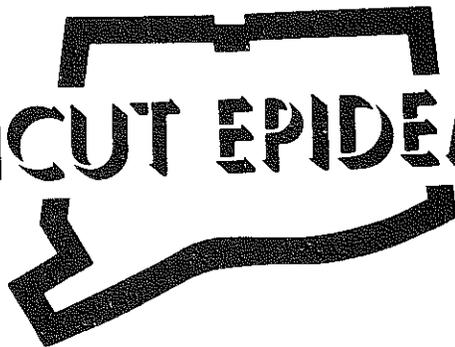


CONNECTICUT EPIDEMIOLOGIST



STATE OF CONNECTICUT DEPARTMENT OF HEALTH SERVICES
 FREDERICK G. ADAMS, D.D.S., M.P.H., Commissioner

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AIDS UPDATE

AIDS-related counseling and HIV antibody testing is currently available on an anonymous and confidential basis at eleven sites in Connecticut; ten sites are at local health departments and one site is based at a community organization. Between March, 1986 and June, 1987, a total of 2219 persons received HIV counseling and testing services through these sites. The seroprevalence of HIV antibody by location of testing site is given in Table 1. Overall, 8% (115/1470) of men have tested positive for HIV antibody; 5% (35/749) of women. The seroprevalence by race/ethnicity was 5% (99/1910) for whites, 20% (31/157) for blacks, 16% (14/90) for Hispanics, and 16% (7/43) for others. The seroprevalence by transmission category was 10% (70/699) for homosexual/bisexual men; 18% (56/306) for intravenous drug users; 21% (5/24) for homosexual/bisexual intravenous drug using men; 2% (18/938) for heterosexual contacts; and 0% (0/130) for blood transfusion recipients.

Although persons coming to counseling and testing sites (CTS) are self-selected, the seroprevalence of HIV antibody at these sites is comparable with data from other seroprevalence studies in Connecticut. Persons entering methadone

maintenance clinics and intravenous drug abusers seen at the CTSs have similar rates of HIV antibody seropositivity. Black and Hispanic men and women have 5-10 times the seroprevalence as their age, sex and risk group white counterparts.

Additional counseling and testing sites are planned for New Britain, Middletown, and Torrington.

Table 1. HIV antibody seroprevalence in persons tested at ten counseling and testing sites, by site location, March, 1986 - June, 1987.

Location	No. Tested	% HIV Antibody Positive
Bridgeport	168	6.5
Danbury	154	2.6
Greenwich	81	3.7
Hartford*	405	6.9
New Haven	608	9.9
New London**		
Norwalk	117	6.8
Norwich	165	3.0
Stamford	209	6.7
Waterbury	252	5.2

*Two sites in Hartford
 **Opened after 6/30/87



GIARDIASIS IN CONNECTICUT

Giardia lamblia is Connecticut's second most commonly reported enteric pathogen, after Salmonella. Nearly 500 cases were reported for 1987 as of November 1. Although there are infrequent reports of acquisition through contaminated food, the organism is generally acquired from fecally contaminated water or through person-to-person spread. Waterborne outbreaks are usually traced to consumption of unfiltered surface water which has been contaminated with human or animal feces, as in the large Giardia outbreak in Pittsfield, Mass. in 1986. Person-to-person spread is commonly associated with children attending day-care centers or institutionalized persons. In these situations, asymptomatic carriers are probably more important in transmission than those with diarrhea.

Persons with symptomatic giardiasis usually experience diarrhea, abdominal cramps, and flatulence, in the absence of vomiting or fever. Symptoms may be intermittent and/or of long duration. The diagnosis of giardiasis is confirmed by the finding of Giardia cysts of microscopic examination of stool samples. Because of the frequency of false negative exams, multiple stool samples may need to be sent to establish or rule out this diagnosis.

All laboratories in Connecticut are required to report findings of Giardia on stool examinations. Physicians are also encouraged to report cases, especially when they may be associated with contaminated water, a day care center or another type of institution.



WATERBORNE OUTBREAK OF GIARDIASIS: DANBURY

Background: On August 13, 1987, the Danbury Health Department received a call from a resident of the Cedar Heights

neighborhood who complained of diarrhea of long duration. The resident felt that her symptoms were caused by drinking the public water. She noted that neighbors had also developed diarrhea since late July. The residents felt that their symptoms were related to the addition of a new well in the water-supply system during the summer. A water sample taken from the resident's faucet on August 14 showed fecal coliforms.

On August 20, the Danbury Health Department requested the help of the Epidemiology Section, Department of Health Services, in evaluating the problem. The investigation that followed consisted of a telephone survey of the neighborhood, attempts to collect stool specimens on all ill persons, and evaluation of the public water system.

Epidemiologic Studies: A survey questionnaire was developed and in the evening of August 20 and the morning of August 21, a survey was made of homes in the Cedar Heights neighborhood. Questions were asked of an adult member of the household regarding water consumption and symptoms of all members of the household during the previous five weeks.

Ninety-one of the 180 Cedar Heights residences were reached, which included 44 of the 118 homes on the public water supply, and 47 homes which received water from private wells.

Twenty-nine of 147 (19.7%) persons who lived in houses with public water had had diarrhea since July 26. After diarrhea, the symptoms most commonly reported were abdominal cramps (90%), flatulence (59%) and foul-smelling stools (59%). Vomiting and fever were experienced by less than 15% of ill persons. Dates of onset were distributed evenly among four weeks prior to the survey, and the median duration of symptoms was three days, with a range of 1 to 23 days.

Nine of the 136 (6.6%) surveyed persons on private wells reported diarrhea since July 26. The other symptoms most

commonly reported were abdominal cramps (88%), anorexia (88%), and nausea (55%). Fever was reported by four of nine (44%) of these ill persons.

Using a case definition of diarrhea since July 26, persons on the public water supply were significantly more likely to become ill than those on private wells (RR 3.0, 95% C.I. 1.5-5.8). Attack rates by street of residence in those on public water ranged from 1/11 (9.1%) to 5/12 (41.7%) on the street of the initial complaint.

For persons on the public water supply those who drank a greater number of glasses of water per day were more likely to develop illness (table 1). This trend was statistically significant. No similar trend was found in those on private wells.

Table 1. Attack rates by consumption of tap water among residents on public water supply, Cedar Heights neighborhood, Danbury, July 26 - August 21, 1987.

Glasses per day	No. of Cases	Total Persons	AR (%)
1-2	1	22	4.5
3-4	4	25	16.0
5-6	4	32	12.5
7-8	10	23	43.5
9-10	6	17	35.3
>10	4	14	28.6

Chi-square for trend = 8.2, p = .004.

Laboratory Studies: Stool examination kits were made available to residents who reported diarrhea during the survey. Thirteen residents from various neighborhood areas who drank the public water supplied samples between August 11 and August 27. Giardia lamblia cysts were seen in six of these thirteen stool samples. The positive samples were submitted by residents who lived close to the resident who made the initial

complaint, where the attack rate was the highest. However, these persons denied close personal contact with each other.

Environmental studies: The water system consisted of two wells which fed into a single cement storage tank, from which the water was pumped into the distribution system. A third well was added to the system on August 7 in response to a frequent water deficit. At least twice per week during the summer water demand exceeded supply, and chlorinated, filtered city water was brought in by truck and pumped into the atmospheric storage tank. Thus, there had been 3 recent changes in the system; periods of low pressure, addition of a new well and trucked-in outside water.

On July 6, and again on approximately August 5, the water supply was exhausted completely and water pressure was lost in the distribution system. Lesser pressure drops in the system occurred more frequently during July. Review of the logs from the water trucking company showed no evidence that water from a contaminated source had been delivered to the system during the summer months.

A coliform count of 80/100 ml was obtained in a water sample taken from a residence on August 14, and coliform counts of 800/100 ml and 760/100 ml were obtained from the same residence and the water main on August 18. Coliform counts of water taken directly from the wells were consistently zero, and coliform counts taken in the distribution system were zero after decontamination.

Discussion: The association between drinking water from the public water supply and diarrhea, together with the finding of fecal coliforms in tap water, strongly suggests that fecally contaminated water was the cause of much of the diarrheal illness in the neighborhood. The symptoms of ill persons were compatible with illness due to Giardia. It is therefore probable that Giardia was the causative agent in most cases. However, we cannot rule out the possibility of other etiological agents

being involved in the neighborhood-wide outbreak, since the positive stool examinations clustered in one area.

The most likely source of the contamination was back-siphonage or sewage or untreated water into the system during periods of negative pressure caused by system overuse relative to capacity. This, however, could not be definitely proven. The new well was an unlikely source of contamination. Residents' symptoms began before the third well became operational. In addition, environmental sampling revealed no evidence that any of the three wells was contaminated, and it would be very unusual for Giardia to contaminate a groundwater source.

Control Measures: After the fecal coliform results became available, residents on the public water supply were told to boil all drinking water. The entire water system was then hyperchlorinated to kill any residual Giardia cysts. Efforts will be made in the future to protect against periods of low pressure in the system.



COMMUNICABLE DISEASES REPORTED

CONNECTICUT

Weeks 1-44
(Through November 6, 1987)

Name	1987 To Date	1986 To Date	% Change From 1986
AIDS	177	148	+ 19.6
GONORRHEA	9014	8075	+ 11.6
SYPHILIS P&S	258	139	+ 85.6
MEASLES	22	8	+175.0
RUBELLA	0	1	-100.0
TUBERCULOSIS	136	155	- 12.3
HEPATITIS A	157	159	- 1.3
HEPATITIS B	268	340	- 21.2
SALMONELLOSIS	1307	884	+ 48.0
SHIGELLOSIS	206	116	+ 77.6

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