented.

Vaccine Preventable Diseases

Active surveillance of rash illnesses was initiated in 1981 as part of the national measles elimination campaign. In 1982, 94 rash illnesses were identified and investigated. Six (6.4%) of these cases were confirmed as measles. Cases ranged in age from 4 to 34 years. Two cases had a history of previous vaccination or disease and four had no history of either. Serological confirmation was available for four cases. The remaining two were classified on the basis of clinical criteria (≥ 3 days of rash, fever $\geq 101^\circ\text{F}$, and one or more constitutional symptoms of cough, corzya, or conjunctivitis). Three individuals were exposed to measles in foreign countries (England, Germany). All three indigenous cases occurred in one town suggesting a source/spread connection. In the two instances where measles cases occurred in a school, approximately 125 susceptible students were identified and excluded from school until proof of immunization was provided.

Reported morbidity for the other vaccine preventable diseases indicated no cases of diphtheria, tetanus, or polio in the state. However, 29 cases of mumps, 6 cases of rubella and 5 cases of pertussis were identified.

Refugee Program

The Refugee Health Program recorded 570 officially arriving Southeast Asian Refugees in 1982 as indicated by American Council of Voluntary Agency (ACVA) forms received at the Department of Health Services. These individuals were: 346 Vietnamese (60.7%), 49 Laotian (8.6%), and 175 Campuchean (Cambodian) (30.7%). Refugees often migrate to another state after officially arriving in one state.

Twenty refugees moved out of state before receiving a health assessment and were referred to other state health programs. Data on 194 (34%) refugees who were treated or referred for follow-up is shown in Table 1.

Table 1. Health Conditions Identified in Southeast Asian Refugees, 1982

Tuberculosis	90 (46%)
Positive VDRL	6 (3%)
Parasites	39 (19%)
Dental	25 (13%)

In addition to the Southeast Asian registry, the program began a registry of officially arriving non-Southeast Asian refugees on October 1, 1982. From October 1, through December 31, 1982 there were 44 official arrivals. They are listed by country of

birth: Poland 27, Romania 8, Hungary 5, Ethiopia 3, Austria 1.

Sexually Transmitted Diseases

Connecticut's health providers reported diagnosing and treating less gonorrhea, but more syphilis in 1982. There were 8,789 cases of gonorrhea reported during the year, 8% less than reported in 1981. Cases of lesion syphilis, however, increased by 4.7% to 153 cases, while total syphilis (all stages) rose by 7.3% to 573 cases, which included one case of congenital syphilis (Table 2). The incidence rate for all types of syphilis was 18.3 cases/100,000 population.

Table 2: Reported Cases of Syphilis by Category Connecticut, 1981-1982

Category	1981 (%)	1982 (%)
Primary and Secondary	146 (27.0)	153 (26.7)
Early Latent	100 (18.5)	130 (22.7)
Late and Late Latent	293 (54.1)	289 (50.4)
Congenital	2 (0.4)	1 (0.2)
TOTAL	541 (100)	573 (100)

Connecticut's STD Control Program continued to work in cooperation with health providers and medical laboratories in the following areas:

1. Gonorrhea Screening Program: Over 105,000 females were tested for gonorrhea. Three thousand two hundred fifty-four (3,254) cases were identified and treated.
2. Penicillinase-producing Neisseria gonorrhoeae (PPNG) Surveillance: Testing of N. gonorrhoeae isolates for B-lactamase production identified 28 which were classified as PPNG cases. Only 10 cases were reported in 1981.
3. Pelvic Inflammatory Disease Screening Program (PIDSCRAP): This program identified and managed 246 cases of gonococcal pelvic inflammatory disease. This represents a 19% decrease from 1981.

The STD Control Program is also involved in a variety of activities to provide education and awareness programs to the professional and lay community. These included providing 11 in-service training sessions for 406 educational/medical professionals, producing and publishing a teacher's STD booklet for educators, co-organizing a Herpes symposium to be held March, 1983.

Tuberculosis

The Pulmonary Diseases Program verified 154 cases of newly diagnosed cases of tuberculosis in 1982, six (3.9%) of which were reactivation of disease. Pulmonary tuberculosis accounted for 75% of all cases. The incidence rate was 4.9 cases/100,000 population. The department continued to

follow and provide drug therapy at no cost for 246 previously diagnosed cases. This represents a prevalence rate of 12.8 cases/100,000.

Data from the six major cities (Bridgeport, Danbury, Hartford, New Haven, Stamford and Waterbury) have been analyzed. Cases from these cities account for 50% of cases reported in 1982. Age-specific attack rates for these cities (Table 3) suggest that middle-aged and elderly individuals developed tuberculosis more often than young adults and children. Refugees accounted for a smaller proportion of cases under treatment (<10%) than in the past years. Because tuberculosis in refugees is either diagnosed or rendered non-infectious with chemotherapy prior to entry into the United States, these cases are not included as incident cases in Connecticut.

Table 3. Age-specific Incidence Rates for Tuberculosis In Six Cities in Connecticut, 1982

AGE GROUP	NUMBER OF CASES	RATE*
<1-4	0	0
5-14	0	0
15-24	8	6.0
25-34	11	10.0
35-44	12	17.8
45-54	16	25.2
55-64	11	16.1
65-74	8	15.8
75-84	6	22.5
> 85	5	57.2
TOTAL	77	4.9

*Incidence/100,000 population

Foodborne Outbreaks

Twenty-three incidents involving 381 individuals were classified as foodborne outbreaks and reported to the Centers for Disease Control. Confirmed or suspected as the etiologic agents were *Clostridium perfringens* (6), scombroid poisoning (5), *Salmonella* (4), *Staphylococcus aureus* (5), *Brucella* (1), hepatitis A (1) and Norwalk agent (1).

Food-related outbreaks occurred in restaurants or cafeterias (14), public schools (3), health care facilities (3), private homes (2), and a boy scout camp (1), (Table 4). Improper storage or holding temperatures were the most common finding contributing to the outbreaks. Poor personal hygiene or illness in food handlers was also frequently associated with illness.

A typical investigation is summarized.

On February 13, 1982, a luncheon for members of the state legislature was sponsored by the University of Connecticut Alumni Association. The luncheon was held at a Hartford hotel. Of the approximately 180 guests who attended the luncheon, 81 (45%) became ill with a gastrointestinal illness characterized by nausea, vomiting, cramps, diarrhea, chills, arthralgia, myalgia, and headache. The median incubation period was 29.5 hours, with a range of 5 to 59 hours. The median duration of illness was 48 hours, with a range of 24 hours to 10 days,

Among the 21 hotel staff members that served the luncheon, 8 (38%) also became ill. In addition five staff members, four of whom were members of the same family, were identified as being ill prior to the

luncheon with symptoms compatible with the illness experienced by attendees. These individuals were responsible for most of the food preparation. Their histories suggested person to person transmission among family members.

Eleven secondary cases were reported in families of attendees and hotel staff. Incubation periods between primary and secondary cases ranged from 12 to 96 hours, with a median of about 36 hours.

A single food sample of pre-cooked turkey, the only original food sample available, was negative for bacterial pathogens. Stool samples obtained from ill persons and food handlers were also negative for enteric pathogens. Acute and convalescent sera have been submitted to the Centers for Disease Control for serologic testing for antibodies to Norwalk and Norwalk-like agents. Results are still pending. Although no single food item was shown to have a significant association with the development of illness, food was the most likely vehicle of transmission.

Food handlers ill prior to February 13 were directly involved in the preparation of food platters for the luncheon. This may have resulted in contamination of multiple food items. Following the luncheon, cases appeared in both guests and staff who consumed the food. Secondary cases also occurred in the families of both groups. The symptom complex and negative laboratory tests are consistent with illness due to Norwalk agent or a related virus. Norwalk-like agents account for an unspecified portion of acute gastroenteritis.

Meningitis - Encephalitis Activity

Two hundred sixty-two (262) cases of meningitis and thirty-two (32) cases of viral encephalitis were reported in 1982. Bacterial meningitis accounted for 178 cases, the majority of which were caused by *N. meningitidis*, *H. influenzae* and *S. pneumoniae*. Reported bacterial meningitis activity in Connecticut from 1978 through 1982 is presented in Table 5. Meningococcal and *Hemophilus meningitis* accounted for over 60% of cases. Age-specific data and case fatality rates are presented for various etiologic agents in Table 6.

The Centers for Disease Control has reported an increase in ampicillin resistance from 18% in 1977 to 24% in 1981. Marked differences in the resistance rates were noted between states. Case-fatality rates were not significantly higher for cases with resistant *H. influenzae* isolates.

No etiologic agent was identified for 72% of viral meningitis and encephalitis cases reported to the department. Herpes virus, coxsackievirus, echovirus, varicella virus, and mumps virus were most frequently reported among known causes (Table 7). Herpes was responsible for 25% of all cases of viral encephalitis. Virologic studies to identify an etiologic agent have not been attempted in many cases. However, failure to isolate a virus from properly collected specimens is usually not significant. In many viral illnesses, the amount of viruses shed is variable and even when cultures are correctly collected, delays in processing can reduce the possibility of virus isolation. The incidence of reported viral encephalitis and meningitis was 3.7/100,000 population.

Table 4: Foodborne Outbreaks, Connecticut 1982 By Location and Etiologic Agent

#	<i>C. perfringens</i>	Scombroid	<i>Salmonella</i>	<i>S. aureus</i>	Other	TOTAL
Restaurants	5	4	2	2	1*	14
Health Care	0	0	2	1	0	3
Schools	1	0	0	2	0	3
Private Homes	0	1	0	0	1**	2
Camp	0	0	0	0	1***	1
TOTAL	6	5	4	5	3	23

* Norwalk Agent, ** *Brucella melitensis*, ***Hepatitis A

Table 5: Total Reported Cases of Bacterial Meningitis in Connecticut 1978-1982 by Etiology

Reporting Year	<i>N. meningitidis</i>	<i>H. influenzae</i>	Other	Total %
1978	48 (29.8%)	73 (45.3%)	40 (24.8%)	161 (100%)
1979	54 (32.5%)	51 (30.7%)	61 (36.7%)	166 (100%)
1980	60 (34.9%)	68 (39.5%)	44 (25.6%)	172 (100%)
1981	71 (35.1%)	68 (33.7%)	63 (31.2%)	202 (100%)
1982	58 (32.6%)	55 (30.9%)	65 (36.5%)	178 (100%)

(% of total for year)

Table 6: Reported Cases Bacterial Meningitis, Connecticut 1982 By Age, Etiologic Agent and Case Fatality Rate

Etiology Disease	Age Group							TOTAL	Case Fatality Rate
	1	1-5	6-15	16-30	31-60	60	Unknown		
<i>N. meningitidis</i>	9	16	4	12	11	4	2	58	17.2%
<i>H. influenzae</i>	21	31	0	1	1	1	0	55	0.0%**
<i>S. pneumoniae</i>	4	2	3	2	5	10	0	26	7.7%
Other*	11	4	0	1	6	10	0	32	12.5%
Etiology Unknown	1	1	0	2	2	1	0	7	0.0%
TOTAL	46	54	7	18	25	26	2	178	12.1%

*Group B Streptococcus - 7; *Listeria monocytogenes* - 7; Partially treated - 5; *S. aureus* - 4; *E. coli* - 2; *Klebsiella pneumoniae* - 1; *Streptococcus sanguis* - 1; *Enterobacter aerogenes* - 1; *Haemophilus parainfluenzae* - 1; *Proteus mirabilis* - 1; *Cryptococcus* - 1; *Streptococcus viridans* and Group D streptococci - 1.

**Includes 6 unknown outcomes

Table 7: Reported Cases Aseptic Meningitis and Viral Encephalitis Connecticut 1982 by Etiologic Agent

Etiology	Meningitis	Encephalitis
Coxsackievirus	5 (Type B2, B4)	1 (Type B5)
Echovirus	7 (Types 5,6,11,25,30,31)	2 (Type 9, 30)
Herpes	5	8
Mumps	0	2
Varicella	0	2
Unknown	67	17
TOTAL	84	32

Viral Hepatitis

Viral hepatitis can be caused by any of several recognized agents: hepatitis A virus, hepatitis B virus, hepatitis Non A, Non B (NANB), Cytomegalovirus and Epstein-Barr virus. Nationally, surveillance is conducted to determine the number of incident cases due to hepatitis A, B and NANB. Cases which do not meet the criteria for these categories are classified as hepatitis unspecified.

In 1982, 526 cases (77%) of hepatitis reported in Connecticut were classified as hepatitis B, 89 (13%) as hepatitis A, 25 (3.7%) as hepatitis NANB and 40 (5.9%) as hepatitis unspecified. Hepatitis A again represented a smaller proportion of reported cases than in the previous year.

It has been estimated that cases reported through passive surveillance represent about 10% of true incidence. Therefore, we can estimate that 7,000 cases of hepatitis may actually have occurred in Connecticut in 1982.

Age-specific incidence rates indicate that the risk of disease is greatest for persons 15-29 years of age for both hepatitis A and B. Morbidity due to hepatitis B is gradually increasing for persons 30-44 years of age as well. Incidence rates for hepatitis A are continuing to decline, in contrast to the apparent increase in incidence of hepatitis B (Table 8). This apparent shift in disease incidence may partially reflect an artifact of reporting. Surveillance for hepatitis A is almost completely dependent upon physician reporting. Hospital based

reports from Infection Control Practitioners and laboratory reports of significant findings frequently supplement physician reporting in the case of hepatitis B. The apparent lack of seasonal variations in incidence, as might be expected with hepatitis A, may also be due to underreporting.

Table 8: Incidence* of Hepatitis in Connecticut 1979-1982, by Type

Type	1979	1980	1981	1982
A	6.0	5.8	6.1	2.9
B	6.9	12.3	16.6	16.8
NANB	--	--	--	0.8
Unspecified	1.4	2.1	2.3	1.3

*Incidence/100,000 population

In 1982, 20% of all reported cases of hepatitis A were associated with a foodborne outbreak which occurred at a Boy Scout Camp in northwestern Connecticut. An International Week held in July brought scouts to Connecticut from all over the United States and several foreign countries. Because of the increased census at the camp (600+ attendees and staff), food was distributed from the main kitchen and meals were prepared by the scouts at their respective campsites. This arrangement increased the potential for a breakdown in proper food handling techniques. In addition, a field food festival was held for which scouts prepared dishes typical of the various ethnic groups and countries.

In August, a concerned physician reported two cases of hepatitis A in two boys who had attended

REPORTED MORBIDITY - JANUARY, 1983

	AMEBIASIS	BOTULISM	BRUCELLOSIS	ENCEPHALITIS (ALL TYPES)	Primary	Post	FOODBORNE OUTBREAKS	GONORRHEA	HEPATITIS A	HEPATITIS B	HEPATITIS NON A NON B	HEPATITIS UNSPECIFIED	LEGIONELLOSIS	LEPROSY	MALARIA	MEASLES	MENINGITIS (All Types)	Aseptic	Hemophilus influenzae	Meningococcal	Other	MUMPS	PERTUSSIS	PSITTACOSIS	RABIES IN ANIMALS	REYES SYNDROME	ROCKY MT. SPOTTED FEVER	RUBELLA	SALMONELLA	SHIGELLA	STYPHILIS	TUBERCULOSIS (ALL TYPES)	Pulmonary	Other	TYPHOID FEVER
TOTAL FOR JAN.	0	0	0	0	0	0	0	848	2	10	1	1	0	0	0	0	17	2	7	7	1	4	0	0	0	0	0	0	34	15	21	9	7	2	0
CUMULATIVE 1983	0	0	0	0	0	0	0	848	2	10	1	1	0	0	0	0	17	2	7	7	1	4	0	0	0	0	0	34	15	21	9	7	2	0	
CUMULATIVE 1982	0	0	0	5	4	1	2	665	7	61	3	3	0	0	1	0	18	6	4	4	4	2	2	0	0	0	0	40	18	8	3	1	2	0	

the Boy Scout Camp in July. Investigation of the outbreak identified 28 additional cases. Three of these were second generation cases associated with a scout who had attended International Week and who subsequently worked in the kitchen as a salad boy for the remainder of the camp season. Over 800 individuals were potentially exposed between July 11 and August 15.

A questionnaire to identify additional cases and a letter containing information on hepatitis A and recommendations for case prevention by using immune globulin (IG) were sent to the parents of scouts. This intervention may have had some impact on preventing further cases; no tertiary cases were identified.

Salmonellosis

Salmonella surveillance relies upon laboratory reports of isolation of Salmonellae from clinical specimens. All laboratories isolating Salmonella and/or Shigella from clinical specimens are required to submit them to the State Laboratory for confirmation and serotyping. Serotyping provides epidemiologic data which is used to monitor activity and recognize outbreaks. In 1982, 908 cases of Salmonella were recorded through passive surveillance for an incidence rate of 29 cases/100,000

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population. This is considerably higher than the national annual incidence of 10-12/100,000.

The majority of cases continue to occur in children below the age of four years (> 110/100,000). Within this age group, 50% of all cases are reported in children less than one year old. Approximately 10% of reported cases are family members/household contacts discovered as a result of follow-up of an initial index case. This suggests that Salmonella can be easily transmitted within households via common foods, an infected food handler or toddler.

Although approximately 1,600 different serotypes have been identified, relatively few account for the majority of human isolates (Table 9).

Table 9: Salmonella Isolates Connecticut 1979-1982
Most Prevalent Serotypes

#	Serotype	Percent of Total
1.	Typhimurium	35 - 40
2.	Enteritidis	10 - 20
3.	Heidelberg	4 - 10
4.	St. Paul	1.5 - 5
5.	Agona	1.5 - 5
6.	Infantis	2 - 4
7.	Newport	1.5 - 2.5
8.	Blockley	1.0 - 2.5
9.	Oranienburg	1.5
10.	Other	10 - 20

Vernon D. Loverde, M.D., M.P.H., Chief

Toby Kircher, M.D., E.I.S. Officer

Patricia J. Checko, M.P.H., Editor

Leonard Gilmartin, Coordinator, Public Health Education Section

EPIDEMIOLOGY SECTION
PREVENTABLE DISEASES DIVISION
State of Connecticut Department of Health Services
79 Elm Street
Hartford, CT 06106

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