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MORBIDITY AND MORTALITY WEEKLY REPORT

Epidemiologic Notes and Reports

Multiple Outbreaks of Salmonellosis Associated with Precooked Roast Beef — Pennsylvania, New York, Vermont

Since August 1981, when 3 outbreaks of salmonellosis associated with ingestion of precooked roast beef were reported to CDC (1), 5 similar *Salmonella* outbreaks have occurred in the northeastern United States. Two outbreaks were associated with precooked roast beef processed in a Philadelphia, Pennsylvania, plant; at least 2 others were associated with precooked beef from an Albany, New York, processor.

Pennsylvania: In late August and September 1981, 2 outbreaks of salmonellosis were reported in eastern Pennsylvania. The first outbreak followed a picnic attended by approximately 60 persons in Montgomery County, Pennsylvania, on August 29. Of the 37 persons interviewed, 14 had been ill. *S. saint-paul* was isolated from stool specimens from 5 patients. Illness was positively associated with eating precooked roast beef and ham. The roast beef and ham were sliced on the same slicer and transported on the same serving tray to the picnic. No meat was available for culture.

The second outbreak occurred on September 29 following a neighborhood party attended by approximately 40 persons in Bucks County, Pennsylvania. Of the 20 persons interviewed, 11 had been ill, and 3 had been hospitalized. *S. saint-paul* was isolated from 5 of 6 stools cultured. Illness was again associated with eating precooked roast beef ($p < < 0.001$, Fisher's exact test). No meat was available for culture; however, *S. saint-paul* was cultured from roast beef purchased September 24 at the same delicatessen that had catered the neighborhood party. Three members of one family not associated with the party had become ill after eating the roast beef. *S. saint-paul* was cultured from 2 of 3 stool specimens tested.

The beef from the processor associated with these 2 outbreaks is marketed as "VC Brand" and is supplied to 40 distributors in Pennsylvania, New Jersey, and Delaware.

New York: In a 1-week period in late September, 4 students at a college campus in Oswego County, New York, had diarrheal illness. Stool specimens from these 4 patients were positive for *Salmonella* (2, *S. chester*; 1, *S. tennessee*, and 1 not typed). Each of these 4 patients had recently eaten at a student union delicatessen where many consumers had complained of the unusual rareness of the roast beef. Because of this fact, county health officials requested that the U.S. Department of Agriculture (USDA) sample from the campus commissary 3 frozen roasts still in sealed containers as supplied by an Albany, New York, processor. *S. chester* was isolated from 2 of these roasts.

Another outbreak of diarrheal illness occurred after a funeral reception in Albany County, New York, on September 9. Of 18 persons who had attended, 12 were contacted. Four had been ill, and illness was again positively associated only with roast beef consumption ($p = 0.03$, Fisher's exact test). Only 1 stool culture was obtained, from which *S. chester* was isolated. No beef was available for testing, but the beef had been purchased from a distributor

Salmonellosis — Continued

who obtained all stocks of precooked beef from the same Albany, New York, processor mentioned above.

Vermont: On September 21, an outbreak of diarrheal illness was reported from a Vermont hospital after 1 patient and 5 hospital employees became ill and had stool cultures positive for *Salmonella*. A subsequent investigation revealed 46 cases of diarrheal illness associated with the hospital in September; 3 of the persons involved were patients, and 43 were hospital employees. One patient with evidence of *Salmonella* sepsis died. *S. chester*, *S. havana*, and *S. tennessee* were isolated from stool specimens from these patients. Illness was significantly associated with eating cold roast beef ($p < 0.01$, X^2). An unopened container of roast obtained from the hospital cafeteria contained *S. chester*, *S. havana*, and *S. livingston*.

On October 14, the USDA requested the Albany plant to initiate a voluntary recall of all roasts already distributed. Beef from this processor reaches over 20 distribution points in 8 northeastern states (Connecticut, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island, Vermont, Virginia) and is marketed under 3 brand names (State National Provisions, Orlev, and Quandts).

Reported by J Bonland, DER, J Centofanti, DER, B Hunt, RN, G Lewis, RN, Montgomery County, M Salzman, Bucks County Health Dept, T DeMelfi, MA McCarthy, RN., EJ Witte, VMD, MPH, State Epidemiologist, Pennsylvania Dept of Health, Harrisburg; M Cravetz, RN, K Smith, RN, Oswego County Health Dept, S Jivok, RN, Saratoga County Health Dept, J Lyons, MD, Albany County Health Dept, J Guzewich, MPH, H Hamel, D Morse, MD, A Squire, M Toly, R Rothenberg, MD, State Epidemiologist, New York State Health Dept, Albany; C Coons, RN, D Pomar, DVM, K Stone, RL Vogt, MD, State Epidemiologist, Vermont State Health Dept, Burlington; Food Safety Inspection and Survey Science Br., Epidemiology Br., USDA; Enteric Bacteriology and Epidemiology Br, Bacterial Diseases Div, Center for Infectious Diseases, Field Svcs Div, Epidemiology Program Office, CDC.

Editorial Note: Since June 1981, at least 8 outbreaks and reports of sporadic cases of salmonellosis associated with commercially precooked roast beef have been reported in the United States. Some recent outbreaks have probably resulted from failure to achieve the required minimal internal temperature of 145 F (62.8 C) (2) or alternate cooking time and temperature requirements deemed safe by USDA (3). These outbreaks emphasize the need for strict compliance with rules governing roast-beef processing. The public should be advised to recook or avoid excessively rare precooked roast beef.

References

1. CDC. Multistate outbreak of salmonellosis caused by precooked roast beef. MMWR 1981;30:391-2.
2. Angelotti R. Minimum cooking requirements for cooked beef roast. Federal Register 1977;42:44217-8.
3. Angelotti R. Cooking requirements for cooked beef roast. Federal Register 1978;43:18681-2.

Surveillance Summary

Measles, United States — Weeks 41-44, 1981

In the first 44 weeks of 1981, a total of 2,819 cases of measles were reported in the United States; this represents a 78% decrease from the 13,104 cases reported in the same period in 1980. During the 4-week period from October 11 to November 7, 1981, reporting weeks 41-44, 90 cases were reported. Of these 90 cases, 75 (83%) occurred in Florida (27), Pennsylvania (21), Texas (16), and California (11). Only 1% (33) of the nation's 3,144 coun-

Measles — Continued

ties reported measles during this period (Figure 1). Of these 33 counties, 12 were in Texas, 7 were in Florida, and 4 were in upstate New York. So far this year only 302 (10%) counties in the United States have reported measles.

Reported by Immunization Div, Center for Prevention Services, CDC.

Editorial Note: Measles transmission continues to occur at very low levels in the United States. In the 4-week period discussed, 99% of the nation's 3,144 counties reported no measles, suggesting that measles transmission has been interrupted in these counties. All of the states in which measles continues to occur are taking aggressive measles-control measures.

FIGURE 1. States and counties reporting measles, weeks 41-44, October 11- November 7, 1981



*4 cases from upstate New York and 1 case from New York City.

Epidemiologic Notes and Reports

Chlordane Contamination of a Public Water Supply — Pittsburgh, Pennsylvania

On December 7, 1980, a resident of southwest Pittsburgh, Pennsylvania, called the Allegheny County Health Department (ACHD) to report that his tap water smelled of kerosene or gasoline. ACHD and utility company engineers confirmed an oily and odorous substance in water mains supplying most of the adjoining neighborhoods of Beechview and Banksville, began flushing large volumes of clean water through affected lines and out of open hydrants, and closed appropriate valves to prevent flow from affected lines to the general distribution

Chlordane Contamination — Continued

system. Chemical testing on December 7 showed that water samples contained a mixture of chlordane and various alkyl hydrocarbons, and affected residents and businesses were warned through news media and door-to-door announcements to stop using tap water for cooking or drinking. Clean water was brought by truck to neighborhood distribution points.

Water was sampled from hydrants and consumer taps in progressively wider circles around the valved-off zone in a search for insecticide or hydrocarbon odors. The water-use ban was extended to neighborhoods served by water lines yielding samples that had detectable odors or chlordane levels ≥ 3 parts per billion (ppb). The ban finally included a portion of the adjacent town of Green Tree, as well as the 2 Pittsburgh neighborhoods, and affected approximately 10,500 residents and numerous businesses. Chlordane was found at a concentration of 6,600 ppb in a first-flow sample taken early on December 7 from a residence on a dead-end water line near the suspected point of contamination. Levels in other samples taken December 7-9 ranged from 0 to 905 ppb, with 44 of 70 positive values < 1.0 ppb.

A 10% random sample of households in Beechview and in a socioeconomically matched, nonaffected census tract were surveyed December 12 for tap-water usage, illness, and medical care during the preceding week. Interviews were completed with 211 (89%) of 238 Beechview households and 176 (70%) of 252 comparison sample households. Four percent to 13% of Beechview respondents reported having some or all of the following signs or symptoms: nausea, diarrhea, abdominal pain, skin and eye irritation, headache, dizziness, and sore throat.

(Continued on page 577)

TABLE I. Summary — cases of specified notifiable diseases, United States

DISEASE	46th WEEK ENDING			CUMULATIVE, FIRST 46 WEEKS		
	November 21 1981	November 15 1980	MEDIAN 1976-1980	November 21 1981	November 15 1980	MEDIAN 1976-1980
Aseptic meningitis	193	164	164	8,289	6,920	5,810
Brucellosis	8	3	3	142	162	162
Chickenpox	2,381	2,011	2,011	178,096	166,114	166,114
Encephalitis: Primary (arthropod-borne & unsp.)	41	18	22	1,271	1,074	1,070
Encephalitis: Post-infectious	-	4	4	75	194	195
Gonorrhea: Civilian	19,186	17,366	19,472	888,103	890,489	890,489
Gonorrhea: Military	288	202	398	24,341	24,107	24,107
Hepatitis: Type A	577	615	538	22,128	25,085	26,293
Hepatitis: Type B	422	421	307	18,193	16,019	13,225
Hepatitis: Type unspecified	249	258	184	9,727	10,310	7,789
Leprosy	2	2	2	216	193	136
Malaria	23	35	16	1,211	1,790	671
Measles (rubeola)	28	35	143	2,897	13,163	25,397
Meningococcal infections: Total	63	47	48	3,077	2,380	2,145
Meningococcal infections: Civilian	62	46	48	3,064	2,362	2,119
Meningococcal infections: Military	1	1	1	13	18	18
Mumps	89	75	263	3,904	7,823	14,811
Pertussis	13	29	29	1,074	1,515	1,515
Rubella (German measles)	21	27	103	1,915	3,511	11,392
Syphilis (Primary & Secondary): Civilian	596	581	465	27,280	24,123	21,347
Syphilis (Primary & Secondary): Military	4	1	7	336	273	273
Tuberculosis	667	459	541	24,169	23,992	25,694
Tularemia	11	3	1	237	199	145
Typhoid fever	8	6	7	528	464	464
Typhus fever, tick-borne (RMSF)	3	4	5	1,154	1,135	1,019
Rabies, animal	109	78	60	6,485	5,737	2,840

TABLE II. Notifiable diseases of low frequency, United States

	CUM. 1981		CUM. 1981
Anthrax	-	Poliomyelitis: Total	7
Botulism (Oreg. 1, Calif. 2)	74	Paralytic	6
Cholera (La. 3)	17	Psittacosis (Upstate N.Y. 1, Pa. 1, Calif. 4)	96
Congenital rubella syndrome	11	Rabies, human	1
Diphtheria	4	Tetanus (Tenn. 1, Tex. 1)	55
Leptospirosis (Tex. 1)	45	Trichinosis (Pa. 1)	120
Plague	9	Typhus fever, flea-borne (endemic, murine)(Tex. 1, Hawaii 1)	43

TABLE III. Cases of specified notifiable diseases, United States, weeks ending
November 21, 1981 and November 15, 1980 (46th week)

REPORTING AREA	ASEPTIC MENIN- GITIS	BRUCELLA LOSIS	CHICKEN POX	ENCEPHALITIS		GONORRHEA (Chvian)		HEPATITIS (Viral), by type			LEPROSY
				Primary	Post-in- fectious			A	B	Unspecified	
				CUM. 1981	CUM. 1981	CUM. 1981	CUM. 1980	1981	1981	1981	
UNITED STATES	193	142	2,381	1,271	75	888,103	890,489	577	422	249	216
NEW ENGLAND	5	4	310	41	7	21,922	22,623	12	21	13	4
Maine	2	-	77	1	-	1,174	1,300	-	1	-	-
N.H.	-	-	24	4	-	803	775	1	2	1	1
Vt.	-	-	1	-	-	400	497	2	1	-	-
Mass.	-	3	105	15	-	9,111	9,525	4	3	9	2
R.I.	-	1	24	1	2	1,322	1,445	1	1	-	-
Conn.	3	-	79	20	5	9,112	9,081	4	13	3	1
MID. ATLANTIC	18	7	41	101	8	107,010	100,051	85	77	39	13
Upstate N.Y.	8	3	27	29	3	18,705	17,861	14	13	8	3
N.Y. City	4	1	14	19	-	43,478	40,037	29	26	11	8
N.J.	2	1	N	16	-	20,313	17,927	42	38	20	2
Pa.	4	2	-	37	5	24,514	24,226	U	U	U	-
E.N. CENTRAL	31	6	966	458	11	131,211	137,738	82	51	19	21
Ohio	6	1	66	226	2	41,513	35,763	12	7	9	-
Ind.	6	1	120	138	8	11,113	14,623	32	26	9	-
Ill.	1	-	144	8	-	37,256	43,358	18	3	3	18
Mich.	18	2	447	62	1	29,162	31,303	19	15	5	2
Wis.	-	2	189	24	-	12,167	12,691	1	-	-	-
W.N. CENTRAL	9	19	183	97	6	43,046	42,288	9	10	8	3
Minn.	6	5	-	39	3	6,739	6,997	3	4	2	1
Iowa	-	5	130	29	2	4,754	4,520	2	1	-	-
Mo.	3	4	2	10	-	20,073	18,492	3	2	4	-
N. Dak.	-	-	-	1	-	538	595	-	-	-	-
S. Dak.	-	1	15	1	-	1,138	1,223	-	1	-	-
Nebr.	-	1	-	4	-	3,183	3,308	1	1	2	-
Kans.	-	3	36	13	1	6,621	7,153	-	1	-	2
S. ATLANTIC	28	32	263	134	19	218,482	223,940	60	91	28	12
Del.	-	1	3	-	-	3,464	3,168	1	-	-	-
Md.	3	-	-	22	2	25,513	23,767	-	21	7	2
D.C.	-	-	1	-	-	12,347	15,401	2	4	-	-
Va.	2	9	15	37	3	20,135	20,604	2	14	3	3
N. Va.	2	1	126	21	-	3,273	3,088	2	1	-	-
W.C.	5	1	N	34	1	33,997	34,090	4	3	2	-
S.C.	1	-	-	4	-	21,225	20,928	2	10	-	7
Ga.	4	6	31	2	-	45,349	43,718	11	23	-	-
Fla.	11	14	87	14	13	53,179	59,176	36	15	16	-
E.S. CENTRAL	11	12	52	140	7	74,081	72,571	10	23	5	-
Ky.	2	1	52	21	2	9,321	10,581	6	8	3	-
Tenn.	4	5	N	81	1	28,136	26,407	1	6	1	-
Ala.	1	4	-	21	2	22,412	21,475	2	6	1	-
Miss.	4	2	-	17	2	14,212	14,108	1	3	-	-
W.S. CENTRAL	11	43	259	114	4	118,023	112,303	145	26	60	22
Ark.	-	5	-	6	-	8,947	9,053	6	6	-	1
La.	1	2	N	7	1	20,558	20,177	41	4	9	-
Okla.	2	7	-	23	1	12,869	11,215	4	4	2	-
Tex.	8	29	259	78	2	75,649	71,858	94	12	49	21
MOUNTAIN	11	5	1	45	3	34,902	34,234	43	13	10	5
Mont.	-	-	-	2	-	1,282	1,314	-	-	-	-
Idaho	2	-	-	-	-	1,552	1,501	4	-	-	1
Wyo.	1	-	-	1	-	935	997	-	-	-	-
Colo.	1	1	-	13	1	9,197	9,261	7	3	-	-
N. Mex.	-	-	-	-	-	3,837	4,137	7	-	1	-
Ariz.	7	1	N	19	-	10,517	9,155	18	4	4	3
Utah	-	-	-	9	2	1,738	1,716	3	4	2	-
Nev.	-	3	1	1	-	5,844	6,153	4	2	3	1
PACIFIC	69	14	306	141	10	139,426	144,741	131	110	67	136
Wash.	10	-	277	12	1	11,474	12,415	16	2	11	5
Oreg.	-	-	-	6	1	8,331	9,983	11	7	-	5
Calif.	41	14	22	114	8	113,311	115,910	101	95	56	87
Alaska	1	-	1	5	-	3,615	3,565	1	1	-	-
Hawaii	17	-	6	4	-	2,695	2,868	2	5	-	39
Guam	U	-	U	-	-	81	124	U	U	U	-
P.R.	1	-	4	1	-	2,871	2,432	-	2	1	2
V.I.	U	-	U	-	-	221	108	U	U	U	-
Pac. Trust Terr.	U	-	U	-	-	329	377	U	U	U	16

N: Not notifiable

U: Unavailable

TABLE III (Cont.'d). Cases of specified notifiable diseases, United States, weeks ending
November 21, 1981 and November 15, 1980 (46th week)

REPORTING AREA	MALARIA		MEASLES (RUBEOLA)			MENINGOCOCCAL INFECTIONS (Total)		MUMPS		PERTUSSIS	RUBELLA		
	1981	CUM. 1981	1981	CUM. 1981	CUM. 1980	1981	CUM. 1981	1981	CUM. 1981	1981	1981	CUM. 1981	CUM. 1980
UNITED STATES	23	1,211	28	2,897	13,163	63	3,077	89	3,904	13	21	1,915	3,511
NEW ENGLAND	-	64	1	87	675	2	199	9	218	-	2	125	210
Maine	-	1	-	5	33	-	24	4	40	-	-	33	68
N. H.	-	3	1	8	331	-	21	-	23	-	-	51	40
Vt.	-	6	-	3	226	1	13	-	8	-	-	-	3
Mass.	-	30	-	61	58	1	63	1	74	-	2	29	69
R. I.	-	3	-	-	2	-	17	3	28	-	-	-	9
Conn.	-	21	-	10	25	-	61	1	45	-	-	12	21
MID. ATLANTIC	5	158	21	937	3,826	22	460	13	638	2	-	223	563
Upstate N.Y.	1	34	5	226	704	7	146	3	136	-	-	107	216
N.Y. City	1	59	11	101	1,198	4	75	1	87	1	-	55	100
N.J.	3	48	-	58	843	4	99	2	101	1	-	48	101
Pa.	-	17	5	552	1,081	7	140	7	314	-	-	13	146
E.N. CENTRAL	1	60	2	86	2,446	3	370	37	1,138	1	4	401	842
Ohio	-	8	-	16	380	2	140	30	258	-	-	3	8
Ind.	-	9	-	9	93	-	46	3	123	-	2	137	358
Ill.	-	17	2	25	348	1	92	3	205	1	1	102	168
Mich.	1	26	-	33	250	-	85	-	344	-	-	37	129
Wis.	-	-	-	3	1,375	-	7	1	208	-	1	122	179
W.N. CENTRAL	-	33	-	10	1,339	3	144	3	223	2	-	79	207
Minn.	-	14	-	3	1,103	-	47	-	8	-	-	8	28
Iowa	-	4	-	1	20	1	26	2	69	-	-	4	9
Mo.	-	3	-	1	66	1	43	1	22	2	-	2	45
N. Dak.	-	1	-	-	-	-	2	-	-	-	-	-	6
S. Dak.	-	1	-	-	-	1	8	-	1	-	-	-	2
Nebr.	-	2	-	4	83	-	-	-	3	-	-	1	4
Kans.	-	8	-	1	67	-	18	-	120	-	-	64	113
S. ATLANTIC	3	147	1	460	1,972	11	707	8	548	3	2	144	341
Del.	-	1	-	-	3	-	4	-	10	-	-	1	1
Md.	-	35	-	5	83	4	52	-	96	-	-	1	68
D.C.	-	9	-	1	5	-	6	-	3	-	-	-	1
Va.	1	31	-	9	339	-	90	-	125	-	-	9	41
W. Va.	-	4	-	9	10	-	27	5	105	-	-	22	26
N.C.	-	13	-	3	130	4	108	-	22	-	-	5	46
S.C.	-	2	-	2	159	-	88	-	18	-	-	8	57
Ga.	-	8	-	111	826	1	109	-	38	1	-	37	-
Fla.	2	44	1	320	417	2	223	3	131	2	2	61	101
E.S. CENTRAL	-	12	-	5	332	1	215	3	95	-	-	37	88
Ky.	-	-	-	1	56	-	61	2	46	-	-	23	43
Tenn.	-	-	-	2	170	-	63	1	24	-	-	13	40
Ala.	-	10	-	2	22	1	66	-	19	-	-	1	3
Miss.	-	2	-	-	84	-	25	-	6	-	-	-	2
W.S. CENTRAL	2	96	1	894	966	8	475	1	224	1	5	181	140
Ark.	-	4	-	24	16	1	28	1	7	-	1	7	4
La.	2	10	-	4	12	1	110	-	5	1	-	9	13
Okla.	-	8	-	7	775	2	44	-	-	-	-	2	6
Tex.	-	74	1	859	163	4	293	-	212	-	4	163	117
MOUNTAIN	-	42	2	37	482	2	124	3	139	1	-	94	160
Mont.	-	1	-	-	2	-	9	-	14	-	-	4	45
Idaho	-	4	-	1	-	-	6	-	6	-	-	4	24
Wyo.	-	-	-	1	-	-	4	2	3	-	-	12	1
Colo.	-	20	-	10	24	1	45	-	47	-	-	27	12
N. Mex.	-	3	-	8	12	-	7	-	-	-	-	5	5
Ariz.	-	7	2	7	387	1	21	1	35	1	-	21	39
Utah	-	4	-	-	47	-	5	-	20	-	-	9	28
Nev.	-	3	-	10	10	-	27	-	14	-	-	12	6
PACIFIC	12	599	-	381	1,125	11	383	12	681	3	8	631	960
Wash.	-	25	-	3	177	2	67	-	158	2	1	93	86
Oreg.	2	17	-	5	-	3	57	-	69	-	-	51	65
Calif.	10	545	-	366	936	6	242	12	413	-	7	475	793
Alaska	-	3	-	-	6	-	13	-	17	-	-	1	12
Hawaii	-	9	-	7	6	-	4	-	24	1	-	11	4
Guam	U	2	U	5	6	U	-	U	8	U	U	1	2
P.R.	-	11	2	290	164	-	12	-	149	-	1	5	23
V.I.	-	4	-	25	6	-	1	3	8	-	-	1	-
Pac. Trust Terr.	U	-	U	1	12	U	-	U	15	U	U	1	1

U: Unavailable

TABLE III (Cont.'d). Cases of specified notifiable diseases, United States, weeks ending November 21, 1981 and November 15, 1980 (46th week)

REPORTING AREA	SYPHILIS (Civilian) (Primary & Secondary)		TUBERCULOSIS		TULA- REMIA	TYPHOID FEVER		TYPHUS FEVER (Tick-borne) (RMSF)		RABIES, Animal
	CUM. 1981	CUM. 1980	1981	CUM. 1981	CUM. 1981	1981	CUM. 1981	1981	CUM. 1981	CUM. 1981
UNITED STATES	27,280	24,123	667	24,169	237	8	528	3	1,154	6,485
NEW ENGLAND	529	467	14	708	5	-	16	-	9	39
Maine	5	6	1	49	-	-	1	-	-	13
N.H.	13	6	-	19	-	-	-	-	-	7
Vt.	17	6	1	24	1	-	-	-	-	-
Mass.	332	279	10	417	3	-	8	-	5	11
R.I.	32	31	2	50	-	-	-	-	2	2
Conn.	130	139	-	149	1	-	7	-	2	6
MID. ATLANTIC	3,902	3,293	88	3,739	10	1	79	-	41	109
Upstate N.Y.	363	280	10	623	10	-	13	-	14	75
N.Y. City	2,335	2,135	34	1,419	-	1	44	-	3	-
N.J.	548	394	21	800	-	-	13	-	11	23
Pa.	656	484	23	897	-	-	9	-	13	11
E.N. CENTRAL	2,011	2,474	89	3,289	5	-	38	-	52	983
Ohio	289	334	9	587	-	-	10	-	39	66
Ind.	271	175	4	368	4	-	3	-	6	86
Ill.	1,039	1,518	40	1,337	-	-	15	-	6	522
Mich.	332	358	31	826	1	-	8	-	1	16
Wis.	80	89	5	171	-	-	2	-	-	293
W.N. CENTRAL	600	314	35	830	34	-	19	1	54	2,511
Minn.	176	105	3	139	-	-	2	-	2	443
Iowa	24	23	9	80	-	-	3	-	7	820
Mo.	344	146	11	384	28	-	9	1	30	229
N. Dak.	11	4	-	30	-	-	-	-	-	346
S. Dak.	2	5	1	59	1	-	1	-	-	295
Nebr.	10	10	1	26	3	-	2	-	3	188
Kans.	33	21	10	112	2	-	2	-	12	190
S. ATLANTIC	7,296	5,787	149	5,139	13	-	61	1	655	585
Del.	13	19	2	54	1	-	-	-	3	1
Md.	521	397	21	530	-	-	14	1	60	46
D.C.	585	432	3	297	-	-	2	-	1	-
Va.	631	523	19	526	3	-	1	-	105	134
W. Va.	24	16	8	171	-	-	6	-	6	34
N.C.	582	428	18	896	2	-	5	-	292	19
S.C.	502	339	21	490	3	-	1	-	102	45
Ge.	1,789	1,646	24	838	4	-	4	-	76	211
Fla.	2,649	1,987	33	1,337	-	-	28	-	10	95
E.S. CENTRAL	1,781	1,987	44	2,160	10	-	11	-	133	443
Ky.	87	118	15	540	3	-	1	-	2	120
Tenn.	637	842	11	714	7	-	3	-	82	214
Ala.	533	436	12	582	-	-	5	-	22	105
Miss.	524	591	6	324	-	-	2	-	27	4
W.S. CENTRAL	6,570	4,863	78	2,752	111	3	134	1	174	1,019
Ark.	148	195	6	308	53	2	7	-	36	145
La.	1,469	1,200	7	486	5	-	2	-	1	33
Okla.	155	98	8	290	33	-	4	-	98	202
Tex.	4,798	3,370	57	1,668	20	1	121	1	39	639
MOUNTAIN	671	566	12	658	38	-	24	-	28	243
Mont.	11	2	-	31	6	-	4	-	12	114
Idaho	18	16	-	10	4	-	-	-	5	7
Wyo.	17	12	-	11	1	-	-	-	5	17
Colo.	204	155	4	83	9	-	9	-	1	35
N. Mex.	117	99	3	130	3	-	-	-	-	27
Ariz.	163	190	2	298	1	-	10	-	-	26
Utah	27	13	3	53	13	-	1	-	2	11
Nev.	114	79	-	42	1	-	-	-	3	6
PACIFIC	3,920	4,372	158	4,894	11	4	146	-	8	553
Wash.	158	223	3	338	1	-	4	-	1	15
Oreg.	105	99	3	168	1	-	4	-	-	10
Calif.	3,577	3,904	143	4,152	9	4	134	-	7	501
Alaska	12	8	-	61	-	-	-	-	-	27
Hawaii	68	138	9	175	-	-	4	-	-	-
Guam	-	5	U	33	-	U	-	U	-	-
P.R.	567	540	-	452	-	-	4	-	-	73
V.I.	18	10	-	1	-	-	6	-	-	-
Pac. Trust Terr.	-	-	U	49	-	U	-	U	-	-

U: Unavailable

TABLE IV. Deaths in 121 U.S. cities,* week ending
November 21, 1981 (46th week)

REPORTING AREA	ALL CAUSES, BY AGE (YEARS)						P & I** TOTAL	REPORTING AREA	ALL CAUSES, BY AGE (YEARS)						P & I** TOTAL	
	ALL AGES	≥65	45-64	25-44	1-24	<1			ALL AGES	≥65	45-64	25-44	1-24	<1		
NEW ENGLAND	723	451	170	38	19	23	47	S. ATLANTIC	1,251	729	319	96	45	62	56	
Boston, Mass.	176	96	55	14	8	3	21	Atlanta, Ga.	156	94	33	17	3	9	4	
Bridgeport, Conn.	37	20	9	5	2	1	2	Baltimore, Md.	246	133	69	14	13	17	2	
Cambridge, Mass.	20	15	2	3	-	-	1	Charlotte, N.C.	55	28	20	3	1	3	3	
Fall River, Mass.	20	11	7	1	1	-	1	Jacksonville, Fla.	92	62	17	3	6	4	6	
Hartford, Conn.	77	41	27	4	3	2	2	Miami, Fla.	159	98	36	17	6	2	5	
Lowell, Mass.	33	10	-	1	-	-	2	Norfolk, Va.	59	36	13	4	1	5	8	
Lynn, Mass.	18	14	3	-	1	-	-	Richmond, Va.	84	37	31	6	4	6	5	
New Bedford, Mass.	19	15	4	-	-	-	2	Savannah, Ga.	26	17	6	2	-	1	8	
New Haven, Conn.	80	62	10	1	2	5	1	St. Petersburg, Fla.	119	93	22	-	1	3	4	
Providence, R.I.	78	56	19	1	2	-	6	Tampa, Fla.	75	51	15	2	4	3	2	
Somerville, Mass.	12	10	1	1	1	-	1	Washington, D.C.	126	51	42	22	4	7	2	
Springfield, Mass.	50	24	15	1	-	-	10	5	Wilmington, Del.	54	29	15	6	2	2	3
Waterbury, Conn.	38	25	10	3	-	-	2									
Worcester, Mass.	65	52	8	3	-	-	2									
MID. ATLANTIC	2,928	1,917	687	171	69	79	132	E.S. CENTRAL	681	397	183	42	31	28	35	
Albany, N.Y.	51	36	6	4	3	2	2	Birmingham, Ala.	123	70	38	6	9	-	2	
Allentown, Pa.	23	19	4	-	-	-	-	Chattanooga, Tenn.	59	39	13	4	3	-	4	
Buffalo, N.Y.	200	138	42	11	6	3	21	Knoxville, Tenn.	52	25	22	2	1	2	10	
Camden, N.J.	48	32	9	3	2	2	3	Louisville, Ky.	85	57	19	7	2	-	1	
Elizabeth, N.J.	26	21	4	1	-	-	2	Memphis, Tenn.	176	103	40	8	8	17	12	
Erie, Pa.†	48	37	8	-	1	2	4	Mobile, Ala.	66	42	19	2	2	1	-	
Jersey City, N.J.	51	33	11	4	-	3	-	Montgomery, Ala.	23	12	5	3	2	1	2	
N.Y. City, N.Y.	1,425	928	325	99	32	41	49	Nashville, Tenn.	97	49	27	10	4	7	1	
Newark, N.J.	83	39	24	12	1	2	7									
Peterborough, N.J.	27	17	7	2	1	-	-	W.S. CENTRAL	1,388	785	358	115	64	64	45	
Philadelphia, Pa.†	292	185	84	12	3	8	14	Austin, Tex.	34	22	6	3	1	2	4	
Pittsburgh, Pa.†	230	143	59	10	10	8	7	Baton Rouge, La.	55	29	10	7	7	2	2	
Reading, Pa.	43	36	7	-	-	-	5	Corpus Christi, Tex.	35	20	8	2	1	4	1	
Rochester, N.Y.	133	90	33	3	4	3	7	Dallas, Tex.	213	109	58	16	10	20	3	
Schenectady, N.Y.	21	12	6	1	2	-	1	El Paso, Tex.	75	43	13	6	4	7	8	
Scranton, Pa.	23	20	3	-	-	-	2	Fort Worth, Tex.	88	50	25	8	4	1	7	
Syracuse, N.Y.	108	69	30	4	1	4	3	Houston, Tex.	261	112	78	37	23	11	2	
Trenton, N.J.	38	26	9	1	2	-	2	Little Rock, Ark.	74	47	20	-	3	4	6	
Utica, N.Y.	26	13	11	2	-	-	2	New Orleans, La.	234	151	59	20	3	1	1	
Yonkers, N.Y.	32	23	5	2	1	1	1	New Orleans, La.	192	119	51	8	5	9	1	
								San Antonio, Tex.	45	32	12	-	-	1	5	
								Shreveport, La.	82	51	18	8	3	2	6	
								Sulphur, Okla.								
E.N. CENTRAL	2,469	1,496	624	162	89	97	95	MOUNTAIN	678	382	184	56	35	21	24	
Akron, Ohio	86	48	25	2	6	4	5	Albuquerque, N. Mex.	97	40	31	15	9	2	3	
Canton, Ohio	40	30	8	1	-	1	2	Bozou Springs, Colo.	42	32	6	3	-	1	3	
Chicago, Ill.	557	309	155	45	20	28	14	Denver, Colo.	136	88	31	8	7	2	7	
Cincinnati, Ohio	143	91	33	12	1	6	13	Las Vegas, Nev.	75	38	24	5	5	3	-	
Cleveland, Ohio	197	122	49	15	7	4	-	Ogden, Utah	19	11	6	1	1	-	3	
Columbus, Ohio	143	84	33	9	8	9	6	Phoenix, Ariz.	153	74	56	11	7	5	4	
Dayton, Ohio	116	65	35	9	4	3	3	Pueblo, Colo.	25	22	3	-	-	-	1	
Detroit, Mich.	297	167	85	27	8	10	11	Salt Lake City, Utah	46	27	10	2	3	4	-	
Evansville, Ind.	46	29	9	3	2	3	2	Tucson, Ariz.	85	50	17	11	3	4	3	
Fort Wayne, Ind.	64	40	20	3	-	1	3									
Gary, Ind.	15	10	3	-	2	-	1									
Grand Rapids, Mich.	51	35	8	5	1	2	3	PACIFIC	1,769	1,203	364	107	43	49	92	
Indianapolis, Ind.	167	92	49	12	9	5	5	Berkeley, Calif.	16	10	4	1	-	1	-	
Madison, Wis.	28	19	3	4	1	1	2	Fresno, Calif.	68	44	13	7	1	3	4	
Milwaukee, Wis.	129	84	29	3	7	6	-	Glendale, Calif.	26	21	3	2	-	-	2	
Peoria, Ill.	75	37	19	6	4	9	9	Honolulu, Hawaii	56	35	11	7	-	-	3	
Rockford, Ill.	51	36	10	1	1	3	9	Long Beach, Calif.	81	56	19	4	2	-	5	
South Bend, Ind.	51	39	8	2	2	-	1	Los Angeles, Calif.	503	339	110	31	10	12	19	
Toledo, Ohio	125	90	29	2	3	1	5	Oakland, Calif.	67	41	12	7	3	4	5	
Youngstown, Ohio	88	69	14	1	3	1	1	Pasadena, Calif.	30	21	6	2	-	-	1	
								Portland, Oreg.‡	99	92	1	2	1	3	-	
W.N. CENTRAL	862	586	187	36	23	30	28	Sacramento, Calif.	77	47	22	3	5	-	5	
Des Moines, Iowa	80	59	17	2	1	1	1	San Diego, Calif.	158	112	32	9	3	2	17	
Duluth, Minn.	28	21	6	1	-	-	-	San Francisco, Calif.	151	103	31	9	4	3	4	
Kansas City, Kans.	45	28	10	3	2	2	-	San Jose, Calif.	168	106	42	7	5	7	11	
Kansas City, Mo.	122	88	24	3	2	5	6	Seattle, Wash.	158	98	34	9	8	9	4	
Lincoln, Nebr.	40	31	6	3	-	-	-	Spokane, Wash.	69	49	15	3	1	1	6	
Minneapolis, Minn.	90	53	22	7	4	4	1	Tacoma, Wash.	42	29	9	4	-	-	5	
Omaha, Nebr.	77	47	24	2	1	3	1									
St. Louis, Mo.	207	131	57	5	5	9	10									
St. Paul, Minn.	84	71	8	2	2	1	3	TOTAL	12,749 ^{††}	7,946	3,076	823	418	453	554	
Wichita, Kans.	89	57	13	8	6	5	6									

*Mortality data in this table are voluntarily reported from 121 cities in the United States, most of which have populations of 100,000 or more. A death is reported by the place of its occurrence and by the week that the death certificate was filed. Fetal deaths are not included.

**Pneumonia and influenza

†Because of changes in reporting methods in these 4 Pennsylvania cities, these numbers are partial counts for the current week. Complete counts will be available in 4 to 6 weeks.

††Total includes unknown ages.

‡Data not available. Figures are estimates based on average of past 4 weeks.

Chlordane Contamination – Continued

These frequencies were significantly greater ($p < 0.05$ by X^2 testing) than the 1%-4% rates reported by comparison respondents. No significant differences were noted in rates of vomiting, sweating, seizures or shaking, tingling, muscle aches, nose bleeds, fever, or visits for medical care. For December 7, 30% of Beechview respondents reported consuming tap water with an abnormal smell or taste; 47% reported consuming from 1 to 20 glasses of water that seemed to be normal. Only 5% reported consuming tap water during the next 5 days. Serum samples obtained December 18 from Beechview survey subjects who, on December 7, had ingested 0-3 glasses of tap water (29 subjects) or ≥ 5 glasses of tap water (17 subjects) were tested by gas chromatography and mass spectroscopy for alpha-chlordane, gamma-chlordane, heptachlor, heptachlorepoxide, oxychlordane, and transnonachlor. All samples were negative for all 6 compounds at a minimum level of 1 ppb.

Four nearby hospital emergency rooms were asked to report numbers of patients seen each week for gastrointestinal, neurologic, or dermatologic complaints in the period November 16-December 13. No significant increases were noted for the week beginning December 7 relative to levels during the 3 preceding weeks. Telephone-call records at ACDH indicated that 168 residents of affected neighborhoods reported water-related illness—61% had gastrointestinal symptoms, 13% had headache, and 7% had eye or skin irritation. Symptoms were mild and self-limited, and no one had been hospitalized or otherwise incapacitated. Comparable water-related complaints were received from at least 19 persons living outside the affected areas.

The water-use ban was provisionally lifted in successive sections of the contaminated zone in the period December 18-24, when chlordane levels at selected sampling points had fallen below 3 ppb, a level established in consultation with the U.S. Environmental Protection Agency (EPA) water quality officials as acceptable for 3-6 months. High-volume flushing of mains and user service lines was continued. On July 6, 1981, when sample values had fallen below 1 ppb, the affected system was considered safe for normal use, and the ban was permanently lifted. An extensive search for the source of contamination suggested that the insecticide had been deliberately injected into the system through a stopcock intended to provide access for testing devices.

Reported by P Silverman, M Hreha, A Brunwasser, A Tuttle, D Faller, C Vukotich, NM Richards, MD, Allegheny County Health Dept, Pennsylvania; Chronic Diseases Div, Clinical Chemistry Div, Center for Environmental Health, Field Services Div, Epidemiology Program Office, CDC.

Editorial Note: Chlordane, an organochlorine insecticide, is readily absorbed through cutaneous, respiratory, and gastrointestinal surfaces. Acute toxicity is manifested primarily by nervous system symptoms, and chronic exposure has caused liver cancer in some laboratory animals (1). Its use is currently restricted to controlling termites, fire ants, and a limited number of agricultural insect pests (2). The commercial product, technical chlordane, is a mixture of several chlordane isomers, heptachlor, and related compounds, and is available for termite control in 45% to 75% concentrations in kerosene or xylene. Pest-control operators diluting the concentrate with water and emulsifiers for surface spraying or high-pressure injection to impregnate soil have occasionally allowed chlordane to enter public water lines via back-siphonage or other inadvertent cross-connections (3). The present episode is the first reported that was apparently not of accidental origin.

Although affecting a large population, the level of chlordane exposure in this episode was quite low. Levels in most water samples were low, fewer than 1 of 3 surveyed persons noted abnormalities in ingested water, and the ban effectively curtailed ingestion after December 7. Telephone complaints, emergency room reports, and survey data did not suggest acute chlor-

Chlordane Contamination — Continued

dane toxicity, and neither chlordane nor its metabolites were found in serum of persons who had ingested affected water. Rather than to chlordane, reported symptoms could be attributable to superficial effects of kerosene hydrocarbons that dominated the impurities found in water samples.

Chlordane is difficult to remove from water-distribution systems because it adheres to lining surfaces or it deposits in tanks and lines and rediffuses slowly into adjacent water. However, prolonged and vigorous flushing relatively quickly reduced the concentration to acceptable levels in this episode. EPA has not established a "safe, no adverse response level" (SNARL) for long-term exposure to chlordane in drinking water, but estimates (1,4) suggest that 1 excess cancer case may occur per 100,000 persons ingesting 2 liters/day of water containing chlordane at 0.3 ppb, over a 70-year lifetime. Concentrations in the affected system, when it was returned to normal service, indicate a proportionately lower risk to users. This risk should be reduced further by the likelihood that persons may consume less than 2 liters/day of affected water and that the continuous flushing action of normal water flow will eventually eliminate the minimal residual contamination.

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Surveillance Summary

Occupational Injury Surveillance — United States

The National Institute for Occupational Safety and Health (NIOSH), in conjunction with the Consumer Product Safety Commission (CPSC), recently developed a new surveillance system* to monitor all occupational injuries treated at a sample of 66 hospital emergency rooms, statistically selected to be representative of all U.S. hospital emergency rooms and placed in 5 categories according to hospital size and type. The number of sample hospitals selected from each category is proportional to the emergency-room usage for hospitals in that category.

Data in Table 1 show the types and estimated numbers of occupational injuries treated in U.S. hospital emergency rooms in the period September 24-30, 1981. In addition to these variables, detailed occupational injury information provided through this surveillance system includes treatment date, age, sex, type of accident, cause of accident, and disposition of case. As can be seen in Table 1, the most frequent type of injury is laceration (25.4%). Fingers are the most frequently injured body site (25.3%). Lacerations to the fingers (14.3%) are the most frequent type- and body site-specific occupational injury.

During a 3-month period beginning May 15, 1981, the estimated total number of occupational injuries (both lost-workday and nonlost-workday injuries) treated at all U.S. hospital emergency rooms was 839,061. This 3-month occupational injury experience extrapolates to a crude national estimate of 3.3 million occupational injuries treated in hospital emergency rooms for 1981. Seasonal differences are not addressed in this estimate; there may be a

*Based on the National Electronic Injury Surveillance System (NEISS) developed by CPSC in 1972.

Occupational Injury – Continued

slight increase in frequency of such injuries during the summer.

This new surveillance system may lead to annual national estimates of total numbers of occupational injuries different from those generated with other systems because of variations in definitions of reportable occupational injury and in employment coverage. Although other information bases may exclude certain minor injuries or establishments with limited employment, estimates generated with the NIOSH-CPSC system are based on all occupational injuries treated in hospital emergency rooms regardless of severity. The new system has fewer restrictions on definitions of employee populations at risk and increased utility for estimating injury patterns of the American worker. A salient characteristic of this increased utility is the ability of the surveillance system to provide occupational injury statistics that are more current than those previously available.

Reported by Div of Safety Research, NIOSH, CDC.

TABLE 1. Patterns of occupational injuries treated in hospital emergency rooms, by body site and type of injury, United States, September 24-30, 1981

NATURE OF OCCUPATIONAL INJURY*								
Body site affected	Abrasion contusion, hematoma		Burn injury		Laceration		Puncture	
	#	%	#	%	#	%	#	%
Head-neck	770	1.3	0	0.0	734	1.2	0	0.0
Face	2,052	3.3	788	1.3	1,321	2.1	0	0.0
Arm	1,708	2.8	436	0.7	1,401	2.3	334	0.5
Wrist	330	0.5	0	0.0	108	0.2	196	0.3
Hand	946	1.5	588	1.0	2,150	3.5	521	0.9
Finger	2,491	4.1	144	0.2	8,796	14.3	1,199	2.0
Trunk	1,570	2.6	249	0.4	81	0.1	0	0.0
Leg	2,410	3.9	141	0.2	596	1.0	105	0.2
Ankle	137	0.2	146	0.2	27	0.1	0	0.0
Foot	1,585	2.6	108	0.2	162	0.3	733	1.2
Toe	411	0.7	115	0.2	283	0.5	0	0.0
Multiple sites	115	0.2	32	0.1	0	0.0	0	0.0
TOTAL	14,525	23.6	2,747	4.5	15,659	25.4	3,088	5.0

NATURE OF OCCUPATIONAL INJURY* (Continued)

Body site affected	Fracture		Foreign body		Sprain, strain		Other injury		TOTAL	
	#	%	#	%	#	%	#	%	#	%
Head-neck	0	0.0	0	0.0	743	1.2	354	0.6	2,601	4.2
Face	0	0.0	3,073	5.0	0	0.0	1,510	2.5	8,744	14.2
Arm	413	0.7	0	0.0	676	1.1	925	1.5	5,893	9.6
Wrist	63	0.1	0	0.0	1,115	1.8	0	0.0	1,812	2.9
Hand	81	0.1	115	0.2	238	0.4	549	0.9	5,188	8.4
Finger	925	1.5	115	0.2	195	0.3	1,697	2.8	15,562	25.3
Trunk	314	0.5	0	0.0	5,270	8.6	665	1.1	8,149	13.2
Leg	364	0.6	193	0.3	1,647	2.7	54	0.1	5,510	9.0
Ankle	222	0.4	0	0.0	1,717	2.8	0	0.0	2,249	3.7
Foot	186	0.3	0	0.0	269	0.4	108	0.2	3,151	5.1
Toe	469	0.8	0	0.0	0	0.0	196	0.3	1,474	2.4
Multiple sites	0	0.0	0	0.0	115	0.2	990	1.6	1,252	2.0
TOTAL	3,037	4.9	3,496	5.7	11,985	19.5	7,048	11.4	61,585	100.0

*Listed according to the primary diagnosis stated by attending physician.

Erratum, Vol. 30, No. 21

p253. In the article "Risk-Factor-Prevalence Survey—Utah," the value in Table 2 for excess weight for Utah was incorrectly reported as 46.0. This value should read 10.0

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