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Epidemiologic Notes and Reports

Multistate Outbreak of *Salmonella poona* Infections — United States and Canada, 1991

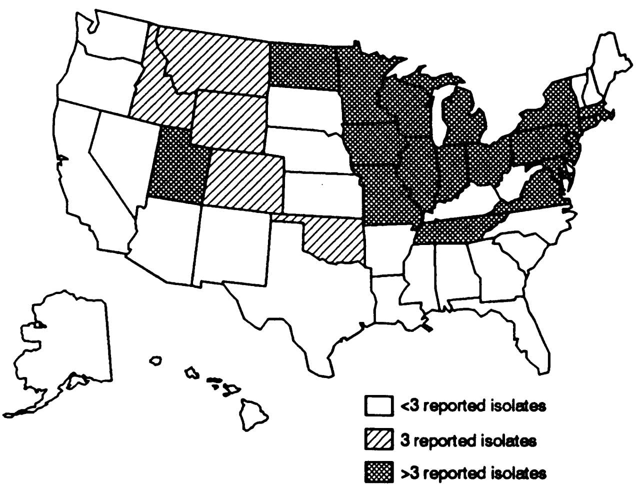
During June and July 1991, more than 400 laboratory-confirmed infections with *Salmonella poona* occurred in 23 states (Figure 1) and in Canada. This report describes several investigations that indicated this was a large nationwide outbreak related to consumption of cantaloupes.

UNITED STATES

Illinois and Michigan

During June and July, laboratories in Illinois and Michigan identified 49 cases of *S. poona* infection for which onset of illness had occurred during the first 3 weeks of

FIGURE 1. Reported isolates of *Salmonella poona*, by state — United States, June and July 1991



Salmonella poona — *Continued*

June. Symptoms included nausea, vomiting, diarrhea, abdominal cramps, and fever; the duration of symptoms was 3–12 days. A case-control investigation compared culture-confirmed cases with age- and residence-matched controls using the same questionnaire in both states; nine (28%) of 32 ill persons and three (7%) of 45 controls specifically recalled consuming cantaloupe in fruit salad (odds ratio [OR]=5.9; 95% confidence interval [CI]=1.3–36.1); 14 (44%) of 32 ill persons and 18 (38%) of 48 controls recalled eating cantaloupe during the 3 days before onset of symptoms (OR=2.6; 95% CI=0.9–7.7). Seventeen *S. poona* outbreak isolates from seven states were characterized by the Michigan Department of Public Health Laboratory. Chromosomal digest by low-frequency cutting restriction endonuclease and pulse field gel electrophoresis revealed an identical pattern, suggesting a probable common origin.

Industry sources reported that the temporal and geographic distributions of cases were compatible with distribution of cantaloupe to the affected states from the Rio Grande region of Texas from mid-May to mid-June.

Minnesota

During June and July, 20 *S. poona* isolates were identified by the Minnesota Department of Health, Division of Public Health Laboratories, an increase from 1989 and 1990 when four *S. poona* isolates per year were reported. Onset of symptoms occurred from June 5 through July 7; eight cases occurred during the week of June 10–16.

In a case-control study of the first 13 cases and 26 age- and telephone-exchange–matched controls, eight (62%) ill persons and no controls reported consuming cantaloupe from a salad bar or in a fruit salad (OR=undefined; $p<0.01$). Illness was not associated with consumption of fresh sliced cantaloupe (OR=2.6; 95% CI=0.5–15.2).

Grocery stores, restaurants, and distributors reported that the implicated cantaloupes were from Texas. Industry sources identified the probable source of these cantaloupes as an area including Hidalgo and Starr counties in the lower Rio Grande Valley of Texas. Distribution of onset of illness coincided with the shipping of cantaloupes from this area from May 10 through June 15.

New Jersey

During June, 17 *S. poona* isolates were identified in New Jersey. Onset of illness ranged from May 20 to June 26. Two isolates were identified from among the 75 attendees at a June 9 party. Food histories were obtained from 38 attendees; 17 (45%) were ill with diarrhea. Analysis of these histories associated illness with eating a fruit salad served at the party (OR=6.2; 95% CI=1.2–41.9; p=0.03). The fruit salad contained cantaloupe, honeydew melon, watermelon, strawberries, grapes, and pineapples. The suppliers of the party caterer reported that they received cantaloupes from Arizona, California, and Texas.

CANADA

As of July 24, 72 laboratory-confirmed cases of *S. poona* had been reported to the Laboratory Centre for Disease Control, Health and Welfare Canada—66 (92%) from Ontario and the remainder from Newfoundland, Quebec, and Saskatchewan. Since 1969, three to 18 human isolates of this serotype have been reported annually in Canada. Most cases occurred in the second and third weeks of June. A case-control study to examine vehicles of infection is in progress.

Salmonella poona — *Continued*

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Editorial Note: *Salmonella* is the most frequently reported cause of foodborne outbreaks of gastroenteritis in the United States (*1*). Foods containing poultry or other meat, eggs, or dairy products are most often the vehicles for foodborne salmonellosis. Food-preparation practices contributing to past outbreaks include improper food storage or holding temperature and poor hygiene by foodhandlers (*1*). Fruits and vegetables are not often identified as vehicles for *Salmonella* infection; however, in 1990, two multistate outbreaks of salmonellosis associated with fruits and vegetables occurred: *S. chester* associated with canteloupes affected at least 245 persons in 30 states, and *S. javiana* gastroenteritis associated with tomatoes affected 174 persons in four states (*2,3*).

In this report, the association of illness with consumption of cantaloupe in fruit salads or from salad bars suggests that contaminated fruit may have incubated for several hours at room temperature after preparation. In neither this outbreak nor the two *Salmonella* outbreaks in 1990 (*2,3*) was the organism recovered from an implicated fruit or vegetable; most of the produce was consumed or discarded before the investigation.

It is difficult to trace melons once they are unpacked from crates. Although industry sources identified the lower Rio Grande Valley in Texas as the probable source of the implicated cantaloupes, some may have come from Mexico. The Food and Drug Administration (FDA) sampled imported cantaloupes and watermelons at the U.S. border in 1990 and 1991 and isolated many serotypes of *Salmonella* from approximately 1% of the rinds. Grown on the ground, melons may be contaminated on their surface with dirt, chemicals, animal excreta, or bacteria, including *Salmonella*. Although large produce companies wash and dip melons in a chlorine solution, field-packed melons do not receive such treatment. Cutting an unwashed melon through a contaminated rind may lead to contamination of the edible part via the cutting knife or subsequent contact of dirty rinds with cut pieces of melons. Excessive time at room temperature may then permit bacterial growth.

To reduce the risk for *S. poona* infection from melons, the FDA recommends that both produce retailers and consumers thoroughly clean melons with potable water before cutting them, prepare cut melons using clean and sanitized utensils and surfaces, hold cut melons at ≤45 F (≤7 C) until served or sold, and limit display of cut cantaloupes to less than 4 hours if not kept refrigerated. To decrease the risk for *Salmonella* food poisoning, it is prudent to wash all fruits and vegetables before they are handled and consumed.

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Salmonella poona – *Continued*

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Pseudo-Outbreak of Infectious Mononucleosis – Puerto Rico, 1990

From September 11 through October 7, 1990, 57 persons (including outpatients, inpatients, and staff) at a community hospital in Puerto Rico had laboratory-confirmed infectious mononucleosis; however, investigation determined that test results may have been misinterpreted. This report describes the investigation of this pseudo-outbreak by the Puerto Rico Department of Health (PRDH) in October 1990.

During September 9–15, three (38%) of eight heterophile agglutination tests (Monophile*) processed in the hospital's laboratory were interpreted as positive; during September 16–22, nine (60%) of the 15 tests processed were interpreted as positive (Figure 1). In comparison, in the first 8 months of 1990, an average of three (19%) of 16 such tests processed each month were positive. Physicians and hospital staff determined the increase indicated an outbreak of infectious mononucleosis.

Additional physicians began testing their patients, and several hospital staff members requested testing for themselves. During September 30–October 6, two local newspapers and a television station reported that the hospital had detected an epidemic of infectious mononucleosis in the surrounding community. Subsequently, outpatients treated in the emergency room requested tests, and persons from other towns came to this hospital for testing. From September 23 through October 7, 45 (45%) of 101 Monophile tests ordered were reported as positive.

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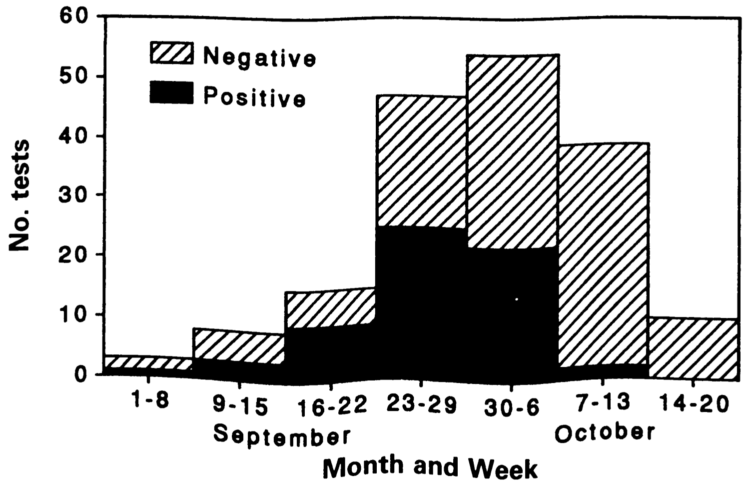
*Use of trade names is for identification only and does not imply endorsement by the Public Health Service or the U.S. Department of Health and Human Services.

FIGURE 1. Interpretation of heterophile agglutination tests for infectious mononucleosis processed at a community hospital, by week – Puerto Rico, September and October 1990



Pseudo-Outbreak — Continued

On October 8, the PRDH was informed of the outbreak, and an investigation began. All available hospital medical records were reviewed for persons who had tested positive (40 [70%] of 57 persons) and compared with a random sample of half the available medical records for persons who had tested negative (31 [46%] of 67 persons). All patients had listed telephone numbers on their records. They were called on October 8 within an 8-hour period, and a questionnaire was administered to the 28 persons who had tested positive and the 15 persons who had tested negative and who could be reached during that time. Twelve persons with positive tests had blood redrawn and tested at a reference laboratory in Puerto Rico using the same heterophile agglutination test.

Among the 28 persons who had tested positive, illness onset occurred during August 26–October 6. Symptoms included fever (85%), headache (70%), myalgia (70%), and pharyngitis (63%); two (7%) persons were asymptomatic. One patient had lymphadenopathy. Among persons for whom duration of illness was known, 24 were ill 1–15 days (mean: 9 days); one person was ill 27 days. Three persons attended one school, and six persons were employees of the hospital; no other common exposures were reported. The medical records for the 40 persons who tested positive showed that ages ranged from 5 to 55 years; 30% were aged 10–19 years. Twenty-two (55%) were male. Persons resided in five different towns, with 75% residing in the two towns nearest to the hospital. One person had the typical clinical presentation of infectious mononucleosis (i.e., fever, pharyngitis, and lymphadenopathy), and another person had a complete blood count (CBC) consistent with infectious mononucleosis (i.e., >10% atypical cells and >50% lymphocytes). Two (7%) persons were hospitalized for febrile illnesses of unknown origin before being tested for mononucleosis. Persons with negative test results had similar places of residence, dates of illness onset, age range, and symptoms as persons with positive test results.

All persons retested had onset of symptoms <2 weeks before the repeat blood was drawn. Only the person whose CBC was compatible with infectious mononucleosis had a positive retest.

Review of the laboratory procedures revealed no technical deficiencies. Tests had been run with controls. Proficiency testing using unknown positive and negative samples had been done correctly throughout the year, and the same reagent lot had been used during July–September. During July, 16% of the tests performed were reported as positive, and during August, 6% of the tests were reported as positive. However, during September, 50% of the tests were reported as positive. No reagents from this lot were available for testing elsewhere. On October 3, another heterophile test (Monosticon) was used. All 18 tests done in the morning were negative. That afternoon, after a new lot of the Monophile test arrived, the laboratory retested the 18 samples; four were positive. Before October 8, 52% of tests done with the new lot of Monophile were reported as positive.

Two technicians with limited experience had begun conducting the test on September 10; they reported positivity rates of 69% and 65%. During this same time, a technician who usually performed the test had a positivity rate of 53%. The inexperienced technicians interpreted some of the tests as weakly positive, an option that does not exist with this test.

During October 7–13, 39 tests were processed by other technicians who usually performed the tests; two (5%) were reported as positive. The following week, 10 tests were processed, none of which were reported as positive (Figure 1).

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Pseudo-Outbreak — Continued

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Editorial Note: The incubation period for infectious mononucleosis is 4–6 weeks, and person-to-person oropharyngeal transmission commonly occurs through saliva. More than 90% of mononucleosis syndromes are caused by Epstein-Barr virus (EBV), and an estimated 90%–95% of persons >21 years of age have antibody to EBV (*1,2*). In the United States, the disease occurs most often among older children and young adults; however, in certain socioeconomically depressed areas EBV infection most often occurs without symptoms among younger children.

The findings in this investigation are not consistent with an outbreak of infectious mononucleosis because 1) reported cases were not consistent with the incubation period and mode of spread of infectious mononucleosis and the probable high level of immunity to EBV already present in the community, 2) the distribution of cases is not concentrated in one geographic area, 3) the epidemiologic characteristics of persons with negative tests were similar to those with positive tests, 4) no person had both the clinical and hematologic findings consistent with infectious mononucleosis, and 5) repeat blood testing in a reference laboratory confirmed only one positive test of 12 tested.

Previous pseudo-outbreaks of infectious mononucleosis have been linked to laboratory error (*3,4*). False-positives can occur when blood from persons who have leukemia, rheumatoid arthritis, and viral infections other than infectious mononucleosis is tested or when samples of hemolyzed or contaminated blood are tested. However, the sensitivity of horse-cell agglutination tests such as Monophile to detect infectious mononucleosis is reportedly 96%, and the specificity, 93% (*5*). Heterophile tests do not directly measure EBV antibody and usually become positive 7–10 days after onset of symptoms and remain positive for ≤8 weeks (*5*). They are considered reliable routine diagnostic tests (*6*).

The two technicians who had recently begun to conduct the test may have misinterpreted results. However, one of the technicians who usually conducted the test also had a higher rate of positivity than reported by this laboratory for the 8 months before this pseudo-outbreak. This technician's test interpretations may have been influenced by the large increase in the number of tests processed and by the number of reportedly positive test results. Because different lots were used, it is unlikely this high rate of positivity was caused by bad reagents.

Diagnostic testing in a population with a low prevalence of the disease results in the test having a lower positive predictive value. In this investigation, the health-care professionals who made the diagnoses assumed that positive tests alone meant persons had infectious mononucleosis, beginning a cycle whereby, as more tests were reported as positive, more tests were requested. Past pseudo-outbreaks have had similar cycles (*3,4*).

All laboratory personnel should be appropriately trained and monitored. If a personnel change in a laboratory is followed by a change in the pattern of test results, these variations should be investigated by the laboratory supervisor. Physicians should use appropriate clinical criteria when ordering and interpreting diagnostic tests.

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Pseudo-Outbreak — Continued

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Effectiveness in Disease and Injury Prevention

County Data on Alcohol-Related Mortality — United States

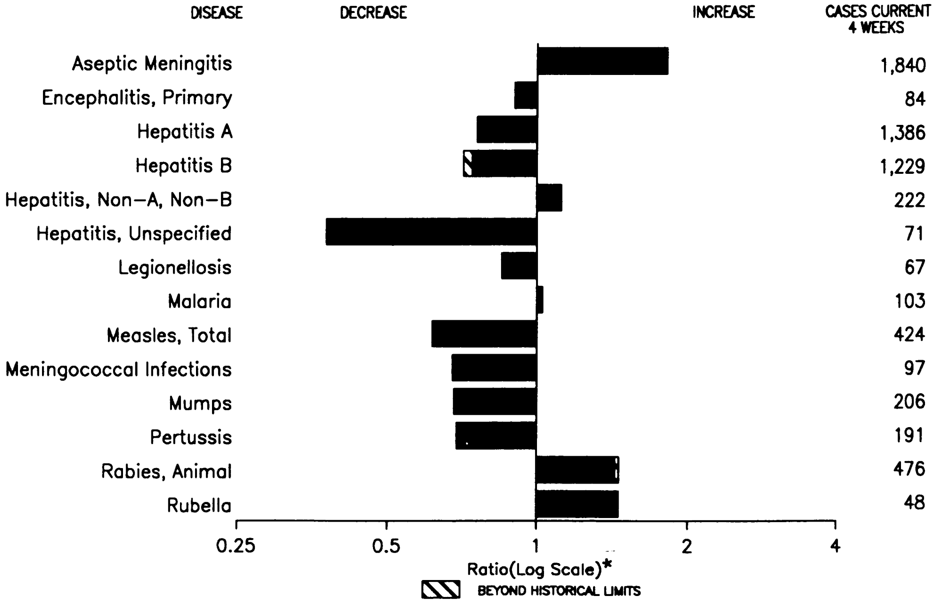
Although estimates of alcohol-related mortality (ARM) have been determined for the United States and selected states (*1–6*), the magnitude of ARM has not been well defined for smaller geographic areas. To provide additional geographically specific data, the Alcohol Epidemiologic Data System of the National Institute on Alcohol Abuse and Alcoholism recently released a reference manual for ARM in U.S. counties (*County Alcohol Problem Indicators* [*7*]). The manual provides information for 3107 counties for 1979–1985 using both underlying and multiple cause-of-death information. This report summarizes data sources, methods, and applications for the manual.

Data sources for the report included vital statistics from CDC's National Center for Health Statistics, population estimates from the Bureau of the Census, and estimates of alcohol-attributable fractions (AAFs) from the research literature. AAFs are estimates of the proportion of deaths from disease or injury diagnoses that are causally linked to alcohol use or misuse (*4,7,8*). Alcohol-related deaths were identified from death certificates based on the *International Classification of Diseases, Ninth Revision* (ICD-9) (*9*).

Data provided for each county include average death rates per 100,000 population for the following diseases and injuries: alcoholic psychoses (ICD-9 code 291), alcohol dependence syndrome (303, 265.2, 357.5, 425.5, and 535.3), nondependent abuse of alcohol (305.0), cirrhosis (571 and 572.3), alcohol poisoning (790.3 and E860), motor-vehicle crashes (E810–E825), suicide (E950–E958), and homicide (E960–E969). Application of AAFs to deaths from these diseases and injuries enabled estimation of ARM for each county. Estimates of ARM caused by alcohol-related diseases were also calculated based on multiple cause-of-death data. County rank within state and percentile rank within the United States based on these estimates and rates are provided. The number of alcohol-related disease deaths, based on multiple cause-of-death records, yields estimates of ARM that are 69% higher than those based on underlying cause only for the same diseases. These increases varied by disease and were less for cirrhosis (50%) and substantially more for alcohol dependence syndrome (150%). Because counties often have small populations with few alcohol-related deaths in any given year, population and mortality data for 5 years (1979, 1980, and 1983–1985) were averaged to develop more stable annual county death rates.

(Continued on page 561)

FIGURE I. Notifiable disease reports, comparison of 4-week totals ending August 10, 1991, with historical data — United States



*Ratio of current 4-week total to mean of 15 4-week totals (from previous, comparable, and subsequent 4-week periods for the past 5 years). The point where the hatched area begins is based on the mean and two standard deviations of these 4-week totals.

TABLE I. Summary — cases of specified notifiable diseases, United States, cumulative, week ending August 10, 1991 (32nd Week)

	Cum. 1991		Cum. 1991
AIDS	26,053	Measles: imported	139
Anthrax	-	indigenous	7,609
Botulism: Foodborne	11	Plague	1
Infant	38	Poliomyelitis, Paralytic*	-
Other	4	Psittacosis	55
Brucellosis	42	Rabies, human	-
Cholera	15	Syphilis, primary & secondary	24,979
Congenital rubella syndrome	13	Syphilis, congenital, age < 1 year	12
Diphtheria	2	Tetanus	24
Encephalitis, post-infectious	55	Toxic shock syndrome	187
Gonorrhea	354,537	Trichinosis	52
Haemophilus influenzae (invasive disease)	1,985	Tuberculosis	13,500
Hansen Disease	93	Tularemia	94
Leptospirosis	37	Typhoid fever	230
Lyme Disease	4,385	Typhus fever, tickborne (RMSF)	318

*Three suspected cases of poliomyelitis have been reported in 1991; none of the 8 suspected cases in 1990 have been confirmed to date. Five of 13 suspected cases in 1989 were confirmed and all were vaccine associated.

TABLE II. Cases of selected notifiable diseases, United States, weeks ending August 10, 1991, and August 11, 1990 (32nd Week)

Reporting Area	AIDS	Aseptic Menin-gitis	Encephalitis		Gonorrhea		Hepatitis (Viral), by type				Legionel-losis	Lyme Disease
			Primary	Post-in-fectious			A	B	NA,NB	Unspeci-fied		
	Cum. 1991	Cum. 1991	Cum. 1991	Cum. 1991	Cum. 1991	Cum. 1990	Cum. 1991	Cum. 1991	Cum. 1991	Cum. 1991	Cum. 1991	Cum. 1991
UNITED STATES	26,053	5,702	455	55	354,537	413,555	14,707	10,118	1,806	801	683	4,385
NEW ENGLAND	1,004	456	19	1	8,651	11,212	359	534	51	22	47	818
Maine	38	15	3	-	107	134	15	15	2	-	2	-
N.H.	27	54	3	-	154	135	23	17	5	-	3	25
Vt.	15	157	2	-	33	34	19	6	5	-	2	4
Mass.	589	109	9	1	3,544	4,525	177	378	27	19	37	68
R.I.	38	114	-	-	716	690	66	17	10	3	3	77
Conn.	297	7	2	-	4,097	5,694	59	101	2	-	-	644
MID. ATLANTIC	7,017	782	36	10	42,089	56,021	1,372	901	179	14	196	2,633
Upstate N.Y.	906	390	16	6	7,757	8,269	568	356	112	8	69	1,647
N.Y. City	3,884	126	-	-	15,199	23,527	436	115	5	-	20	-
N.J.	1,474	-	-	-	7,344	9,657	176	221	34	-	21	528
Pa.	753	266	20	4	11,789	14,568	192	209	28	6	86	458
E.N. CENTRAL	1,839	1,013	127	7	65,789	78,178	1,878	1,179	297	39	136	136
Ohio	366	370	46	2	20,348	23,894	257	268	132	16	65	78
Ind.	182	103	12	1	7,013	6,793	269	154	1	1	13	7
Ill.	840	168	33	4	19,656	24,896	812	173	41	3	13	5
Mich.	337	345	33	-	14,989	17,118	207	362	79	19	31	46
Wis.	114	27	3	-	3,783	5,477	333	222	44	-	14	-
W.N. CENTRAL	655	342	23	7	17,677	21,255	1,504	441	188	15	32	144
Minn.	141	45	13	-	1,720	2,604	243	48	12	2	5	30
Iowa	66	73	-	4	1,253	1,507	37	32	8	3	9	11
Mo.	346	164	6	3	10,753	12,848	409	290	163	7	11	98
N. Dak.	4	2	1	-	30	80	32	4	2	1	1	-
S. Dak.	1	5	2	-	212	139	561	4	1	-	3	-
Nebr.	38	18	-	-	1,151	986	167	25	1	-	3	-
Kans.	59	35	1	-	2,558	3,091	55	38	1	2	-	5
S. ATLANTIC	6,274	1,137	93	22	108,545	118,454	1,061	2,081	254	161	115	309
Del.	46	30	2	-	1,593	1,873	7	33	4	2	2	32
Md.	604	93	16	1	11,026	13,096	188	258	47	13	23	118
D.C.	427	40	1	-	5,935	8,034	53	90	1	1	4	-
Va.	468	153	25	3	10,133	11,123	107	120	22	110	7	60
W. Va.	39	16	7	-	749	751	16	37	2	7	-	19
N.C.	318	137	22	-	22,052	18,964	107	318	87	-	13	48
S.C.	209	29	-	-	8,829	9,472	28	448	16	3	23	4
Ga.	787	178	6	2	26,233	26,206	128	312	31	-	12	16
Fla.	3,376	461	14	16	21,995	28,935	427	465	44	25	31	12
E.S. CENTRAL	626	420	23	-	33,619	34,638	148	839	230	3	38	76
Ky.	105	86	5	-	3,666	4,120	22	112	5	2	14	29
Tenn.	204	135	13	-	12,163	10,160	92	623	208	-	10	35
Ala.	196	171	5	-	9,111	11,963	28	95	13	1	13	12
Miss.	121	28	-	-	8,679	8,395	6	9	4	-	1	-
W.S. CENTRAL	2,552	815	52	1	39,825	43,976	2,083	1,367	74	163	27	51
Ark.	113	47	15	-	4,859	5,443	201	67	1	5	7	16
La.	450	75	9	-	9,490	8,181	86	180	6	5	5	1
Okla.	110	1	3	-	4,164	3,856	180	143	31	11	6	26
Tex.	1,879	692	25	1	21,312	26,496	1,616	977	36	142	9	8
MOUNTAIN	745	109	12	2	7,512	8,612	2,356	632	94	99	47	10
Mont.	21	2	1	-	66	110	62	46	4	5	2	-
Idaho	12	-	-	-	85	83	63	47	1	-	3	-
Wyo.	11	-	-	-	61	112	90	6	-	-	-	8
Colo.	272	36	3	1	2,149	2,265	366	92	38	17	8	-
N. Mex.	59	12	-	-	675	780	609	141	9	27	1	-
Ariz.	148	32	8	1	2,797	3,389	740	115	12	39	19	-
Utah	76	12	-	-	202	253	192	51	11	11	4	-
Nev.	146	15	-	-	1,477	1,620	234	134	19	-	10	2
PACIFIC	5,341	628	70	5	30,830	41,209	3,946	2,144	439	285	45	208
Wash.	352	-	6	1	2,736	3,683	384	282	96	16	1	1
Oreg.	166	-	-	-	1,252	1,616	247	205	79	8	1	-
Calif.	4,696	569	62	4	25,872	34,743	3,209	1,602	247	260	41	207
Alaska	15	25	2	-	493	735	84	25	13	1	-	-
Hawaii	112	34	-	-	477	432	22	30	4	-	2	-
Guam	2	-	-	-	-	178	-	-	-	-	-	-
P.R.	860	171	2	2	386	460	68	302	136	40	-	-
V.I.	12	-	-	-	265	259	1	8	-	-	-	-
Amer. Samoa	-	-	-	-	-	53	-	-	-	-	-	-
C.N.M.I.	-	-	-	-	-	145	-	-	-	-	-	-

N: Not notifiable U: Unavailable C.N.M.I.: Commonwealth of the Northern Mariana Islands

TABLE II. (Cont'd.) Cases of selected notifiable diseases, United States, weeks ending August 10, 1991, and August 11, 1990 (32nd Week)

Reporting Area	Malaria	Measles (Rubeola)					Menin-gococcal Infections	Mumps		Pertussis			Rubella		
		Indigenous		Imported*		Total									
	Cum. 1991	1991	Cum. 1991	1991	Cum. 1991	Cum. 1990	Cum. 1991	1991	Cum. 1991	1991	Cum. 1991	Cum. 1990	1991	Cum. 1991	Cum. 1990
UNITED STATES	650	56	7,609	-	139	18,121	1,406	82	2,882	60	1,321	2,165	5	1,068	692
NEW ENGLAND	43	-	46	-	10	279	100	-	21	8	205	243	-	4	7
Maine	1	-	2	-	-	29	7	-	-	1	46	10	-	-	-
N.H.	2	-	-	-	-	8	11	-	3	-	17	31	-	1	1
Vt.	1	-	5	-	-	1	12	-	2	-	3	6	-	-	-
Mass.	20	-	19	-	8	24	54	-	1	7	123	180	-	2	2
R.I.	7	-	2	-	-	30	-	-	3	-	-	2	-	-	1
Conn.	12	-	18	-	2	187	16	-	12	-	16	14	-	1	3
MID. ATLANTIC	94	25	4,087	-	6	1,254	143	-	205	4	111	348	1	559	5
Upstate N.Y.	26	-	325	-	4	310	77	-	78	4	78	268	1	537	4
N.Y. City	35	25	1,625	-	-	291	8	-	-	-	-	-	-	-	-
N.J.	25	-	603	-	1	282	30	-	54	-	1	23	-	-	-
Pa.	8	-	1,534	-	1	371	28	-	73	-	32	57	-	22	1
E.N. CENTRAL	56	1	68	-	10	3,383	222	2	264	10	222	597	-	173	30
Ohio	12	-	1	-	2	439	75	2	60	5	82	116	-	147	1
Ind.	3	1	1	-	1	410	17	-	6	3	50	82	-	1	-
Ill.	23	-	25	-	-	1,311	65	-	103	-	41	217	-	4	18
Mich.	16	-	39	-	-	473	46	-	79	-	23	53	-	20	9
Wis.	2	-	2	-	7	750	19	-	16	2	26	129	-	1	2
W.N. CENTRAL	21	-	30	-	5	781	79	6	87	7	98	94	-	16	14
Minn.	6	-	5	-	5	307	16	4	13	6	41	18	-	6	9
Iowa	4	-	15	-	-	24	8	-	15	1	11	11	-	5	4
Mo.	6	-	-	-	-	97	29	-	26	-	30	54	-	5	-
N. Dak.	1	-	-	-	-	-	1	-	2	-	2	1	-	-	1
S. Dak.	-	-	-	-	-	23	2	1	1	-	3	1	-	-	-
Nebr.	-	-	1	-	-	106	6	1	6	-	5	2	-	-	-
Kans.	4	-	9	-	-	224	17	-	24	-	6	7	-	-	-
S. ATLANTIC	136	3	423	-	17	1,068	262	11	1,032	4	145	176	-	12	16
Del.	2	-	21	-	-	11	2	-	6	-	-	6	-	-	-
Md.	38	3	175	-	-	207	29	2	196	1	34	42	-	6	2
D.C.	8	-	-	-	-	22	7	-	21	-	-	14	-	1	1
Va.	25	U	24	U	4	72	26	U	43	U	16	14	U	-	1
W. Va.	2	-	-	-	-	6	12	-	16	-	8	14	-	-	-
N.C.	9	-	36	-	3	30	49	7	214	1	22	40	-	2	-
S.C.	8	-	12	-	-	4	27	-	343	-	9	5	-	-	-
Ga.	16	-	10	-	4	184	53	-	36	-	24	23	-	-	-
Fla.	28	-	145	-	6	532	57	2	157	2	32	18	-	3	12
E.S. CENTRAL	12	-	6	-	1	149	97	1	155	3	49	102	-	100	2
Ky.	2	-	1	-	1	32	37	-	-	-	-	-	-	-	-
Tenn.	6	-	5	-	-	70	28	1	127	-	17	45	-	100	2
Ala.	4	-	-	-	-	21	31	-	8	3	32	51	-	-	-
Miss.	-	-	-	-	-	26	1	-	20	-	-	6	-	-	-
W.S. CENTRAL	42	1	145	-	14	3,975	100	4	309	5	40	45	-	5	4
Ark.	5	-	-	-	5	42	15	-	39	-	4	2	-	1	3
La.	8	-	-	-	-	10	23	-	21	1	10	17	-	-	-
Okla.	4	-	-	-	-	172	13	-	12	4	20	26	-	-	1
Tex.	25	1	145	-	9	3,751	49	4	237	-	6	-	-	4	-
MOUNTAIN	25	7	930	-	17	830	57	1	276	-	142	196	-	6	103
Mont.	1	-	-	-	-	1	9	-	-	-	2	26	-	-	13
Idaho	2	7	394	-	2	25	7	-	8	-	21	35	-	2	49
Wyo.	-	-	1	-	2	15	1	-	3	-	3	-	-	-	-
Colo.	8	-	1	-	4	133	11	-	116	-	66	73	-	-	4
N. Mex.	5	-	117	-	5	91	8	N	N	-	22	14	-	-	-
Ariz.	7	-	274	-	-	286	15	1	124	-	8	34	-	-	30
Utah	1	-	125	-	4	71	-	-	13	-	18	10	-	-	1
Nev.	1	-	18	-	-	208	6	-	12	-	2	4	-	4	6
PACIFIC	221	19	1,874	-	59	6,402	346	57	533	19	309	364	4	193	511
Wash.	17	-	46	-	15	254	42	53	141	12	81	86	-	8	-
Oreg.	5	7	41	-	29	209	45	N	N	2	42	38	-	2	9
Calif.	195	12	1,783	-	11	5,847	251	3	363	4	141	206	4	180	492
Alaska	-	-	-	-	1	80	7	1	10	-	12	4	-	-	-
Hawaii	4	-	4	-	3	12	1	-	19	1	33	30	-	3	10
Guam	-	U	-	U	-	1	-	U	-	U	-	-	U	-	-
P.R.	1	3	91	-	1	1,259	15	-	9	1	32	5	-	1	-
V.I.	2	-	-	-	2	21	-	-	8	-	-	-	-	-	-
Amer. Samoa	-	U	-	U	-	377	-	U	-	U	-	-	U	-	-
C.N.M.I.	-	U	-	U	-	-	-	U	-	U	-	4	U	-	-

*For measles only, imported cases includes both out-of-state and international importations.

N: Not notifiable U: Unavailable †International §Out-of-state

TABLE II. (Cont'd.) Cases of selected notifiable diseases, United States, weeks ending August 10, 1991, and August 11, 1990 (32nd Week)

Reporting Area	Syphilis (Primary & Secondary)		Toxic-shock Syndrome	Tuberculosis		Tula-remia	Typhoid Fever	Typhus Fever (Tick-borne) (RMSF)	Rabies, Animal
	Cum. 1991	Cum. 1990	Cum. 1991	Cum. 1991	Cum. 1990	Cum. 1991	Cum. 1991	Cum. 1991	Cum. 1991
UNITED STATES	24,979	29,931	187	13,500	14,098	94	230	318	3,770
NEW ENGLAND	667	1,094	10	358	310	1	26	5	33
Maine	-	5	4	27	-	-	1	-	-
N.H.	12	43	1	5	3	-	1	-	1
Vt.	1	1	-	4	7	-	-	-	-
Mass.	309	421	5	179	166	1	23	4	-
R.I.	37	9	-	27	43	-	-	-	-
Conn.	308	615	-	116	91	-	1	1	32
MID. ATLANTIC	4,028	6,095	29	3,103	3,429	1	43	8	1,238
Upstate N.Y.	103	528	13	201	261	1	9	6	444
N.Y. City	1,975	2,786	1	1,942	2,143	-	21	-	-
N.J.	845	1,013	-	543	575	-	10	1	572
Pa.	1,105	1,768	15	417	450	-	3	1	222
E.N. CENTRAL	2,948	2,077	38	1,358	1,346	3	14	25	82
Ohio	400	333	19	189	227	-	2	15	11
Ind.	86	50	-	113	117	-	-	7	7
Ill.	1,393	843	11	720	679	1	4	2	16
Mich.	770	618	8	273	267	2	7	1	17
Wis.	299	233	-	63	56	-	1	-	31
W.N. CENTRAL	439	309	32	320	348	35	2	26	558
Minn.	45	53	7	61	61	1	2	-	197
Iowa	40	39	6	47	35	-	-	1	103
Mo.	307	157	10	138	169	30	-	16	11
N. Dak.	-	1	-	4	14	-	-	-	66
S. Dak.	1	1	1	24	9	3	-	1	140
Nebr.	11	8	1	11	15	-	-	3	11
Kans.	35	50	7	35	45	1	-	5	30
S. ATLANTIC	7,577	9,633	16	2,557	2,620	4	43	130	904
Del.	97	107	1	16	28	-	-	-	100
Md.	615	727	1	237	203	-	8	16	345
D.C.	478	639	1	118	91	-	2	-	7
Va.	549	561	3	219	231	-	8	6	164
W. Va.	20	10	-	42	47	-	1	3	38
N.C.	1,182	1,120	7	340	347	1	2	63	6
S.C.	938	600	-	248	293	1	-	27	66
Ga.	1,871	2,432	-	522	424	1	5	14	154
Fla.	1,827	3,437	3	815	956	1	17	1	24
E.S. CENTRAL	2,761	2,582	9	971	1,035	9	2	57	113
Ky.	52	51	4	219	252	3	2	17	31
Tenn.	962	1,043	5	323	277	6	-	30	29
Ala.	970	786	-	243	316	-	-	10	53
Miss.	777	702	-	186	190	-	-	-	-
W.S. CENTRAL	4,557	4,923	7	1,585	1,698	28	15	60	436
Ark.	386	339	3	141	213	19	-	11	26
La.	1,552	1,519	-	155	201	-	2	-	4
Okla.	111	150	4	106	119	9	-	49	127
Tex.	2,508	2,915	-	1,183	1,165	-	13	-	279
MOUNTAIN	356	563	25	373	304	9	5	5	126
Mont.	6	-	-	6	10	7	-	4	24
Idaho	3	6	-	4	8	-	-	-	1
Wyo.	6	1	-	3	4	1	-	-	57
Colo.	55	36	5	33	13	1	1	1	10
N. Mex.	21	29	6	48	70	-	-	-	2
Ariz.	224	400	4	203	142	-	3	-	24
Utah	5	6	10	30	18	-	-	-	4
Nev.	36	85	-	46	39	-	1	-	4
PACIFIC	1,646	2,655	21	2,875	3,008	4	80	2	280
Wash.	111	257	3	185	171	2	4	1	1
Oreg.	49	91	-	69	77	1	3	1	4
Calif.	1,478	2,280	18	2,464	2,620	1	70	-	271
Alaska	4	12	-	35	34	-	-	-	3
Hawaii	4	15	-	122	106	-	3	-	1
Guam	-	2	-	-	32	-	-	-	-
P.R.	291	204	-	141	66	-	9	-	40
V.I.	75	5	-	2	4	-	-	-	-
Amer. Samoa	-	-	-	-	11	-	-	-	-
C.N.M.I.	-	1	-	-	40	-	-	-	-

U: Unavailable

TABLE III. Deaths in 121 U.S. cities,* week ending August 10, 1991 (32nd Week)

Reporting Area	All Causes, By Age (Years)						P&I**
	All Ages	≥65	45-64	25-44	1-24	<1	Total
NEW ENGLAND	578	388	115	42	17	16	30
Boston, Mass.	169	106	38	16	4	5	8
Bridgeport, Conn.	38	26	5	5	2	-	4
Cambridge, Mass.	24	19	4	1	-	-	2
Fall River, Mass.	25	19	5	1	-	-	-
Hartford, Conn.	59	38	13	3	-	5	3
Lowell, Mass.	29	23	3	3	-	-	2
Lynn, Mass.	10	4	3	1	2	-	-
New Bedford, Mass.	20	11	5	2	1	1	1
New Haven, Conn.	34	22	7	1	2	2	-
Providence, R.I.	31	22	8	1	-	-	-
Somerville, Mass.	4	4	-	-	-	-	2
Springfield, Mass.	48	33	7	4	3	1	4
Waterbury, Conn.	33	23	7	2	1	-	2
Worcester, Mass.	54	38	10	2	2	2	2
MID. ATLANTIC	2,624	1,673	519	305	59	66	129
Albany, N.Y.	58	42	11	-	4	1	3
Allentown, Pa.	19	11	6	1	1	-	-
Buffalo, N.Y.	119	62	24	13	15	5	5
Camden, N.J.	30	23	5	1	-	1	-
Elizabeth, N.J.	19	11	3	5	-	-	-
Erie, Pa.†	47	35	6	2	3	1	3
Jersey City, N.J.	58	38	11	5	1	2	2
New York City, N.Y.	1,455	875	301	221	25	33	60
Newark, N.J.	68	47	16	5	-	-	4
Paterson, N.J.	27	17	2	3	-	5	4
Philadelphia, Pa.	306	211	55	26	5	8	15
Pittsburgh, Pa.†	62	44	10	5	-	3	5
Reading, Pa.	33	29	2	1	1	-	6
Rochester, N.Y.	116	79	25	6	2	4	12
Schenectady, N.Y.	37	23	8	3	2	1	1
Scranton, Pa.†	30	23	5	2	-	-	-
Syracuse, N.Y.	69	49	17	1	-	2	3
Trenton, N.J.	29	20	4	5	-	-	2
Utica, N.Y.	17	15	2	-	-	-	2
Yonkers, N.Y.	25	19	6	-	-	-	2
E.N. CENTRAL	2,055	1,237	386	244	132	56	96
Akron, Ohio	43	31	9	3	-	-	-
Canton, Ohio	41	32	3	4	1	1	6
Chicago, Ill.	494	212	97	103	67	15	13
Cincinnati, Ohio	118	73	23	8	13	1	10
Cleveland, Ohio	142	91	29	15	3	4	3
Columbus, Ohio	137	90	28	12	4	3	1
Dayton, Ohio	100	70	19	5	4	2	7
Detroit, Mich.	233	129	51	34	12	7	6
Evansville, Ind.	54	41	8	4	1	-	4
Fort Wayne, Ind.	52	38	8	4	1	1	5
Gary, Ind.	19	8	5	6	-	-	-
Grand Rapids, Mich.	43	35	6	1	-	1	8
Indianapolis, Ind.	168	103	36	16	6	7	9
Madison, Wis.	28	19	2	3	3	1	1
Milwaukee, Wis.	111	82	14	7	5	3	9
Peoria, Ill.	47	34	4	6	2	1	2
Rockford, Ill.	40	22	12	4	-	2	1
South Bend, Ind.	44	31	10	2	-	1	6
Toledo, Ohio	96	65	14	4	8	5	3
Youngstown, Ohio	45	31	8	3	2	1	2
W.N. CENTRAL	786	535	139	51	32	29	40
Des Moines, Iowa	74	59	10	2	1	2	2
Duluth, Minn.	30	21	5	2	2	-	1
Kansas City, Kans.	41	20	9	7	2	3	1
Kansas City, Mo.	106	64	21	10	6	5	1
Lincoln, Nebr.	22	18	3	-	-	1	1
Minneapolis, Minn.	160	110	36	5	6	3	21
Omaha, Nebr.	84	59	14	6	3	2	4
St. Louis, Mo.	138	92	24	8	5	9	4
St. Paul, Minn.	65	46	7	10	-	2	4
Wichita, Kans.	66	46	10	1	7	2	1

Reporting Area	All Causes, By Age (Years)						P&I**
	All Ages	≥65	45-64	25-44	1-24	<1	Total
S. ATLANTIC	1,067	629	239	117	41	41	39
Atlanta, Ga.	116	65	20	18	5	8	1
Baltimore, Md.	130	83	26	16	3	2	8
Charlotte, N.C.	68	43	13	7	2	3	1
Jacksonville, Fla.	129	68	35	12	4	10	11
Miami, Fla.	111	60	30	14	6	1	1
Norfolk, Va.	51	28	10	7	3	3	1
Richmond, Va.	57	33	16	7	-	1	4
Savannah, Ga.	36	25	8	1	2	-	1
St. Petersburg, Fla.	53	37	10	3	-	3	-
Tampa, Fla.	151	94	29	16	7	5	9
Washington, D.C.	145	77	40	14	9	5	1
Wilmington, Del.	20	16	2	2	-	-	1
E.S. CENTRAL	742	479	162	59	26	14	50
Birmingham, Ala.	115	70	27	7	9	2	4
Chattanooga, Tenn.	63	46	11	4	2	-	6
Knoxville, Tenn.	76	50	16	7	2	1	7
Louisville, Ky.	81	50	18	7	4	2	7
Memphis, Tenn.	183	117	41	14	3	6	15
Mobile, Ala.	51	32	11	6	1	1	2
Montgomery, Ala.	50	32	14	3	1	-	-
Nashville, Tenn.	123	82	24	11	4	2	9
W.S. CENTRAL	1,215	690	274	150	62	39	37
Austin, Tex.	59	34	9	8	7	1	8
Baton Rouge, La.	32	19	7	3	2	1	-
Corpus Christi, Tex.	38	23	9	3	1	2	1
Dallas, Tex.	196	107	40	28	8	13	3
El Paso, Tex.	62	40	10	8	2	2	-
Ft. Worth, Tex.	87	53	17	8	4	5	3
Houston, Tex.	240	113	74	38	13	2	9
Little Rock, Ark.	65	39	17	5	4	-	-
New Orleans, La.	127	77	24	14	10	2	-
San Antonio, Tex.	164	92	38	20	9	5	7
Shreveport, La.	48	33	10	3	-	2	2
Tulsa, Okla.	97	60	19	12	2	4	4
MOUNTAIN	719	440	143	70	38	27	37
Albuquerque, N.M.	78	51	15	9	1	2	2
Colo. Springs, Colo.	46	25	10	5	5	1	4
Denver, Colo.	129	77	21	14	10	7	9
Las Vegas, Nev.	132	77	30	14	8	2	7
Ogden, Utah	22	13	7	-	1	1	2
Phoenix, Ariz.	135	79	26	17	5	8	3
Pueblo, Colo.	20	11	8	-	-	1	1
Salt Lake City, Utah	44	29	5	-	7	3	3
Tucson, Ariz.	113	78	21	11	1	2	6
PACIFIC	1,725	1,096	328	202	52	43	97
Berkeley, Calif.	20	10	5	3	1	1	1
Fresno, Calif.	65	40	8	7	4	6	3
Glendale, Calif.	23	17	2	3	1	-	-
Honolulu, Hawaii	80	51	16	10	2	1	5
Long Beach, Calif.	86	48	15	13	6	3	4
Los Angeles, Calif.	474	289	105	56	18	4	24
Oakland, Calif.§	U	U	U	U	U	U	U
Pasadena, Calif.	28	21	5	1	1	-	3
Portland, Oreg.	124	83	19	16	3	2	6
Sacramento, Calif.	147	104	21	12	5	5	13
San Diego, Calif.	114	72	20	16	3	3	11
San Francisco, Calif.	157	95	37	21	2	2	7
San Jose, Calif.	154	100	24	21	4	5	10
Seattle, Wash.	116	72	27	14	-	3	1
Spokane, Wash.	54	41	5	2	1	5	4
Tacoma, Wash.	83	53	19	7	1	3	5
TOTAL	11,511††	7,167	2,305	1,240	459	331	555

*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 3 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.
§Report for this week is unavailable (U).

Alcohol-Related Mortality — Continued

The manual compares ARM across counties within a state and throughout the United States. Counties in the lowest U.S. percentile rank averaged fewer than five deaths that mention an alcohol-related disease per 100,000 persons, and counties in the highest percentile rank averaged more than 55 deaths per 100,000.

Determining the percentile rank of each county can assist in ranking metropolitan areas that overlap state boundaries, such as the tristate metropolitan area that includes New York City and parts of Connecticut and New Jersey. Based on U.S. percentile ranks, New York City (comprising the Bronx, Brooklyn, Manhattan, Queens, and Staten Island) and New Jersey's Essex and Hudson counties ranked in the highest 10% of U.S. counties for ARM (Figure 1).

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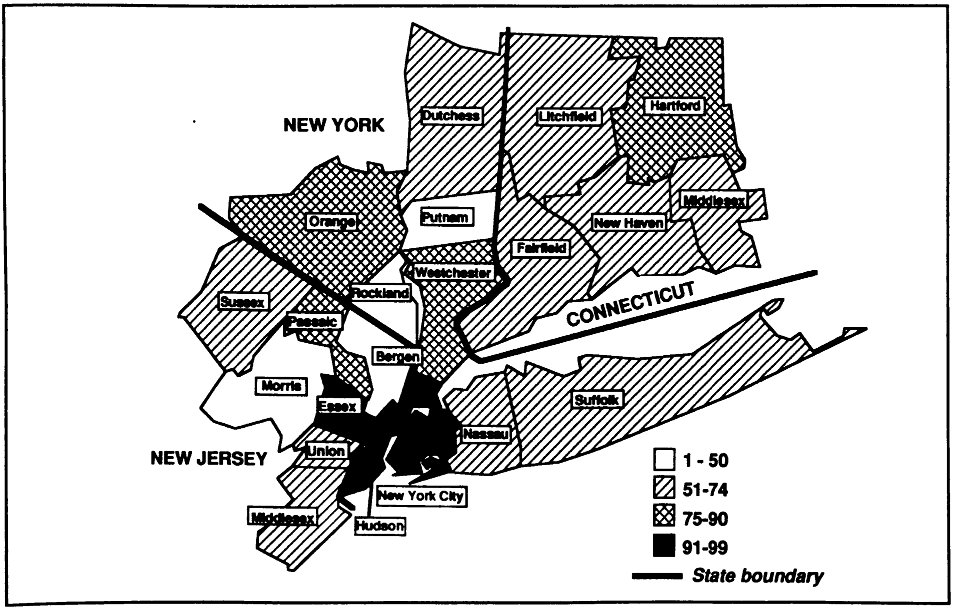
Editorial Note: The estimates presented in *County Alcohol Problem Indicators* use mortality data that are routinely collected at the county level. The alcohol-related conditions used in this analysis are based on a subset of specific causes of death for which AAFs are available, thereby producing conservative estimates of ARM (a national average of 54,000–83,000 deaths per year for 1979–1985). Other approaches to estimating ARM have used more comprehensive sets of diagnoses, resulting in less conservative definitions of AAF and producing larger estimates (e.g., 105,000 deaths in 1987 [*4*]).

FIGURE 1. U.S. percentile ranks for alcohol-related mortality* — Connecticut-New Jersey-New York metropolitan area, 1979–1985



*Based on multiple cause-of-death data.

Alcohol-Related Mortality — Continued

Mortality data are a readily available and routinely measured indicator that permit analysis at the county level. These data, in conjunction with other county-level characteristics, can be used by state and local program planners and other health officials in assessing community service requirements for prevention and treatment services for alcohol-related disease. For example, the Iowa Department of Public Health used county rankings of ARM to develop a comprehensive state plan for substance abuse for 1986–1987 (*10*). These data can also be used to monitor local conditions relevant to prevention efforts identified in the year 2000 health objectives (*11*).

County Alcohol Problem Indicators is available from the Alcohol Epidemiologic Data System, c/o CSR, Inc., 1400 Eye Street, NW, Suite 600, Washington, DC 20005.

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Current Trends

Update: Cholera — Western Hemisphere, and Recommendations for Treatment of Cholera

Epidemic cholera appeared in Peru in January 1991 and subsequently spread to Ecuador, Colombia, Chile, Brazil, Mexico, and Guatemala (Table 1) (*1–3*). Cholera can be a severe, life-threatening illness but is highly preventable and easily treated; however, few health-care practitioners in the United States have experience identifying and treating cholera. This report provides an update on cholera in the Western Hemisphere and provides recommendations on the clinical diagnosis and treatment of cholera in the United States.

Cholera — Continued

As of August 12, 15 epidemic-associated *Vibrio cholerae* infections have occurred in the United States (*4,5*); no secondary spread from these cases has occurred. Since 1973, 65 cholera cases unrelated to the Latin American epidemic have occurred in the United States that were caused by the Gulf Coast strain of toxigenic *V. cholerae* serotype O1; most cases were related to the consumption of raw and undercooked shellfish from the Gulf of Mexico (*6*). In addition, approximately two cases of cholera are reported each year among travelers returning to the United States from non-Western Hemisphere countries.

In July, toxigenic *V. cholerae* O1 resembling the Latin American strain was isolated by Food and Drug Administration (FDA) researchers from oysters taken from closed oyster beds in Mobile Bay, Alabama, off the Gulf of Mexico. No human illness has been associated with these oysters, and further sampling of commercial seafoods from the Gulf by the FDA has not identified other foci of contamination.

Reported by: Enteric Diseases Br, Div of Bacterial and Mycotic Diseases, National Center for Infectious Diseases, CDC.

Editorial Note: Proper treatment of sewage and drinking water in the United States should prevent transmission of cholera by these routes within the United States. Because of the considerable travel between Latin America and the United States, and because of the presence of the Gulf Coast strain, additional cases of cholera may occur. With clinical awareness of signs and symptoms of cholera, and knowledge of appropriate treatment, cholera should not pose a major risk to health in the United States.

Microbiology. Cholera is caused by *V. cholerae* serogroup O1 strains that produce cholera toxin. The Latin American epidemic strain is biotype El Tor, serotype Inaba. This strain can be distinguished from the strain of *V. cholerae* O1 that is endemic to the U.S. Gulf Coast by hemolysin production and by molecular subtyping techniques (*7*).

Clinical Suspicion. Cholera should be suspected in a patient with severe watery diarrhea, vomiting, and dehydration. The illness is often accompanied by marked leg cramps, caused by electrolyte disturbances. However, the spectrum of *V. cholerae* O1 infection ranges from asymptomatic infection (75% of infections) through mild

TABLE 1. Cholera cases reported to the Pan American Health Organization — Western Hemisphere, as of August 7, 1991

Country	No. cases*	No. hospitalized	No. deaths	Date of report
Peru	238,261	92,022	2,387	Aug 1
Ecuador	31,881	24,361	505	Jul 13
Colombia	4,279	3,166	76	Jul 30
Mexico	257	69	2	Jul 27
Chile	41	NR†	2	Jul 22
Brazil	31	19	0	Jul 27
United States	14	7	0	Jul 30
Guatemala	3	NR	0	Jul 24
Canada	1§	NR	0	Jul 19
Total	**274,768**	**119,644**	**2,972**	

*Probable and confirmed cases.
†Not reported.
§Associated with travel to non-Western Hemisphere countries with cholera.

Cholera — Continued

diarrhea to the most severe and clinically recognizable form (5%). Clinical suspicion should be increased for persons returning from areas known to have epidemic cholera or for persons with a recent history of ingestion of raw or undercooked shellfish.

Diagnosis. Cholera is diagnosed by isolation of toxigenic *V. cholerae* serotype O1 from feces. Other serogroups of *V. cholerae,* and nontoxigenic *V. cholerae* O1, may be isolated from stools of patients with diarrhea, but these bacteria are not associated with epidemic cholera. Culture of rectal swabs or fecal specimens on thiosulfate citrate bile salts sucrose (TCBS) medium should be requested for any patient suspected to have cholera. Suspected isolates of *V. cholerae* should be submitted to public health laboratories for confirmation. Serologic diagnosis may also be made by the presence of a changing titer of vibriocidal antibodies.

Treatment. Patients suspected of having cholera should be treated aggressively while awaiting culture results. In both adults and children, fluid and electrolyte losses should be replaced by rehydration therapy. All but severely dehydrated adults and children can be managed largely or completely with oral rehydration solution (ORS) (*8*). Patients with mild to moderate vomiting will absorb ORS taken in small sips. At present, World Health Organization ORS packets (WHO-ORS,* Jianas Brothers, St. Louis), Ricelyte™ (Mead Johnson), and Rehydralyte® (Ross Laboratories) are the only oral solutions available in the United States that contain the proper balance of electrolytes for treating cholera. WHO-ORS is available from the manufacturer; the other two products are available over the counter. If ORS is not available, rehydration therapy should begin with intravenous fluids.

Intravenous therapy is necessary for patients who are severely dehydrated or in hypovolemic shock. The severely dehydrated cholera patient may have lost more than 10% of body weight and will need rapid volume replacement with Ringer's Lactate solution, the only solution readily available in the United States with the electrolyte composition needed for treating cholera (*9,10*). Normal saline is less effective for treatment but can be used if Ringer's Lactate is unavailable (*10*). Severely dehydrated adults may require several liters of fluid immediately to restore an adequate circulating volume. As soon as the patient is hemodynamically stable, oral therapy may be substituted. Patients with cholera have substantial on-going fluid losses that also need to be replaced.

Antimicrobial drugs are a useful adjunctive therapy, decreasing the duration of both diarrhea and bacterial shedding and diminishing the volume of fluid replacement needed for treatment. Antibiotics with demonstrated effectiveness include doxycycline, tetracycline, trimethoprim-sulfamethoxazole (TMP-SMX), erythromycin, and furazolidone (*9,10*). Adults may be treated with a single 300-mg dose of doxycycline. Children may be given TMP-SMX twice a day for 3 days at a dose of 5 mg/kg of TMP and 25 mg/kg of SMX.

Management of Family Contacts. Family members of persons suspected to have cholera should be questioned concerning their health status and advised to seek medical attention immediately if they develop watery diarrhea during the week following illness onset in the index patient. Because secondary transmission in the United States is rare, chemoprophylaxis of family contacts is not necessary. Cholera

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*Use of trade names is for identification only and does not imply endorsement by the Public Health Service or the U.S. Department of Health and Human Services.

Cholera — Continued

vaccine is not recommended (*4*). The family should receive instructions about proper hand washing and about cleaning contaminated clothes and linen with soap and chlorine bleach. The sanitary facilities in a cholera patient's home should be inspected to ensure that the patient's feces are disposed of through adequate sewage treatment or a functioning septic tank or are otherwise decontaminated.

Case Reporting. All suspected or confirmed cases of cholera should be reported immediately to the local and state health department.

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Notice to Readers

Process for Identifying Exposure-Prone Invasive Procedures

On July 12, 1991, CDC published "Recommendations for Preventing Transmission of Human Immunodeficiency Virus and Hepatitis B Virus to Patients During Exposure-Prone Invasive Procedures" (*1*). This document defines exposure-prone invasive procedures as procedures during which there is a recognized risk for percutaneous injury to the health-care worker (HCW), and if such an injury occurs, the HCW's blood is likely to contact the patient's body cavity, subcutaneous tissues, and/or mucous membranes. Implementation of these recommendations requires that exposure-prone invasive procedures be identified by medical, surgical, and dental organizations whose members perform such procedures and by institutions at which such procedures are performed.

On August 7, CDC convened an ad hoc meeting of representatives of professional societies, institutions, and public health and other organizations to discuss a process to develop a list of exposure-prone invasive procedures that CDC will publish as a national reference. In subsequent meetings with CDC, professional societies will make recommendations regarding which invasive procedures performed by their members should be considered exposure-prone. Societies, expert consultants, and other interested groups will have the opportunity to review and comment on the list of exposure-prone invasive procedures before CDC publishes the recommendations. CDC anticipates completion of this process by November 15, 1991.

Exposure-Prone Invasive Procedures — Continued

Reported by: Hospital Infections Program, Div of HIV/AIDS, National Center for Infectious Diseases; Dental Disease Prevention Activity, Office of the Director, National Center for Prevention Svcs; HIV Activity, Office of the Director, National Institute for Occupational Safety and Health, CDC.

Reference

1. CDC. Recommendations for preventing transmission of human immunodeficiency virus and hepatitis B virus to patients during exposure-prone invasive procedures. MMWR 1991;40 (no. RR-8).

Erratum: Vol. 40, No. RR-9

On page 9 of the *MMWR Recommendations and Reports*, "Human Immunodeficiency Virus (HIV) Infection Codes and New Codes for Kaposi's Sarcoma: Official Authorized Addenda ICD-9-CM (Revision No. 2)," the code for "Human immunodeficiency virus infection, unspecified," was incorrectly published as 444.9; the correct code is 044.9. On page 18, the codes for "Contact (with) AIDS virus," "Contact (with) HIV," "Exposure (to) AIDS virus," and "Exposure (to) HIV" were incorrectly published as VO1.8; the correct code is VO1.7.

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