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Human Rabies — Alabama, Tennessee, and Texas, 1994

In October and November 1994, three persons (one each in Alabama, Tennessee, and Texas) died from rabies. This report summarizes the investigations of these cases by state and local health departments and CDC.

Alabama

On September 29 and 30, a 24-year-old woman residing in Barbour County, Alabama, who was 5–6 weeks pregnant sought care on two occasions at a local hospital emergency department (ED) for subscapular back pain, nausea, vomiting, and paresthesia of the left arm. She was treated for musculoskeletal pain and released. She returned to the ED on October 1 and was referred to a regional hospital for complaints of left-sided chest pain. While in the ED at the regional hospital, she had onset of seizures followed by multiple episodes of projectile vomiting and was admitted to the hospital. Initially, she was alert, but shortly after admission she required intubation and ventilation for respiratory distress and had a spontaneous abortion. On October 2, clinical conditions included acute respiratory distress syndrome, frequent seizures, severe rhabdomyolysis and compartmental syndrome requiring a fasciotomy, and acute renal failure.

On October 6, nasal and vaginal cultures were positive for *Candida albicans* and *C. tropicalis*. Coxsackie B6 virus titer was 16:1, and B1 was 8:1; all other coxsackie viral titers were negative. All other cultures and serologic tests for viral and bacterial cultures were negative.

She developed disseminated intravascular coagulation and multiorgan failure; she died on October 11. Autopsy results indicated evidence of disseminated candidiasis and mucormycosis, which were attributed to antibiotic and steroid therapy.

On December 2, intracytoplasmic structures (Negri bodies) were identified in tissue samples sent to the Armed Forces Institute of Pathology. On December 12, the fixed tissues analyzed at CDC were positive by immunofluorescence for rabies. Nucleotide sequence analysis identified a variant of rabies virus associated with the Mexican free-tailed bat (*Tadarida braziliensis*).

From 1987 through the onset of her illness, the woman frequently removed and discarded dead or dying bats from a chimney in the facility where she worked. On December 14, Alabama health department investigators retrieved five live bats (all Mexican free-tailed bats) from the facility's fireplace; three tested positive for rabies,

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and the rabies virus variants were identical by sequence analysis at CDC to the rabies variant isolated from the decedent.

Rabies postexposure prophylaxis was administered to 99 persons (four staff of the local hospital, 78 staff of the regional hospital, seven co-workers, three staff at a dental clinic where the patient had received treatment on September 18, two staff of the state forensic laboratory, one mortician, and four family members and friends).

Tennessee

On November 8, a 42-year-old woman from Cumberland County, Tennessee, visited a local physician because of an illness characterized by influenza-like symptoms. Possible herpes zoster was diagnosed, and antibiotics and symptomatic treatment were prescribed. On November 10, she sought care at a local ED for recurring upper back pain, left-sided chest pain, and left arm paresthesia. Bronchitis with pleurisy was diagnosed, and she received outpatient treatment with antibiotics and analgesics. On November 12, she visited a different ED with complaints of chest and breast numbness and was released without further treatment. On November 13, she returned to the first ED complaining of shaking and numbness. Anxiety and lower back strain were diagnosed; she was given hydroxyzine pamoate and prescriptions for cyclobenzaprine and naproxen and released.

On November 14, she was transported by ambulance from her home to a local hospital because of shaking, abdominal cramps, headache, and lower back pain. She was febrile (101.5 F [38.6 C]) and, except for coarse shivering and general myoclonic activity, had a normal neurologic examination. Because of continued myoclonic activity and elevated temperature, on November 15 she was transferred to a regional hospital with a diagnosis of aseptic meningitis. On arrival, she was alert and oriented, with a normal mental status examination; later that day, she had generalized tonic-clonic seizures with respiratory arrest, and she was intubated and mechanically ventilated under pharmacologically induced paralysis and sedation.

Evaluation during November 14–19 included a normal computerized cranial tomography. On November 19, neurologic examination revealed loss of pain and corneal reflex responses, although her pupils still responded to light. On November 21, rabies was suspected, and corneal impressions were sent to the state laboratory for rabies testing. She died on November 23.

On November 22, the corneal impressions were positive for rabies virus by immunofluorescence, and on November 30 brain tissue obtained at autopsy revealed the presence of rabies virus. Nucleotide sequence analysis at CDC identified a rabies virus variant associated with silver-haired bats (*Lasionycteris noctivagans*).

In an interview on November 15, the patient denied any animal bites or history of international travel. She had kept many pets (including 18 dogs, five cats, and three horses); rabies vaccinations had not been administered to seven dogs, two cats, and all three horses. Family members denied any deaths among these animals during the 2 years preceding her illness.

Rabies postexposure prophylaxis was administered to 47 persons (35 health-care providers, eight family members and friends, and four co-workers).

Texas

On November 13, a 14-year-old boy residing in Hidalgo County, Texas, was evaluated in a local ED for sore throat and dyspnea. Upper respiratory infection was

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suspected, and he was released with a prescription for amoxicillin. On November 14, his family noted changes in behavior (alternating hyperactivity and withdrawal). Following an episode of apparent seizure but no loss of consciousness, he was transported to his physician's office and then to the ED where he was admitted for acute central nervous system deterioration.

On admission, he was hyperventilating, incoherent, and hallucinating, and he required suctioning for oral secretions; physical examination findings included fever (104 F [40 C]), tachycardia, and hypotension (blood pressure: 96/46 mm Hg). He was transferred to an intensive-care unit where he was intubated and pharmacologically paralyzed.

The primary diagnosis was meningitis, but encephalitis and brain abscess also were considered; treatment included cefotaxime sodium, metronidazole, and acyclovir. Because of his rapidly deteriorating clinical status, on November 14 he was transferred to a tertiary-care facility where fluctuating fever and cardiovascular instability necessitated treatment with both vasopressors and dilators. On November 16, massive rhabdomyolysis occurred (serum creatinine phosphokinase: 69,000 international units [IU]/L [normal: 12–70 IU/L]), and he developed renal failure requiring dialysis. On November 23, rabies was suspected, and serum and cerebrospinal fluid (CSF) were obtained for antibody testing; saliva and a skin biopsy specimen from the nape of the neck also were obtained. The patient died on November 27.

Although the serum and CSF specimens were negative for evidence of rabies, a postmortem skin biopsy specimen (obtained November 28) and saliva samples (obtained November 30) were both positive for rabies virus at state laboratories and CDC. Nucleotide sequence analysis at CDC identified a rabies virus variant associated with Texas coyote/border dogs.

The patient had no known history of exposure to rabies. However, family members reported that he had been given a 3-week-old puppy in late September 1994. The puppy had onset of a diarrheal illness 2 weeks later and died after 1 week. The puppy's mother had been properly vaccinated in July 1994 and remained healthy, as did four littermates.

Rabies postexposure prophylaxis was administered to 54 persons (28 health-care providers at the tertiary-care facility, 10 at the local hospital, 13 family and friends, and three persons who had had contact with the puppy before its death).

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Editorial Note: In 1994, six rabies-associated deaths (including the three cases described in this report) occurred in humans—the highest annual number of rabies deaths in the United States since 1979. In each of the three cases described in this report, epidemiologic investigation failed to identify a clear history of animal bite exposure. Clear evidence of an animal bite (as reported by the patient or a family member) was documented for nine (27%) of the 33 human rabies deaths during 1977–

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1994, compared with 24 (89%) of 27 deaths during 1960–1976. Of the nine bite exposures in cases that occurred during 1977–1994, eight were associated with dogs outside the United States or near the Mexico-U.S. border, compared with five of 24 bite exposures during 1960–1976.

Nucleotide sequence analysis enables the identification of rabies virus variants responsible for human infection and assists in elucidating the circumstances that may have led to virus exposure (*1*). This analysis has been conducted on specimens from all 18 cases since 1980 for which no animal bite was identified. Of these, 10 (56%) cases were associated with variants present in insectivorous bats; seven (39%) were associated with variants present in domesticated dogs outside the United States or at the U.S.-Mexico border; and one was associated with a variant present in skunks in the south-central United States.

The investigation of the first case described in this report underscores the importance of avoiding contact with downed bats and other wildlife. Bat rabies is enzootic in the United States (*2*) and has been documented in all 48 contiguous states. Because some bat bites may be less severe—and therefore more difficult to recognize—than bites inflicted by larger animals, rabies postexposure prophylaxis should be considered for any physical contact with bats when bite or mucous membrane contact cannot be excluded (*3*).

Despite the increase in human rabies in 1994, the overall occurrence of human rabies in the United States has declined since the mid-1950s. This trend reflects several factors, including improvements in human postexposure prophylaxis (*3*) and dog rabies control. Most cases of human rabies in the United States now result from a lack of identification or recognition of risks (e.g., contact with bats) and the failure to administer treatment.

In 1993, the number of reported cases of animal rabies in the United States reached a record level (9495 cases), primarily reflecting the ongoing epizootic of raccoon rabies in the eastern United States and the emergence of coyote rabies in south Texas (*2*). The estimated cost of human postexposure prophylaxis as a result of potential exposure to these animals is $45 million annually. The cases described in this report and the substantial medical costs associated with prophylaxis emphasize the need for strengthening control and prevention measures, including appropriate vaccination of all dogs and cats (*4*), consideration of rabies in the differential diagnosis early in the course of neurologic disease of unknown origin, avoidance of stray and wild animals by humans and pets, and consideration of postexposure prophylaxis for persons potentially exposed to bats even where a history of physical contact cannot be elicited.

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Progress Toward Global Poliomyelitis Eradication, 1985–1994

In 1985, the Pan American Health Organization (PAHO) established as a goal the elimination of poliomyelitis from the Western Hemisphere by 1990; the last confirmed case of paralytic polio caused by wild poliovirus occurred in 1991 in Peru (*1*). In 1988, the World Health Assembly established the objective of global polio eradication by the year 2000 (*2*). Substantial progress toward this goal has resulted from the use of four strategies recommended by the World Health Organization (WHO): 1) maintenance of high vaccination coverage levels among children with at least three doses of oral poliovirus vaccine (OPV); 2) development of sensitive systems of epidemiologic and laboratory surveillance, including use of the standard WHO case definition*; 3) administration of supplementary doses of OPV to all young children (usually those aged <5 years) during National Immunization Days (NIDs)† to rapidly interrupt poliovirus transmission; and 4) "mopping-up" vaccination campaigns—localized campaigns targeted at high-risk areas where wild poliovirus transmission is most likely to persist at low levels (*3*). This report summarizes progress toward global polio eradication from 1985 through 1994 based on data submitted to WHO as of March 20, 1995.

Worldwide. From 1985 through 1990, routine vaccination coverage levels increased from 47% to 85% and stabilized at 80%–81% during 1991–1994 (Figure 1). From 1985 through 1994, the number of cases reported annually decreased 84%, from 39,361 to 6241 (Figure 1). The number of countries reporting polio cases decreased steadily, from 1985 (99 [51%] of 196) to 1988 (88 [45%] of 196) and 1994 (51 [24%] of 214) (Figure 2). In addition, the number of countries reporting zero polio cases increased from 1985 (84 [43%]) to 1988 (104 [53%]) and 1994 (145 [68%])§. The number of countries with endemic polio that conducted NIDs each year increased from 15 in 1988 to 37 as of April 14, 1995; 24 additional countries have scheduled their first NIDs for later in 1995.

A total of 94 countries have implemented surveillance for acute flaccid paralysis (AFP) to detect all cases of polio that meet the standard WHO case definition and to monitor the circulation of wild polioviruses. WHO has certified 12 regional reference laboratories and 60 national laboratories as members of the Global Polio Laboratory Network and has designated six geographic areas as emerging polio-free zones¶: the Western Hemisphere, Western and Central Europe, North Africa, Southern and Eastern Africa, the Middle East, and the Western Pacific.

African Region. Polio remains endemic in most countries of West and Central Africa. In 1994, a total of 448 cases were provisionally reported from 20 countries, a decrease of 73% from 1993 (1636 cases) and 98% from 1988 (4564 cases); 12 countries have not yet reported to WHO for 1994; seven countries did not report in 1993. The

*A confirmed case of polio is defined as acute flaccid paralysis (AFP) and at least one of the following: 1) laboratory-confirmed wild poliovirus infection, 2) residual paralysis at 60 days, 3) death, or 4) no follow-up investigation at 60 days.

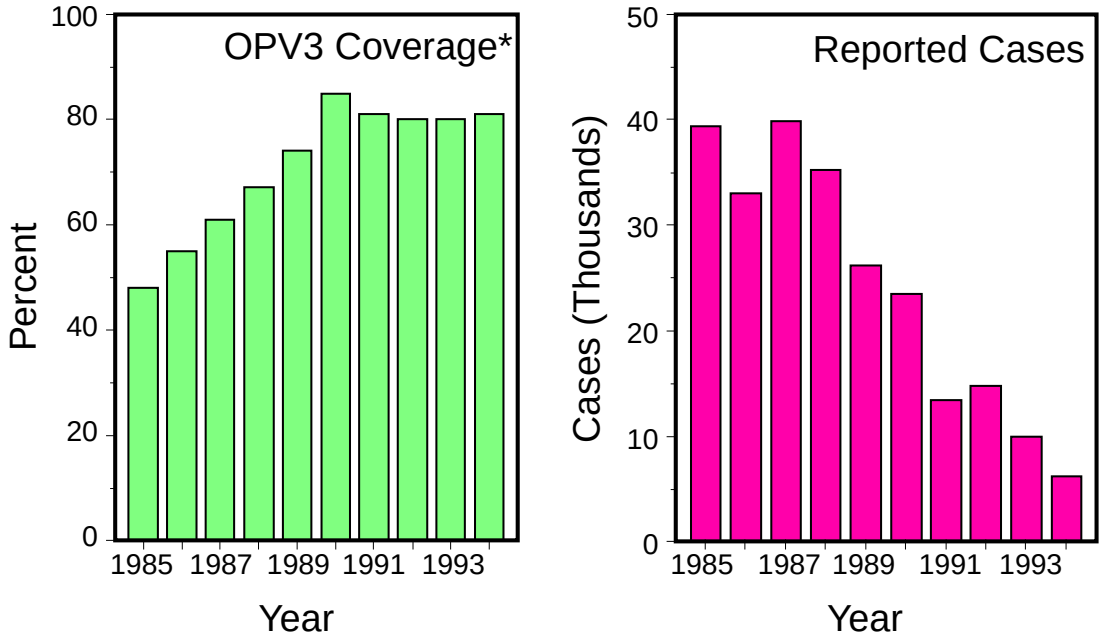
†Mass campaigns over a short period (days to weeks) in which two doses of OPV are administered to all children in the target age group, regardless of prior vaccination history, with an interval of 4–6 weeks between doses.

§The difference between the number of countries reporting polio cases or zero cases and the total number of countries reflects those not submitting reports.

¶Geographic areas where wild poliovirus either has disappeared or is at such a low level that eradication could be rapidly achieved.

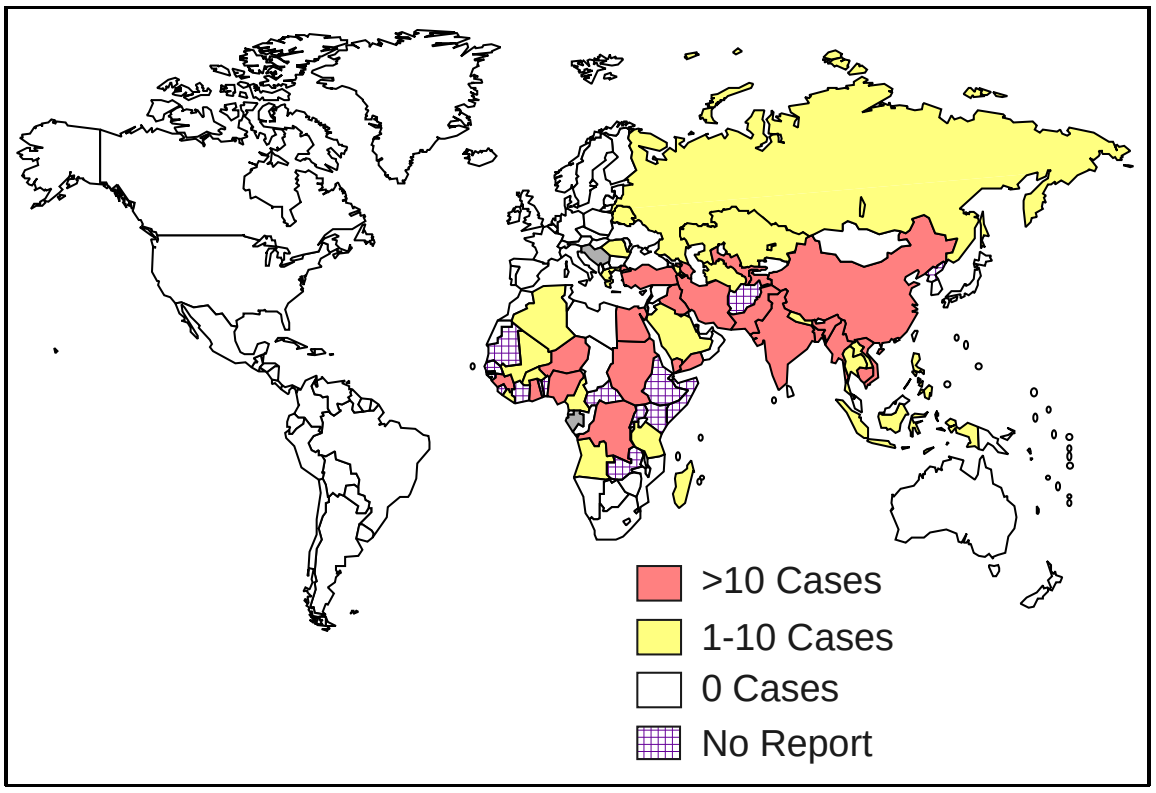
Poliomyelitis Eradication — Continued

FIGURE 1. Reported coverage with three doses of oral poliovirus vaccine (OPV3) and number of poliomyelitis cases, by year — worldwide, 1985–1994



*Percentage of children who received OPV3 by age 1 year.

FIGURE 2. Reported cases of poliomyelitis — worldwide, 1994



Poliomyelitis Eradication — Continued

number of countries reporting zero polio cases increased from eight in 1988 to 16 in 1994; most are island nations or located in southern Africa.

Region of the Americas. The last case of indigenous polio in the Americas was reported from Peru in 1991. In September 1994, an international commission convened by PAHO certified that indigenous transmission of wild poliovirus had been interrupted in the Americas (*1*).

Eastern Mediterranean Region. From 1988 through 1994, reported cases of polio decreased 58%, from 2342 to 973. In 1994, the 520 cases reported in Pakistan accounted for 53% of the regional total, although the number of cases within Pakistan declined 71% from 1993 (1803 cases). Pakistan conducted its first NIDs in April and May 1994. Coordinated NIDs are scheduled to be held during March–May 1995 in seven countries (Afghanistan, Iran, Iraq, Jordan, Lebanon, Pakistan, and Syria) and in Gaza, Jericho, and the West Bank (*4*). These countries reported 669 (69%) of the 973 cases reported in the region during 1994 (*4*).

European Region. The number of reported polio cases in the region has been stable during the 1990s: during 1994, a total of 211 cases were reported, compared with 202 cases in 1993 and 204 cases in 1988. NIDs are scheduled to be held during March–May 1995 in 10 countries (Armenia, Azerbaijan, Bulgaria, Georgia, Kazakhstan, Kyrgyzstan, Tajikistan, Turkey, Turkmenistan, and Uzbekistan) (*4*). These countries accounted for 200 (95%) of the 211 cases reported in the region during 1994.

Southeast Asian Region. From 1988 through 1994, the number of reported cases of polio decreased 84%, from 25,711 to 4184. The number of cases reported in India in 1994 (3867 cases) accounted for 93% of the regional total and 62% of the global total.

Western Pacific Region. From 1988 through 1994, the number of reported polio cases decreased 80%, from 2126 to 425. In 1994, polio was reported by five of 35 countries in the region (Cambodia, People's Republic of China, the Lao People's Democratic Republic, Philippines, and Vietnam). The number of cases reported by China (158 cases) was a 71% decrease from 1993 (538 cases) and a 97% decrease from 1990 (5065 cases); WHO-recommended strategies for polio eradication were implemented in China in 1991.

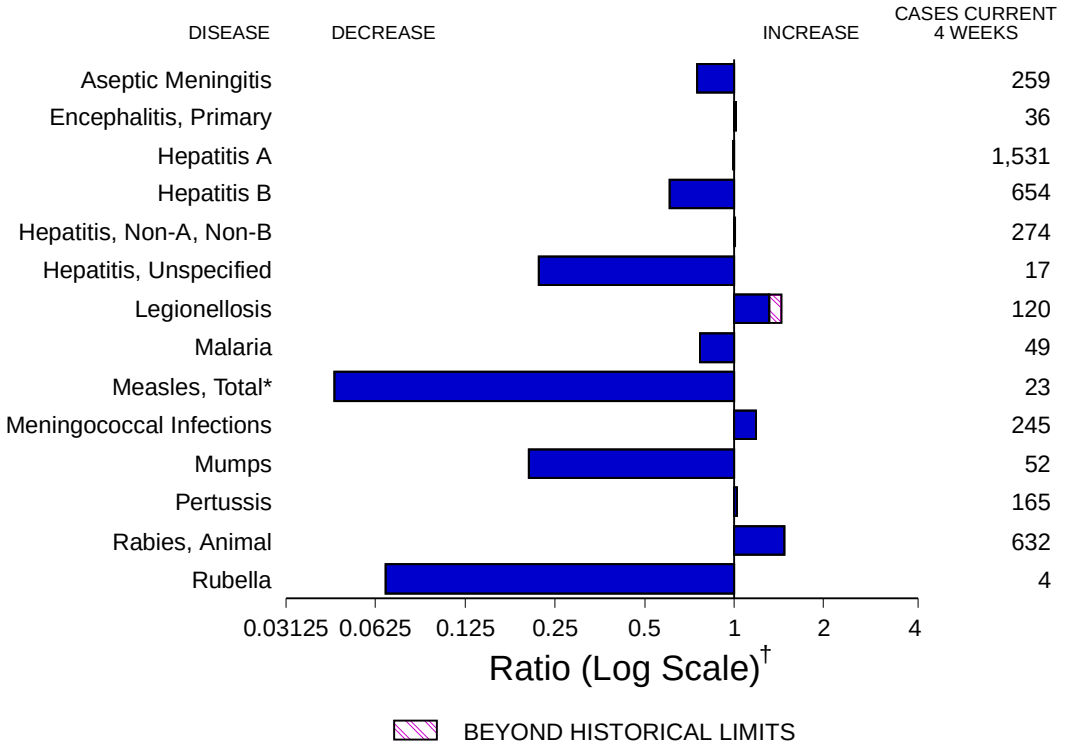
Reported by: Expanded Program on Immunization, Global Program for Vaccines and Immunization, World Health Organization, Geneva. International Health Program Office; Div of Viral and Rickettsial Diseases, National Center for Infectious Diseases; Polio Eradication Activity, National Immunization Program, CDC.

Editorial Note: Major achievements in the coordinated global campaign to eradicate polio include the substantial reduction in the global incidence of paralytic polio, the complete elimination of polio from the Region of the Americas, and the widespread implementation of NIDs and other WHO-recommended strategies. In particular, the number of reported cases declined dramatically in countries that conducted NIDs in late 1993 or the first half of 1994 (including China, Pakistan, Sudan, and Vietnam). In addition, during March–May 1995, coordinated NIDs targeting 56 million children aged <5 years will be conducted in 18 contiguous countries in Europe, Central and South Asia, and the Middle East (*4*).

The implementation of AFP surveillance is a critical element of WHO's eradication strategies. Eradication of disease requires a surveillance system that can detect a single case. Polio-endemic countries have implemented a system in which any AFP case in a person aged <15 years is reported as a suspected polio case. Two stool specimens

(Continued on page 281)

FIGURE I. Notifiable disease reports, comparison of 4-week totals ending April 8, 1995, with historical data — United States



*The large apparent decrease in the number of reported cases of measles (total) reflects dramatic fluctuations in the historical baseline.

†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 April 8, 1995 (14th Week)

	Cum. 1995		Cum. 1995
Anthrax	-	Plague	-
Aseptic Meningitis	1,104	Poliomyelitis, Paralytic	-
Brucellosis	13	Psittacosis	10
Cholera	-	Rabies, human	1
Congenital rubella syndrome	2	Rocky Mountain Spotted Fever	27
Diphtheria	-	Syphilis, congenital, age < 1 year†	-
Encephalitis, primary	123	Tetanus	7
Encephalitis, post-infectious	25	Toxic shock syndrome	54
*Haemophilus influenzae**	374	Trichinosis	9
Hansen Disease	30	Tularemia	5
Hepatitis, unspecified	103	Typhoid fever	71
Leptospirosis	13		

*Of 365 cases of known age, 85 (23%) were reported among children less than 5 years of age.
†Updated quarterly from reports to the Division of Sexually Transmitted Diseases and HIV Prevention, National Center for Prevention Services. First quarter data not yet available.
-: no reported cases

TABLE II. Cases of selected notifiable diseases, United States, weeks ending April 8, 1995, and April 9, 1994 (14th Week)

Reporting Area	AIDS*	Gonorrhea		Hepatitis (Viral), by type						Legionellosis	
				A		B		NA,NB			
	Cum. 1995	Cum. 1995	Cum. 1994	Cum. 1995	Cum. 1994	Cum. 1995	Cum. 1994	Cum. 1995	Cum. 1994	Cum. 1995	Cum. 1994
UNITED STATES	19,652	95,570	102,153	5,956	5,662	2,081	3,246	883	1,186	335	389
NEW ENGLAND	842	1,469	2,189	41	78	49	126	27	39	5	4
Maine	23	18	14	6	11	2	4	-	-	-	-
N.H.	38	32	19	2	3	6	6	3	5	-	-
Vt.	7	12	7	-	-	1	4	-	5	-	-
Mass.	457	847	814	18	36	14	89	23	22	4	1
R.I.	59	156	115	8	12	7	3	1	7	1	3
Conn.	258	404	1,220	7	16	19	20	-	-	N	N
MID. ATLANTIC	4,550	9,637	11,817	295	410	232	379	95	148	32	39
Upstate N.Y.	521	1,574	2,278	86	121	89	105	47	66	9	11
N.Y. City	2,342	2,814	4,782	128	163	48	81	1	1	-	1
N.J.	1,112	1,196	1,401	45	83	53	104	37	69	6	7
Pa.	575	4,053	3,356	36	43	42	89	10	12	17	20
E.N. CENTRAL	1,622	21,223	18,087	831	545	238	382	60	111	87	148
Ohio	409	6,880	6,230	543	148	27	53	4	3	42	54
Ind.	106	1,996	2,093	46	98	64	65	-	3	19	51
Ill.	737	5,928	3,490	100	174	27	98	10	32	6	7
Mich.	278	5,254	4,470	105	71	113	99	46	73	14	26
Wis.	92	1,165	1,804	37	54	7	67	-	-	6	10
W.N. CENTRAL	427	5,274	5,842	263	258	145	174	25	15	37	28
Minn.	93	834	906	21	42	9	12	-	2	-	-
Iowa	20	423	378	15	8	12	10	3	4	8	19
Mo.	148	3,155	3,086	183	141	105	132	17	2	23	4
N. Dak.	1	6	8	5	1	1	-	-	-	2	2
S. Dak.	1	49	53	3	10	1	-	1	-	-	-
Nebr.	43	-	329	9	33	7	8	2	3	2	2
Kans.	121	807	1,082	27	23	10	12	2	4	2	1
S. ATLANTIC	5,708	30,318	27,215	289	344	338	716	82	236	47	88
Del.	113	567	468	3	8	2	3	1	1	-	-
Md.	978	3,793	5,076	56	53	58	101	3	12	12	20
D.C.	373	1,424	1,742	2	8	8	13	-	-	3	-
Va.	374	3,150	3,472	54	33	26	27	1	13	2	2
W. Va.	21	211	190	7	3	19	7	19	8	3	1
N.C.	248	6,861	6,988	25	28	93	81	17	21	7	6
S.C.	280	3,235	3,344	7	8	9	12	-	1	7	1
Ga.	594	5,255	U	37	21	33	333	10	144	7	40
Fla.	2,727	5,822	5,935	98	182	90	139	31	36	6	18
E.S. CENTRAL	612	11,248	9,233	115	116	124	351	166	244	6	21
Ky.	63	1,324	1,212	12	63	14	34	4	6	1	3
Tenn.	269	1,612	3,495	51	38	74	295	161	236	2	13
Ala.	159	5,759	4,526	39	15	36	22	1	2	2	5
Miss.	121	2,553	U	13	U	-	U	-	U	1	U
W.S. CENTRAL	1,404	8,652	11,393	589	726	286	305	118	91	3	11
Ark.	64	879	1,986	21	29	2	9	-	2	-	4
La.	299	3,289	3,717	18	24	25	34	24	19	1	-
Okla.	84	564	897	121	58	103	96	88	48	2	7
Tex.	957	3,920	4,793	429	615	156	166	6	22	-	-
MOUNTAIN	637	2,110	6,208	1,179	1,062	176	152	132	108	73	27
Mont.	8	27	29	19	9	6	6	7	-	2	9
Idaho	17	38	22	130	94	21	25	12	34	1	-
Wyo.	4	10	27	50	5	3	6	56	25	1	1
Colo.	214	829	917	160	136	35	29	24	21	23	4
N. Mex.	69	265	281	231	268	59	49	18	12	2	1
Ariz.	133	780	4,372	294	388	28	17	10	4	36	1
Utah	37	39	90	258	111	17	8	2	8	2	1
Nev.	155	122	470	37	51	7	12	3	4	6	10
PACIFIC	3,850	5,639	10,169	2,354	2,123	493	661	178	194	45	23
Wash.	360	709	853	156	275	45	63	60	69	-	5
Oreg.	122	18	289	440	104	24	19	8	2	-	-
Calif.	3,261	4,519	8,580	1,694	1,665	417	554	101	120	40	16
Alaska	29	237	218	15	67	2	5	1	-	-	-
Hawaii	78	156	229	49	12	5	20	8	3	5	2
Guam	-	12	41	-	3	-	-	-	-	-	2
P.R.	649	144	154	15	21	201	85	161	28	-	-
V.I.	14	3	8	-	-	1	1	-	-	-	-
Amer. Samoa	-	8	7	5	4	-	-	-	-	-	-
C.N.M.I.	-	3	16	1	2	-	-	-	-	-	-

N: Not notifiable U: Unavailable -: no reported cases C.N.M.I.: Commonwealth of Northern Mariana Islands

*Updated monthly to the Division of HIV/AIDS, National Center for Infectious Diseases; last update March 30, 1995.

TABLE II. (Cont'd.) Cases of selected notifiable diseases, United States, weeks ending April 8, 1995, and April 9, 1994 (14th Week)

Reporting Area	Lyme Disease		Malaria		Measles (Rubeola)						Meningococcal Infections		Mumps	
					Indigenous		Imported*		Total					
	Cum. 1995	Cum. 1994	Cum. 1995	Cum. 1994	1995	Cum. 1995	1995	Cum. 1995	Cum. 1995	Cum. 1994	Cum. 1995	Cum. 1994	Cum. 1995	Cum. 1994
UNITED STATES	909	1,016	225	284	1	146	-	3	149	188	914	925	208	374
NEW ENGLAND	43	100	14	25	-	2	-	1	3	7	61	47	3	9
Maine	1	-	1	1	-	-	-	-	-	-	3	6	2	3
N.H.	4	5	1	3	-	-	-	-	-	-	12	1	-	3
Vt.	1	1	-	1	-	-	-	-	-	-	5	1	-	-
Mass.	28	19	3	8	-	-	-	1	1	1	23	16	-	-
R.I.	9	14	2	4	-	2	-	-	2	3	-	-	-	1
Conn.	-	61	7	8	-	-	-	-	-	3	18	23	1	2
MID. ATLANTIC	700	738	49	39	1	2	-	-	2	90	88	77	25	35
Upstate N.Y.	436	596	10	12	-	-	-	-	-	4	36	31	9	6
N.Y. City	2	10	21	10	-	1	-	-	1	1	10	3	2	-
N.J.	47	91	12	13	-	-	-	-	-	84	21	22	-	6
Pa.	215	41	6	4	1	1	-	-	1	1	21	21	14	23
E.N. CENTRAL	15	10	18	33	-	-	-	-	-	17	119	145	31	100
Ohio	13	4	1	3	-	-	-	-	-	10	39	33	15	8
Ind.	1	1	2	9	-	-	-	-	-	1	20	32	1	3
Ill.	-	4	13	11	-	-	-	-	-	1	34	45	5	68
Mich.	1	1	2	9	-	-	-	-	-	2	22	14	10	18
Wis.	-	-	-	1	-	-	-	-	-	3	4	21	-	3
W.N. CENTRAL	16	16	7	15	-	-	-	-	-	2	55	65	13	14
Minn.	-	4	3	4	-	-	-	-	-	-	10	5	2	-
Iowa	1	1	-	3	-	-	-	-	-	-	9	5	3	4
Mo.	4	9	3	5	-	-	-	-	-	1	20	37	6	9
N. Dak.	-	-	-	-	-	-	-	-	-	-	-	-	-	1
S. Dak.	-	-	-	-	-	-	-	-	-	-	2	4	-	-
Nebr.	-	-	1	2	-	-	-	-	-	1	6	4	2	-
Kans.	11	2	-	1	-	-	-	-	-	-	8	10	-	-
S. ATLANTIC	95	116	53	67	-	-	-	-	-	4	166	149	33	61
Del.	1	11	1	2	-	-	-	-	-	-	2	2	-	-
Md.	69	36	18	27	-	-	-	-	-	-	9	10	-	14
D.C.	-	1	3	7	-	-	-	-	-	-	1	1	-	-
Va.	3	12	10	8	-	-	-	-	-	1	23	21	9	14
W. Va.	7	3	-	-	-	-	-	-	-	-	3	7	-	2
N.C.	7	19	4	2	-	-	-	-	-	-	23	29	16	19
S.C.	4	-	-	2	-	-	-	-	-	-	24	5	3	5
Ga.	4	32	7	10	-	-	-	-	-	-	44	24	-	3
Fla.	-	2	10	9	-	-	-	-	-	3	37	50	5	4
E.S. CENTRAL	3	7	2	6	-	-	-	-	-	27	50	58	8	-
Ky.	1	5	-	2	-	-	-	-	-	-	20	15	-	-
Tenn.	1	1	-	3	-	-	-	-	-	27	8	17	4	-
Ala.	-	1	2	1	-	-	-	-	-	-	14	26	2	-
Miss.	1	U	-	U	-	-	-	-	-	U	8	U	2	U
W.S. CENTRAL	17	7	6	7	-	2	-	-	2	7	102	111	9	76
Ark.	-	-	2	-	U	2	U	-	2	-	8	18	-	-
La.	-	-	1	-	-	-	-	-	-	1	14	18	2	7
Okla.	11	6	-	2	-	-	-	-	-	-	9	8	-	21
Tex.	6	1	3	5	-	-	-	-	-	6	71	67	7	48
MOUNTAIN	2	4	17	10	-	39	-	-	39	26	75	70	15	8
Mont.	-	-	1	-	-	-	-	-	-	-	2	2	-	-
Idaho	-	1	1	2	-	1	-	-	1	-	2	11	3	3
Wyo.	-	-	-	-	-	-	-	-	-	-	4	2	-	-
Colo.	1	-	9	4	-	-	-	-	-	-	19	9	1	-
N. Mex.	-	3	3	2	U	27	U	-	27	-	18	5	N	N
Ariz.	-	-	2	-	-	10	-	-	10	-	25	25	3	-
Utah	-	-	1	2	-	-	-	-	-	26	2	12	1	2
Nev.	1	-	-	-	-	1	-	-	1	-	3	4	6	3
PACIFIC	18	18	59	82	-	101	-	2	103	8	198	203	71	71
Wash.	-	-	6	6	-	13	-	1	14	-	33	35	4	6
Oreg.	1	-	4	6	-	1	-	-	1	-	35	38	N	N
Calif.	17	18	42	62	-	87	-	-	87	8	128	124	60	59
Alaska	-	-	1	-	-	-	-	-	-	-	-	1	6	2
Hawaii	-	-	6	8	-	-	-	1	1	-	2	5	1	4
Guam	-	-	-	-	U	-	U	-	-	15	1	-	-	2
P.R.	-	-	-	-	-	3	-	-	3	22	10	4	-	2
V.I.	-	-	-	-	U	-	U	-	-	-	-	-	1	-
Amer. Samoa	-	-	-	-	-	-	-	-	-	-	-	-	-	1
C.N.M.I.	-	-	-	1	U	-	U	-	-	26	-	-	-	-

*For imported measles, cases include only those resulting from importation from other countries.
N: Not notifiable U: Unavailable -: no reported cases

TABLE II. (Cont'd.) Cases of selected notifiable diseases, United States, weeks ending April 8, 1995, and April 9, 1994 (14th Week)

Reporting Area	Pertussis			Rubella			Syphilis (Primary & Secondary)		Tuberculosis		Rabies, Animal	
	1995	Cum. 1995	Cum. 1994	1995	Cum. 1995	Cum. 1994	Cum. 1995	Cum. 1994	Cum. 1995	Cum. 1994	Cum. 1995	Cum. 1994
UNITED STATES	26	815	1,008	2	20	115	4,233	5,133	3,730	4,643	1,672	1,855
NEW ENGLAND	1	89	96	-	2	80	58	57	73	84	485	486
Maine	1	11	2	-	-	-	2	1	-	-	-	-
N.H.	-	4	22	-	1	-	1	-	3	2	62	62
Vt.	-	2	9	-	-	-	-	-	1	-	66	47
Mass.	-	68	57	-	1	80	19	17	31	40	196	185
R.I.	-	-	2	-	-	-	1	5	10	8	64	5
Conn.	-	4	4	-	-	-	35	34	28	34	97	187
MID. ATLANTIC	4	55	199	-	2	4	258	372	797	750	432	428
Upstate N.Y.	2	34	79	-	1	4	19	46	62	129	196	292
N.Y. City	-	10	28	-	1	-	134	200	437	415	-	-
N.J.	-	-	8	-	-	-	57	55	147	139	81	89
Pa.	2	11	84	-	-	-	48	71	151	67	155	47
E.N. CENTRAL	1	70	246	-	-	10	782	688	431	471	2	7
Ohio	1	32	58	-	-	-	271	283	76	63	1	-
Ind.	-	4	27	-	-	-	65	76	10	47	-	-
Ill.	-	4	84	-	-	6	320	147	239	254	1	3
Mich.	-	29	19	-	-	4	86	96	95	97	-	2
Wis.	-	1	58	-	-	-	40	86	11	10	-	2
W.N. CENTRAL	2	27	24	-	-	-	216	364	133	101	67	44
Minn.	-	5	8	-	-	-	15	14	31	21	2	1
Iowa	-	1	1	-	-	-	18	13	22	9	25	18
Mo.	-	-	8	-	-	-	174	309	51	50	10	5
N. Dak.	-	5	-	-	-	-	-	-	1	1	6	-
S. Dak.	2	6	-	-	-	-	-	-	-	6	11	5
Nebr.	-	3	1	-	-	-	-	3	6	1	-	-
Kans.	-	7	6	-	-	-	9	25	22	13	13	15
S. ATLANTIC	3	73	119	-	1	5	1,005	1,553	705	887	493	526
Del.	-	4	-	-	-	-	7	6	-	6	10	9
Md.	-	-	38	-	-	-	24	72	121	84	115	174
D.C.	-	1	3	-	-	-	41	67	23	36	2	1
Va.	-	7	13	-	-	-	192	192	29	93	100	114
W. Va.	-	-	2	-	-	-	1	6	28	22	23	20
N.C.	2	49	34	-	-	-	302	510	61	75	113	51
S.C.	1	8	8	-	-	-	186	190	78	107	41	47
Ga.	-	1	6	-	-	-	129	254	109	170	77	105
Fla.	-	3	15	-	1	5	123	256	256	294	12	5
E.S. CENTRAL	2	16	34	-	2	-	1,104	504	222	287	50	56
Ky.	-	-	15	-	-	-	70	72	54	80	5	2
Tenn.	-	1	13	-	2	-	148	251	-	102	11	28
Ala.	2	15	6	-	-	-	174	181	106	105	34	26
Miss.	-	-	U	-	-	U	712	U	62	U	-	U
W.S. CENTRAL	5	26	26	-	1	4	643	1,136	374	419	29	209
Ark.	U	-	-	U	-	-	159	147	35	64	8	9
La.	-	1	3	-	-	-	299	543	-	-	9	30
Okla.	-	2	20	-	-	4	21	40	1	36	12	15
Tex.	5	23	3	-	1	-	164	406	338	319	-	155
MOUNTAIN	1	293	79	-	2	-	66	161	163	124	20	26
Mont.	-	3	2	-	-	-	3	-	3	-	9	3
Idaho	1	27	19	-	-	-	-	1	7	4	-	-
Wyo.	-	-	-	-	-	-	2	-	1	1	1	5
Colo.	-	1	41	-	-	-	42	51	4	9	-	-
N. Mex.	U	9	5	U	-	-	1	5	22	26	-	-
Ariz.	-	249	8	-	2	-	11	93	76	55	9	17
Utah	-	2	4	-	-	-	4	5	10	-	-	-
Nev.	-	2	-	-	-	-	3	6	40	29	1	1
PACIFIC	7	166	185	2	10	12	101	298	832	1,520	94	73
Wash.	1	22	27	-	-	-	5	9	63	61	-	-
Oreg.	-	3	19	-	1	-	-	2	3	34	-	-
Calif.	5	137	135	1	8	11	96	285	704	1,336	93	55
Alaska	-	-	-	-	-	-	-	1	16	23	1	18
Hawaii	1	4	4	1	1	1	-	1	46	66	-	-
Guam	U	-	-	U	-	-	1	1	4	7	-	-
P.R.	-	4	3	-	-	-	81	98	23	29	11	22
V.I.	U	-	-	U	-	-	-	7	-	-	-	-
Amer. Samoa	-	-	1	-	-	-	-	-	2	-	-	-
C.N.M.I.	U	-	-	U	-	-	-	1	2	14	-	-

U: Unavailable -: no reported cases

TABLE III. Deaths in 121 U.S. cities,* week ending April 8, 1995 (14th Week)

Reporting Area	All Causes, By Age (Years)						P&I† Total
	All Ages	≥65	45-64	25-44	1-24	<1	
NEW ENGLAND	564	404	88	47	17	7	38
Boston, Mass.	138	88	26	8	11	4	1
Bridgeport, Conn.	39	25	8	5	-	1	3
Cambridge, Mass.	20	15	5	-	-	-	-
Fall River, Mass.	33	27	5	1	-	-	1
Hartford, Conn.	32	23	4	3	2	-	-
Lowell, Mass.	24	17	2	3	1	1	3
Lynn, Mass.	9	4	2	3	-	-	1
New Bedford, Mass.	31	21	5	4	1	-	4
New Haven, Conn.	52	42	4	4	1	1	2
Providence, R.I.	28	26	-	2	-	-	2
Somerville, Mass.	6	5	-	1	-	-	-
Springfield, Mass.	54	37	11	5	1	-	5
Waterbury, Conn.	35	24	8	3	-	-	3
Worcester, Mass.	63	50	8	5	-	-	13
MID. ATLANTIC	2,136	1,407	373	259	54	43	113
Albany, N.Y.	52	38	7	6	-	1	5
Allentown, Pa.	38	23	1	11	-	3	-
Buffalo, N.Y.	96	79	10	3	2	2	7
Camden, N.J.	38	23	8	5	1	1	-
Elizabeth, N.J.	21	12	4	5	-	-	1
Erie, Pa.§	45	35	4	6	-	-	6
Jersey City, N.J.	51	28	7	8	4	4	-
New York City, N.Y.	1,286	798	262	171	35	20	50
Newark, N.J.	56	23	13	12	4	4	5
Paterson, N.J.	28	19	2	6	1	-	-
Philadelphia, Pa.	U	U	U	U	U	U	U
Pittsburgh, Pa.§	46	37	7	-	1	1	5
Reading, Pa.	13	10	3	-	-	-	1
Rochester, N.Y.	131	103	15	9	1	3	10
Schenectady, N.Y.	28	28	-	-	-	-	2
Scranton, Pa.§	31	27	3	-	1	-	2
Syracuse, N.Y.	102	69	17	10	4	2	7
Trenton, N.J.	32	23	4	3	-	2	8
Utica, N.Y.	17	14	2	1	-	-	-
Yonkers, N.Y.	25	18	4	3	-	-	4
E.N. CENTRAL	2,372	1,470	438	254	138	72	138
Akron, Ohio	63	45	12	3	2	1	-
Canton, Ohio	45	35	8	1	1	-	6
Chicago, Ill.	587	271	105	115	76	20	22
Cincinnati, Ohio	128	84	24	11	4	5	18
Cleveland, Ohio	139	53	30	30	16	10	4
Columbus, Ohio	200	135	42	17	1	5	13
Dayton, Ohio	117	90	20	4	3	-	5
Detroit, Mich.	216	128	44	27	7	10	4
Evansville, Ind.	57	44	6	3	4	-	3
Fort Wayne, Ind.	59	50	7	1	1	-	4
Gary, Ind.	19	9	3	2	3	2	-
Grand Rapids, Mich.	73	49	14	4	2	4	11
Indianapolis, Ind.	183	123	34	14	5	7	11
Madison, Wis.	80	59	12	3	3	3	9
Milwaukee, Wis.	116	85	26	3	2	-	9
Peoria, Ill.	31	25	4	1	-	1	5
Rockford, Ill.	47	33	6	4	2	2	3
South Bend, Ind.	45	31	5	5	3	1	-
Toledo, Ohio	99	72	22	2	2	1	8
Youngstown, Ohio	68	49	14	4	1	-	3
W.N. CENTRAL	788	550	142	57	23	16	58
Des Moines, Iowa	73	53	16	2	1	1	8
Duluth, Minn.	19	14	5	-	-	-	4
Kansas City, Kans.	21	12	5	3	-	1	-
Kansas City, Mo.	130	75	25	16	10	4	6
Lincoln, Nebr.	41	31	4	6	-	-	1
Minneapolis, Minn.	198	144	33	6	8	7	11
Omaha, Nebr.	106	79	18	9	-	-	9
St. Louis, Mo.	130	90	23	11	3	3	17
St. Paul, Minn.	55	40	11	3	1	-	2
Wichita, Kans.	15	12	2	1	-	-	-
S. ATLANTIC	1,447	856	319	183	46	42	76
Atlanta, Ga.	205	106	50	28	5	16	6
Baltimore, Md.	195	109	37	38	8	2	20
Charlotte, N.C.	108	63	26	11	4	4	5
Jacksonville, Fla.	144	101	28	11	3	1	10
Miami, Fla.	110	62	25	17	4	2	-
Norfolk, Va.	49	29	12	3	3	2	3
Richmond, Va.	98	61	21	11	3	2	2
Savannah, Ga.	57	36	12	7	1	1	7
St. Petersburg, Fla.	61	48	6	3	-	4	4
Tampa, Fla.	195	122	45	17	8	3	16
Washington, D.C.	205	102	55	36	7	5	3
Wilmington, Del.	20	17	2	1	-	-	-
E.S. CENTRAL	793	537	153	67	16	20	75
Birmingham, Ala.	90	55	15	11	2	7	3
Chattanooga, Tenn.	76	55	10	6	2	3	6
Knoxville, Tenn.	94	70	18	6	-	-	15
Lexington, Ky.	63	46	11	4	2	-	6
Memphis, Tenn.	179	128	30	13	4	4	20
Mobile, Ala.	94	65	14	8	3	4	5
Montgomery, Ala.	58	38	15	3	1	1	7
Nashville, Tenn.	139	80	40	16	2	1	13
W.S. CENTRAL	1,476	980	272	133	54	37	97
Austin, Tex.	48	35	6	4	3	-	1
Baton Rouge, La.	47	23	11	2	4	7	4
Corpus Christi, Tex.	58	36	13	4	2	3	2
Dallas, Tex.	233	131	55	29	12	6	4
El Paso, Tex.	35	24	7	3	1	-	4
Ft. Worth, Tex.	115	76	22	10	2	5	6
Houston, Tex.	398	268	73	40	12	5	37
Little Rock, Ark.	60	42	8	6	1	3	4
New Orleans, La.	106	76	13	15	2	-	-
San Antonio, Tex.	207	146	32	14	10	5	17
Shreveport, La.	47	32	10	2	3	-	10
Tulsa, Okla.	122	91	22	4	2	3	8
MOUNTAIN	939	635	173	90	26	15	55
Albuquerque, N.M.	96	63	24	6	3	-	5
Colo. Springs, Colo.	45	30	7	5	2	1	8
Denver, Colo.	112	74	14	17	4	3	6
Las Vegas, Nev.	189	124	41	17	4	3	12
Ogden, Utah	28	24	4	-	-	-	3
Phoenix, Ariz.	184	108	46	23	3	4	10
Pueblo, Colo.	21	17	4	-	-	-	1
Salt Lake City, Utah	106	66	20	8	9	3	6
Tucson, Ariz.	158	129	13	14	1	1	4
PACIFIC	1,945	1,336	332	179	47	34	184
Berkeley, Calif.	20	17	-	3	-	-	3
Fresno, Calif.	90	60	13	7	6	4	8
Glendale, Calif.	37	27	9	1	-	-	1
Honolulu, Hawaii	63	42	12	4	4	1	11
Long Beach, Calif.	74	50	15	8	1	-	7
Los Angeles, Calif.	656	447	113	65	22	7	41
Pasadena, Calif.	29	22	1	4	1	1	4
Portland, Oreg.	143	100	30	12	1	-	11
Sacramento, Calif.	U	U	U	U	U	U	U
San Diego, Calif.	135	103	19	10	2	1	18
San Francisco, Calif.	163	86	35	18	1	8	28
San Jose, Calif.	194	143	32	13	4	2	26
Santa Cruz, Calif.	40	29	7	4	-	-	4
Seattle, Wash.	146	92	30	18	1	5	9
Spokane, Wash.	51	42	4	4	-	1	5
Tacoma, Wash.	104	76	12	8	4	4	8
TOTAL	12,460¶	8,175	2,290	1,269	421	286	834

*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.
U: Unavailable -: no reported cases

Poliomyelitis Eradication — Continued

are collected from each suspected case-patient at an interval of 24–48 hours to determine the presence of poliovirus; however, the standard WHO case definition permits an AFP case to be confirmed as polio if it meets any of four criteria, including the isolation of poliovirus from a stool specimen. Accurate and timely surveillance information about wild poliovirus transmission enables the targeting of supplementary vaccination activities toward remaining known reservoirs of poliovirus through intensive, localized vaccination campaigns (i.e., mopping-up vaccination). AFP surveillance also is being used to certify eradication at the national, regional, and global levels.

In 1994, the contiguous countries of Bangladesh, India, and Pakistan accounted for 73% of the global total of polio cases. Since 1988, importation of wild poliovirus from these polio-endemic countries of Southeast Asia has accounted for many of the outbreaks or sporadic cases of polio in previously polio-free countries of Europe, the Middle East, and North America. Because Southeast Asia remains a major global reservoir of polioviruses, full implementation of the WHO-recommended polio eradication strategies in these countries is a high priority.

The global eradication of polio by the year 2000 will require that all polio-endemic countries implement NIDs and other WHO-recommended strategies by 1997. Implementation of these strategies is especially important in the African Region, which has the largest number of countries not reporting polio surveillance data; the African Regional Office of WHO is assisting countries in strengthening polio surveillance and planning for NIDs. Although global routine vaccination coverage levels remained stable during 1990–1994, reported polio cases declined substantially, largely because of an increase in the number of countries conducting NIDs.

Despite substantial progress toward global eradication of polio, several challenges remain, including 1) increasing vaccination levels in unvaccinated subpopulations; 2) preventing the reintroduction of wild poliovirus into polio-free areas by eliminating reservoirs in polio-endemic countries (particularly in the Indian subcontinent); 3) increasing the awareness of donor agencies and governments in industrialized countries of the substantial financial and humanitarian benefits of global eradication of polio, thus engendering support from unaffected countries beyond that already provided by organizations such as Rotary International; 4) encouraging all countries that remain polio-endemic to make polio eradication a priority activity, including the implementation of NIDs and the initiation of AFP surveillance; and 5) providing support to vaccination program managers for training to develop managerial skills for implementing and maintaining effective vaccination and surveillance programs in all countries. The success of the polio eradication initiative will depend on finding solutions to these financial, managerial, political, and technical challenges.

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Increasing Incidence of Gonorrhea — Minnesota, 1994

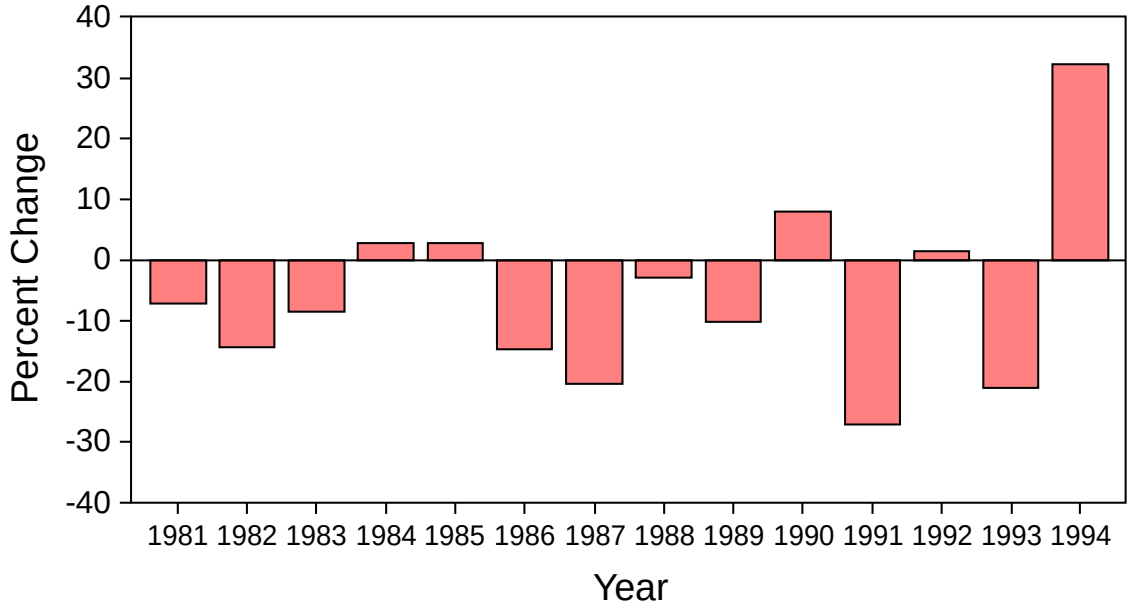
In the United States, gonorrhea is an important cause of urethritis in men and cervicitis in women; reproductive complications include infertility and ectopic pregnancy. During 1981–1993, the annual incidence rate of gonorrhea in Minnesota declined; the average annual change in the rate of infection was –8.5% (Figure 1). However, in 1994, the incidence rate increased 32% (from 56 cases per 100,000 persons in 1993 to 74 cases per 100,000 in 1994). No corresponding increases occurred in rates of other reportable sexually transmitted diseases (STDs), including chlamydial infection and early syphilis. To elucidate possible explanations for the increased rate of gonorrhea in Minnesota in 1994, the Minnesota Department of Health (MDH) analyzed surveillance data for 1994 and compared it with data for 1993. This report presents the findings of the analysis.

In 1994, a total of 3346 gonorrhea cases* were reported to MDH, compared with 2543 cases in 1993. From 1993 to 1994, the incidence rate of gonorrhea increased at least 30% in Minneapolis and St. Paul and in the remainder of the seven-county Minneapolis-St. Paul metropolitan area; in rural areas of the state, the rate increased 17% but remained low (i.e., <10 cases per 100,000) (Table 1). Six urban zip code areas accounted for 49% of all gonorrhea cases but represented only 5% of the state's population.

From 1993 to 1994, the rate of gonorrhea in Minnesota increased 14%–44% for all racial/ethnic groups; the rate was highest for non-Hispanic blacks (Table 1). Sex-specific rates increased approximately 30% and were similar for men and women. Age-specific rates increased 20%–86% for all age groups except 10–14-year-olds; rates were highest among adolescents (i.e., 15–19-year-olds).

*A written report of gonorrhea submitted by a physician and confirmed by a positive laboratory test for *Neisseria gonorrhoeae.*

FIGURE 1. Annual percentage change in incidence rate of gonorrhea, by year — Minnesota, 1981–1994



Gonorrhea — Continued

From 1993 to 1994, the increase in reported cases varied by reporting source. During this period, the number of gonorrhea cases reported by STD clinics increased 28% (from 1120 to 1430, respectively) and by all other sources increased 34% (from 1423 to 1916, respectively). In addition, the related increase in positive cultures for gonorrhea varied by laboratory testing source. At the two STD clinics in Minneapolis and St. Paul that accounted for most (43%) cases during 1993 and 1994, all clients were tested for gonorrhea. These clinics submitted 18,032 culture specimens to the Minnesota Public Health Laboratory (MPHL) in 1994. Although specimen collection, handling procedures, and volume of tests were unchanged at the two clinics, the percentage of cultures in 1994 that were positive for *Neisseria gonorrhoeae* increased 24% (from 6.7% to 8.3%) and 28% (from 6.0% to 7.7%). Of the five clinics that each submitted ≥1500 gonorrhea cultures to the MPHL in 1994, the proportion of positive cultures increased substantially for only one clinic. For 16 private and hospital-based

TABLE 1. Reported number of persons with gonorrhea and rate* of gonorrhea, by sex, age group, race/ethnicity, and area of residence — Minnesota, 1993 and 1994, and percentage change in rate of gonorrhea

Characteristic	1993		1994		% Change from 1993 to 1994
	No. cases	Rate	No. cases	Rate	
Sex					
Male	1272	57	1663	75	+32
Female	1271	55	1683	73	+33
Age group (yrs)†					
10–14	82	25	77	24	– 4
15–19	901	293	1166	379	+29
20–24	766	235	923	283	+20
25–34	600	74	834	103	+39
35–44	149	22	280	41	+86
≥45	44	3	63	5	+67
Race/Ethnicity§					
White, non-Hispanic	546	13	770	18	+39
Black, non-Hispanic	1683	1515	2137	1924	+27
American Indian	51	94	59	109	+16
Asian/Pacific Islander	27	29	30	33	+14
Hispanic¶	53	86	76	124	+44
Area of residence					
Minneapolis	1481	403	1933	525	+30
St. Paul	493	181	656	241	+33
Seven-county metropolitan area**	435	25	604	35	+40
Rural Minnesota††	134	6	153	7	+17

*Per 100,000 persons (based on 1993 population estimates).
†Data were excluded from this analysis for persons aged <10 years (for 1993, one person and, for 1994, three persons).
§Data were excluded from this analysis for persons of other races and for whom race was unknown (for 1993, a total of 183 persons and, for 1994, a total of 274 persons).
¶Persons of Hispanic origin can be of any race.
**Comprises counties of Anoka, Carver, Dakota, Hennepin, Ramsey, Scott, and Washington, excluding cities of Minneapolis and St. Paul.
††Comprises 80 counties outside the Minneapolis-St. Paul metropolitan area.

Gonorrhea — Continued

laboratories, the proportion of all tests (i.e., culture and nonculture) that were positive increased from 1.7% (409 of 24,531) during the fourth quarter of 1993 to 1.9% (491 of 26,231) during the fourth quarter of 1994. From 1993 to 1994, the proportion of gonorrhea patients who were interviewed by health department staff (30%) to identify and treat sex partners remained constant.

Testing for antimicrobial resistance was performed on every fourth *N. gonorrhoeae* isolate identified at the MPHL; in 1994, a total of 433 isolates were tested. All were susceptible to ceftriaxone and ciprofloxacin, two of the recommended therapies for gonorrhea (*1*).

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Editorial Note: Gonorrhea is a major cause of pelvic inflammatory disease and may play a role as a cofactor in human immunodeficiency virus transmission (*2,3*). During 1975–1993, the rate of reported gonorrhea decreased 65% in the United States, from a peak of 467.7 cases per 100,000 persons to 165.8 per 100,000 (*4*). Despite the decline, gonorrhea rates in the United States remain the highest among developed countries (*5*).

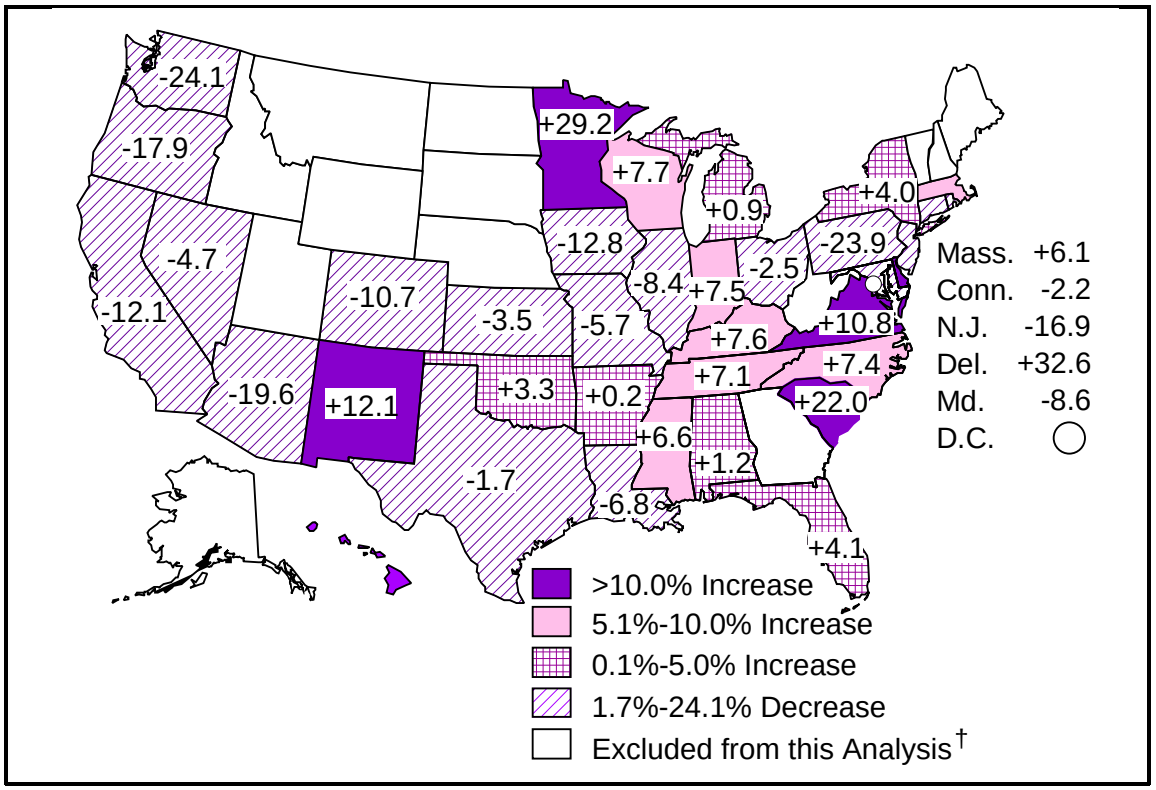
The surveillance findings in Minnesota probably reflect a real increase in the incidence of gonorrhea because reported cases increased in all age and race groups without apparent change in program activities, reporting practices, or laboratory procedures. In addition, the proportion of positive cultures increased at the MPHL. Rates remained highest for adolescents, non-Hispanic blacks, and residents of urban areas. National surveillance data also indicate high incidence in these groups (*4*). Adolescents and young adults are at increased risk for gonorrhea because they are more likely to have multiple sex partners, to have unprotected sex, and to select partners at increased risk (*6*). In 1993, 81% of the total reported cases of gonorrhea in the United States occurred among blacks (*4*); although explanations for the high rates among blacks are undetermined, race may be a marker strongly associated with risk factors for STDs, such as low socioeconomic status, access to health care, health-care seeking behavior, illicit drug use, and residence in communities with high prevalences of STDs. In Minnesota, the concentration of gonorrhea cases in some zip code areas suggests the disease is highly focal, and intervention should be targeted geographically.

Preliminary national surveillance data suggest that rates of gonorrhea may have increased in other states during 1994. Following the implementation of national gonorrhea screening programs in 1975, the national incidence of gonorrhea had decreased every year except two (1978 and 1985) (*4*). From 1990 to 1993, the national incidence decreased an average of 14.4% annually. However, during the first three quarters of 1994, the rate decreased only 0.9% compared with the same period in 1993. Of the 35 states reporting ≥1000 gonorrhea cases annually, 18 states (including Minnesota) reported an increase during the first three quarters of 1994 (Figure 2); only three states reported increases in 1992 and 1993.

The increases in reported cases in many states may reflect stabilization or slowing of the long-term decline in gonorrhea in the United States. Although sporadic cases of fluoroquinolone resistance have been reported, there is no evidence of widespread

Gonorrhea — Continued

FIGURE 2. Percentage change in rate of gonorrhea, by state — United States, 1993–1994*



*January through September each year.
†States reporting <1000 gonorrhea cases in 1993 were excluded; Georgia was excluded because no reports were received for 1994.

clinical resistance in the United States to currently recommended gonorrhea therapies (*7*); therefore, treatment failure probably is not a cause of the slowing decline in rates of gonorrhea.

In response to the recent increased incidence of gonorrhea in Minnesota, MDH is collecting standardized information from a sample of patients with STDs to assess demographic, behavioral, and geographic factors contributing to transmission. Other state health departments, especially those in areas with increasing rates in 1994, should assess trends in the occurrence of gonorrhea in local areas and communities with an emphasis on groups that have traditionally been at highest risk for gonorrhea.

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Gonorrhea — Continued

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Adult Blood Lead Epidemiology and Surveillance — United States, Fourth Quarter 1994

CDC's National Institute for Occupational Safety and Health (NIOSH) Adult Blood Lead Epidemiology and Surveillance (ABLES) program monitors elevated blood lead levels (BLLs) in adults in the United States. Blood lead data from laboratory reports are transmitted to state-based lead surveillance programs and are compiled by NIOSH for quarterly reporting (*1*).

The total number of elevated blood lead reports for 1994 increased 4% over 1993; this increase is attributed to the participation of two additional states (North Carolina and Oklahoma) (Table 1). The number of reports in 1994 increased 5% at lower BLLs (25–39 μg/dL and 40–49 μg/dL) and decreased 18% at higher BLLs (50–59 μg/dL and ≥60 μg/dL), compared with the number of reports in 1993.

Since 1988, the number of states with legislation requiring laboratories and physicians to report elevated BLLs in adults to state health departments has increased from four to 32. As of this report, 22 of these 32 states contribute to quarterly national re-

TABLE 1. Reports of elevated blood lead levels (BLLs) among adults — 22 states,* fourth quarter 1994

Reported BLL (μg/dL)	Fourth quarter 1994		Cumulative reports, fourth quarter 1994†		Cumulative reports, fourth quarter 1993†§	
	No. reports	No. persons¶	No.	(%)	No.	(%)
25–39	4,975	2,332	19,399	(72)	18,529	(72)
40–49	1,393	684	5,806	(22)	5,398	(21)
50–59	309	168	1,140	(4)	1,311	(5)
≥60	114	58	459	(2)	633	(2)
Total	**6,791**	**3,242**	**26,804**	**(100)**	**25,871**	**(100)**

*Alabama, Arizona, California, Connecticut, Illinois, Iowa, Maryland, Massachusetts, Michigan, New Hampshire, New Jersey, New York, North Carolina, Oklahoma, Oregon, Pennsylvania, South Carolina, Texas, Utah, Vermont, Washington, and Wisconsin.

†The cumulative number of reports for 1993 and 1994 have been revised in this report from the number previously reported (*2,3*). Additional reports for a specific quarter often are received by states after the quarterly reporting deadlines. These reports are included in the year-end cumulative totals to reflect updated quarterly reporting.

§Data for first quarter 1993 reported from 17 states (Alabama, Connecticut, Illinois, Iowa, Maryland, Massachusetts, Michigan, New Hampshire, New Jersey, New York, Oregon, Pennsylvania, South Carolina, Texas, Utah, Vermont, and Wisconsin). Data for second through fourth quarters 1993 also include reports from Arizona, California, and Washington.

¶Individual reports are categorized according to the highest reported BLL for a person during the given quarter. Pennsylvania provides only numbers of reports. Summaries of numbers of persons do not include Pennsylvania data.

Blood Lead Epidemiology — Continued

porting; 10 others are developing their capacity to report. Aggregation of state-specific data began in 1992 with 12 states providing quarterly data (*4*).

ABLES data have improved understanding of the magnitude of this public health problem; identified workplace-specific clusters of overexposures to lead; and resulted in follow-up investigations leading to either remedial activities by employers (*5*), identification of new sources of exposures (*6–8*), or enforcement actions by the Occupational Safety and Health Administration (*9*).

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