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MORBIDITY AND MORTALITY WEEKLY REPORT

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Current Trends

Raccoon Rabies Epizootic — United States, 1993

Although the incidence of rabies is low among domestic animals in the United States, the recent increase in the occurrence of wildlife rabies has increased the risk for infection of humans. From 1991 to 1992, the number of reported cases of rabies in raccoons increased 40%, from 3079 to 4311. Of the 8644 animals reported rabid during 1992, a total of 3759 (43%) were raccoons in the mid-Atlantic and northeastern states (*1*). This report describes the continuing spread of the raccoon rabies epizootic in the mid-Atlantic and northeastern states.

Connecticut. Rabies was first confirmed in raccoons in Connecticut in March 1991 and subsequently has been confirmed in raccoons in all towns but one west of the Connecticut River. Overall, the rabies epizootic in raccoons has involved six of eight counties and 129 of 169 towns. From 1992 to 1993, the number of confirmed cases of rabies in animals decreased 8% (from 831 to 762). Of the 1256 raccoons tested in 1993, 662 (53%) were positive for rabies. Since 1991, when the first case was detected in a raccoon, 1786 cases have been identified among animals, including 31 cases among domestic animals (22 cats, three dogs, three sheep, two horses, and one cow).

Massachusetts. Rabies was first confirmed in raccoons in Massachusetts in September 1992 in Ashby, near the New Hampshire border and more than 60 miles north of the nearest cases of raccoon rabies in Connecticut. During 1993, cases were confirmed in animals in 175 (50%) of 351 towns and 10 of 15 counties; cases were not detected in the southeastern counties. Overall, from 1992 to 1993, the number of confirmed cases increased nearly 17-fold, from 42 to 698. Of the 1486 raccoons tested in 1993, 585 (39%) were positive for rabies. Since September 1992, although most (623) cases have occurred in raccoons, cases also have been detected in skunks (81), cats (14), woodchucks (11), foxes (eight), and cattle (three).

New Hampshire. Rabies was first confirmed in raccoons in New Hampshire in April 1992 in Rumney in midstate. Cases subsequently have been detected in 48 towns in four counties in the southern region of the state. During 1993, 148 animals tested positive for rabies (103 [37%] of 278 raccoons, 32 skunks, five bats, three woodchucks, three cats, one pony, and one rabbit). At least one isolate from each species (except

Raccoon Rabies — Continued

bats) was characterized as the strain associated with the raccoon rabies epizootic. One cat had received one dose of rabies vaccine 8 months before onset of illness.

New York. Rabies was first confirmed in raccoons in New York in May 1990; since then, cases have been confirmed in animals in 50 of the 62 counties. In 1991 and 1992, rabies was confirmed in 666 and 1392 raccoons, respectively. In 1993, rabies was diagnosed in 2747 animals, comprising 17 species of mammals. Of the 4463 raccoons tested, 2369 (53%) were positive. From 1992 to 1993, the number of persons who received postexposure rabies prophylaxis increased from 1125 to 2905. In July 1993, a case of human rabies was attributed to a strain that characteristically infects silver-haired bats (*2*).

North Carolina. Since 1990, three distinct epizootics of rabies have occurred in animals in North Carolina: during 1990, the skunk rabies epizootic from the Midwest entered two counties of northwestern North Carolina from Tennessee and Virginia; during 1991, the raccoon rabies epizootic from the Mid-Atlantic entered northeastern North Carolina from Virginia; and during 1992, the raccoon rabies epizootic from the Southeast entered from South Carolina into two regions of southcentral and southeastern North Carolina. Since 1990, rabies has been detected in terrestrial animals in 22 of 100 counties; rabies was confirmed in terrestrial animals for the first time in eight of these counties in 1993. The number of rabies cases more than doubled each year during 1991–1993: 24 cases in 1991, 50 cases in 1992, and 106 cases in 1993. During 1993, 71 (18%) of 386 raccoons tested were positive. In addition, the number of rabid domestic animals—eight cats and two dogs—was the highest annual total reported in North Carolina since 1959; none of these animals had been vaccinated against rabies.

Reported by: ML Cartter, MD, GH Cooper, JL Hadler, MD, State Epidemiologist, Connecticut State Dept of Public Health and Addiction Svcs. M McGuill, DVM, A DeMaria, MD, State Epidemiologist, Massachusetts Dept of Public Health. MG Smith, MD, State Epidemiologist, New Hampshire State Dept of Health and Human Svcs. JG Debbie, DVM, DL Morse, MD, State Epidemiologist, New York State Dept of Health. JL Hunter, DVM, JN MacCormack, MD, State Epidemiologist, North Carolina Dept of Environment, Health, and Natural Resources. Viral and Rickettsial Zoonoses Br, Div of Viral and Rickettsial Diseases, National Center for Infectious Diseases, CDC.

Editorial Note: Since the introduction of the raccoon rabies epizootic in the mid-Atlantic region in 1977, cases have been identified in 11 states and the District of Columbia (Figure 1). Cases were first detected in West Virginia (1977) and subsequently in Virginia (1978), Maryland (1981), the District of Columbia (1982), Pennsylvania (1982), Delaware (1987), New Jersey (1989), New York (1990), Connecticut (1991), North Carolina (1991), Massachusetts (1992), and New Hampshire (1992). During January–February 1994, the first cases in Rhode Island were detected in two raccoons and a fox. In the Northeast, only Vermont and Maine remain unaffected by the raccoon rabies epizootic.

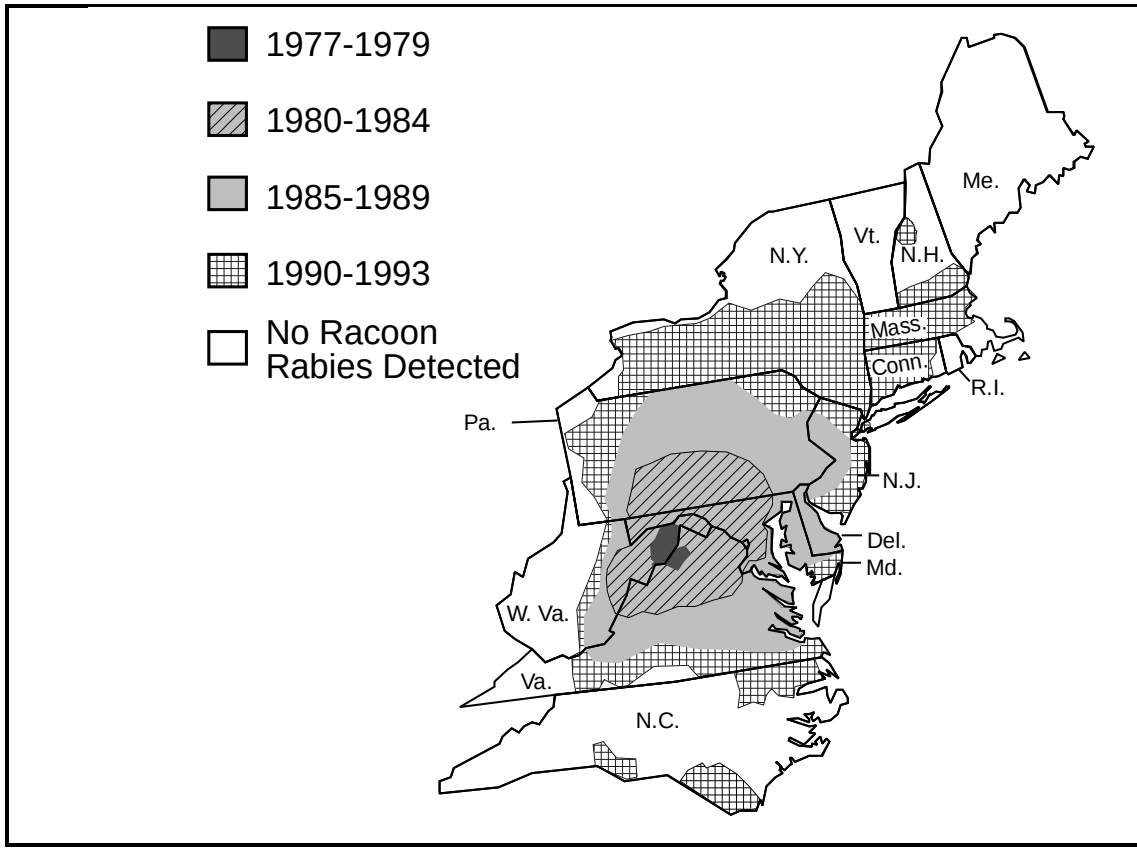
In 1990, raccoons surpassed skunks as the species in which rabies was detected most often in the United States, and the number of cases in raccoons continued to increase (Figure 2). Although the raccoon strain of rabies virus has been detected in many species, no known cases have occurred in humans. However, vaccination of dogs and cats remains important for the control and prevention of rabies because these domesticated species may serve as a link in rabies transmission between wildlife and humans.

Raccoon Rabies — Continued

Rabies control in wildlife through oral vaccination is being evaluated in the United States (*3*); this approach has been successful in controlling fox rabies in parts of Europe (*4*) and in Canada (*5*). In April 1992, a program to administer vaccinia-rabies glycoprotein recombinant vaccine orally to raccoons was initiated in Cape May County, New Jersey. Similar programs are being planned that would target raccoons in areas of Massachusetts and New York, coyotes in Texas (*6*), and foxes in New York and Vermont. Additional field trials of the oral rabies vaccine should establish distribution methods, the minimum effective geographic area, bait density, frequency, and time(s) of year for vaccination. These assessments will help determine the cost-effectiveness and appropriate use of oral wildlife vaccination. Population reduction of wildlife rabies reservoirs is not a recommended or cost-effective method for rabies control (*7*).

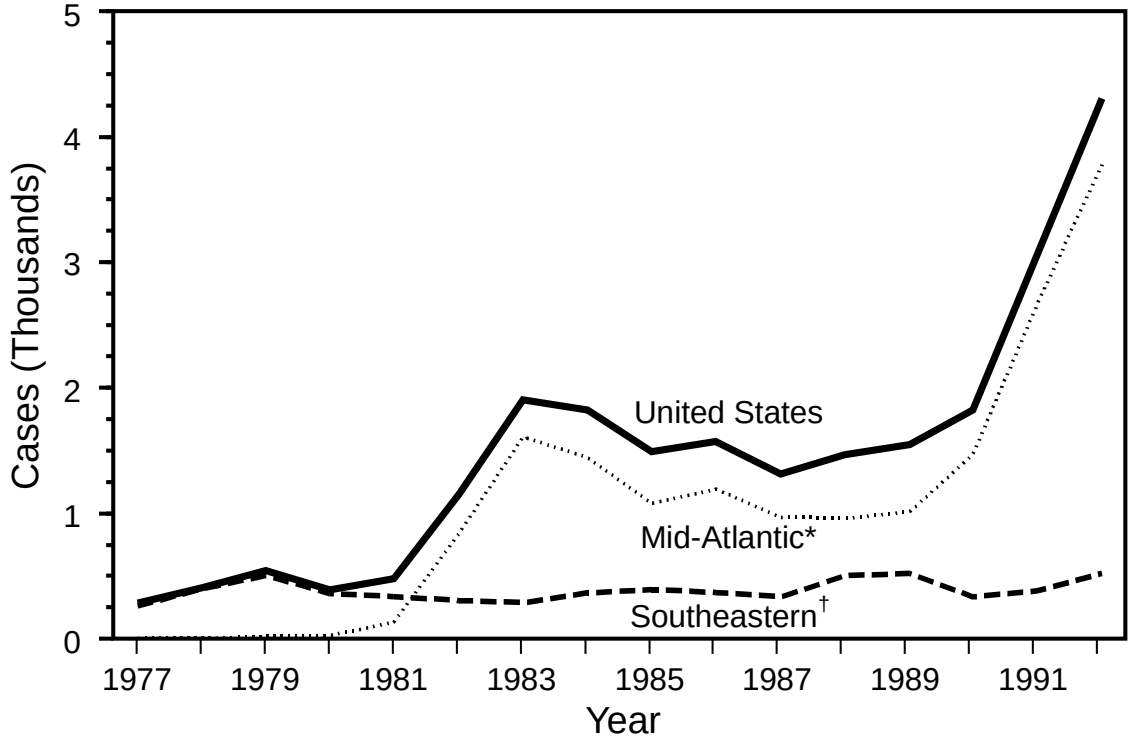
The costs of programs to prevent rabies have increased in parallel with the spread of the epizootic. For example, in New York, which in 1993 recorded the largest number of cases of rabies in wildlife ever reported by one state (*1*), the number of persons receiving postexposure rabies prophylaxis increased from 84 in 1989 to 2905 in 1993 (J.G. Debbie, D.V.M., New York State Department of Health, personal communication, 1994). In New Jersey, private and public expenditures associated with the raccoon rabies epizootic in two counties more than doubled from the pre-epizootic period ($405,565 per 100,000 population) to the epizootic period ($979,027 per 100,000 population) (*8*).

FIGURE 1. Spread of the raccoon rabies epizootic — mid-Atlantic and northeastern United States, 1977–1993



Raccoon Rabies — Continued

FIGURE 2. Number of rabies cases in raccoons, by year — United States and mid-Atlantic and southeastern regions, 1977–1992



*Connecticut, Delaware, District of Columbia, Maryland, Massachusetts, New Hampshire, New Jersey, New York, northern North Carolina, Pennsylvania, Virginia, and West Virginia.
†Alabama, Florida, Georgia, southern North Carolina, and South Carolina.

Rabies prevention activities at the state and local levels have been aimed at reducing exposure to rabies-infected animals and insuring proper treatment when exposure occurs. For example, in some states, vaccination requirements for both dogs and cats have been statutorily mandated. Health departments, in collaboration with veterinary associations and animal-control and animal-welfare groups, have provided educational materials to the public about wildlife rabies, pet vaccination, and recognition of exposures to potentially rabid animals. Education efforts have targeted veterinarians and physicians because they often are the first to be informed of possible rabies exposures.

State public health departments, state and local governments, CDC, and other federal agencies are collaborating to develop programs to control rabies epizootics (*9*). Information about rabies is available from state and local health departments and from CDC's Viral and Rickettsial Zoonoses Branch, Division of Viral and Rickettsial Diseases, National Center for Infectious Diseases; telephone (404) 639-1075.

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Raccoon Rabies — Continued

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Current Trends

Deaths from Breast Cancer — United States, 1991

Breast cancer is the most commonly diagnosed cancer and the second leading cause of cancer death among women in the United States (*1*). For 1990, the National Cancer Institute's (NCI) Surveillance, Epidemiology, and End Results Program (SEER) reported that the incidence of breast cancer was approximately 109 per 100,000 women (*2*). The annual incidence of breast cancer among women increased approximately 52% during 1950–1990, while the death rate increased 4% during the same period (*2*). This report summarizes epidemiologic information about deaths from breast cancer in 1991 and describes mortality trends during 1980–1991.

Decedents for whom the underlying cause of death was breast cancer (*International Classification of Diseases, Adapted, Ninth Revision*, codes 174.0–174.9) were identified from public-use mortality data tapes (*3*). Denominators for rate calculations were derived from U.S. census population estimates (*4,5*). Rates were directly standardized to the age distribution of the 1970 U.S. population and were analyzed by state, age group, year, and race. To increase the precision of the rates presented, race was characterized only as "white," "black," and "other."

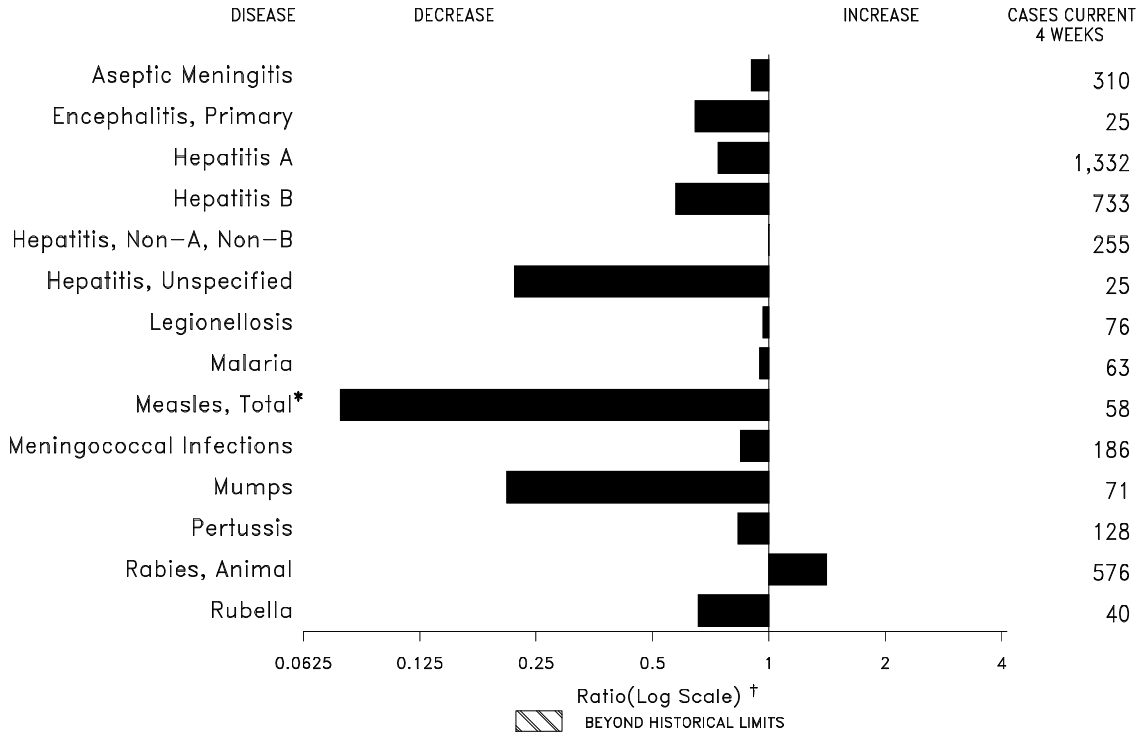
In 1991, 43,583 women died from breast cancer; the overall death rate was 27.0 per 100,000 women (Table 1, page 279). The death rate for black women (31.9) was 19% higher than for white women (26.8). Rates for black women and white women were 2.6 times and 2.2 times higher, respectively, than that for women of other races (12.4). Since 1981, this rank order of death rates by race has been consistent.

During 1980–1991, race-specific death rates for breast cancer among white women remained constant, increasing less than 1%. In comparison, from 1980 to 1991, rates for black women increased 21%, from 26.4 to 31.9 per 100,000 women, and rates for women of other races increased 29%, from 9.6 to 12.4.

In 1991, death rates for breast cancer were 15-fold higher for women aged ≥50 years (91.8) than for women aged <50 years (6.0) (Table 1, page 279). In both age categories, death rates were higher for black women than for white women and women of other races.

(Continued on page 279)

FIGURE I. Notifiable disease reports, comparison of 4-week totals ending April 16, 1994, with historical data — United States



*The large apparent decrease in 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 16, 1994 (15th Week)

	Cum. 1994		Cum. 1994
AIDS*	20,445	Measles: imported	11
Anthrax	-	indigenous	144
Botulism: Foodborne	10	Plague	1
Infant	15	Poliomyelitis, Paralytic§	-
Other	6	Psittacosis	7
Brucellosis	16	Rabies, human	-
Cholera	3	Syphilis, primary & secondary	5,646
Congenital rubella syndrome	3	Syphilis, congenital, age < 1 year	-
Diphtheria	-	Tetanus	8
Encephalitis, post-infectious	36	Toxic shock syndrome	74
Gonorrhea	101,974	Trichinosis	23
Haemophilus influenzae (invasive disease)†	327	Tuberculosis	4,688
Hansen Disease	33	Tularemia	3
Leptospirosis	10	Typhoid fever	83
Lyme Disease	828	Typhus fever, tickborne (RMSF)	32

*Updated monthly; last update March 29, 1994.
†Of 305 cases of known age, 91 (30%) were reported among children less than 5 years of age.
§No cases of suspected poliomyelitis have been reported in 1994; 3 cases of suspected poliomyelitis have been reported in 1993; 4 of the 5 suspected cases with onset in 1992 were confirmed; the confirmed cases were vaccine associated.

TABLE II. Cases of selected notifiable diseases, United States, weeks ending April 16, 1994, and April 17, 1993 (15th 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. 1994	Cum. 1994	Cum. 1994	Cum. 1994	Cum. 1994	Cum. 1993	Cum. 1994	Cum. 1994	Cum. 1994	Cum. 1994	Cum. 1994	Cum. 1994
UNITED STATES	20,445	1,345	150	36	101,974	112,629	5,396	3,112	1,220	107	397	828
NEW ENGLAND	697	50	5	2	2,309	2,260	92	143	39	13	14	111
Maine	28	5	1	-	16	27	11	4	-	-	-	-
N.H.	22	2	-	1	-	18	2	7	6	-	-	4
Vt.	10	5	-	-	8	11	-	-	-	-	-	1
Mass.	337	18	3	-	859	874	44	129	26	13	11	57
R.I.	83	20	1	1	115	114	12	3	7	-	3	15
Conn.	217	-	-	-	1,311	1,216	23	-	-	-	-	34
MID. ATLANTIC	5,899	138	21	11	13,269	11,089	295	310	161	4	56	512
Upstate N.Y.	537	52	8	1	2,414	2,216	129	109	75	-	13	318
N.Y. City	3,661	3	1	-	3,839	3,355	21	12	-	-	-	-
N.J.	1,203	-	-	-	1,209	1,892	74	101	66	-	7	83
Pa.	498	83	12	10	5,807	3,626	71	88	20	4	36	111
E.N. CENTRAL	1,670	252	43	8	18,323	22,980	478	297	82	2	107	9
Ohio	296	69	15	-	6,903	6,645	160	60	3	-	61	8
Ind.	286	55	2	-	2,365	2,245	103	57	2	-	13	-
Ill.	767	33	11	2	3,710	7,686	105	36	3	1	4	-
Mich.	230	91	15	6	4,780	4,523	73	98	72	1	25	1
Wis.	91	4	-	-	565	1,881	37	46	2	-	4	-
W.N. CENTRAL	426	88	5	1	5,274	5,919	241	172	60	2	51	13
Minn.	106	5	1	-	948	779	52	15	4	-	-	4
Iowa	13	33	-	-	409	515	8	10	4	1	20	1
Mo.	163	25	-	-	2,790	3,214	127	126	46	1	21	6
N. Dak.	27	1	1	-	-	16	1	-	-	-	2	-
S. Dak.	4	-	1	-	45	58	10	-	-	-	-	-
Nebr.	29	2	1	1	-	179	24	8	2	-	7	-
Kans.	84	22	1	-	1,082	1,158	19	13	4	-	1	2
S. ATLANTIC	4,056	325	26	12	29,080	30,315	367	792	289	13	89	149
Del.	53	1	-	-	518	374	4	11	19	-	1	40
Md.	298	49	5	1	5,463	4,889	46	100	11	4	23	40
D.C.	304	8	-	-	1,944	1,599	8	13	-	-	-	1
Va.	249	47	10	5	3,915	2,722	39	28	14	1	2	12
W. Va.	7	6	-	-	203	185	3	7	9	-	1	3
N.C.	384	50	10	-	7,096	6,967	29	86	25	-	7	19
S.C.	325	7	-	-	3,529	2,627	9	12	1	-	1	-
Ga.	547	11	1	-	-	4,128	34	360	150	-	36	32
Fla.	1,889	146	-	6	6,412	6,824	195	175	60	8	18	2
E.S. CENTRAL	549	86	15	1	12,761	11,510	137	338	242	1	21	4
Ky.	105	35	5	1	1,272	1,340	58	12	4	-	1	2
Tenn.	154	22	6	-	3,736	2,693	44	304	236	1	13	1
Ala.	155	21	4	-	4,780	4,626	18	22	2	-	5	1
Miss.	135	8	-	-	2,973	2,851	17	-	-	-	2	-
W.S. CENTRAL	2,674	83	6	-	11,563	13,674	768	315	97	25	11	8
Ark.	65	6	-	-	1,914	2,528	13	7	2	-	4	-
La.	304	3	1	-	3,811	3,222	28	35	20	1	-	-
Okla.	57	-	-	-	494	953	62	102	53	-	7	7
Tex.	2,248	74	5	-	5,344	6,971	665	171	22	24	-	1
MOUNTAIN	609	43	2	-	1,704	3,302	1,109	136	108	6	22	4
Mont.	8	-	-	-	29	13	9	7	1	-	9	-
Idaho	15	1	-	-	18	37	89	22	33	1	-	1
Wyo.	5	-	-	-	28	23	6	6	35	-	1	-
Colo.	292	6	-	-	733	1,120	66	7	7	2	1	-
N. Mex.	43	6	-	-	298	304	320	54	14	2	1	3
Ariz.	124	18	-	-	-	1,136	436	17	4	-	1	-
Utah	33	3	-	-	101	87	123	10	10	-	1	-
Nev.	89	9	2	-	497	582	60	13	4	1	8	-
PACIFIC	3,865	280	27	1	7,691	11,580	1,909	609	142	41	26	18
Wash.	209	-	-	-	887	1,082	121	27	22	-	5	-
Oreg.	103	-	-	-	289	448	93	13	2	1	-	-
Calif.	3,477	219	26	-	6,041	9,763	1,614	545	114	38	19	18
Alaska	10	12	1	-	240	137	69	4	-	-	-	-
Hawaii	66	49	-	1	234	150	12	20	4	2	2	-
Guam	-	-	-	-	31	36	1	-	-	4	-	-
P.R.	608	7	-	-	139	156	18	84	19	3	-	-
V.I.	24	-	-	-	8	23	-	1	-	-	-	-
Amer. Samoa	-	-	-	-	7	7	4	-	-	-	-	-
C.N.M.I.	1	-	-	-	16	18	2	-	-	-	-	-

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

*Updated monthly; last update March 29, 1994.

TABLE II. (Cont'd.) Cases of selected notifiable diseases, United States, weeks ending April 16, 1994, and April 17, 1993 (15th Week)

Reporting Area	Malaria	Measles (Rubeola)					Menin-gococcal Infections	Mumps		Pertussis			Rubella		
		Indigenous		Imported*		Total									
	Cum. 1994	1994	Cum. 1994	1994	Cum. 1994	Cum. 1993	Cum. 1994	1994	Cum. 1994	1994	Cum. 1994	Cum. 1993	1994	Cum. 1994	Cum. 1993
UNITED STATES	272	26	144	-	11	93	955	17	343	24	829	894	7	105	57
NEW ENGLAND	25	-	8	-	-	46	57	1	10	9	78	226	6	74	1
Maine	1	-	-	-	-	-	7	-	3	-	2	5	-	-	1
N.H.	3	-	-	-	-	-	1	1	4	4	23	101	-	-	-
Vt.	1	-	-	-	-	27	1	-	-	1	9	37	-	-	-
Mass.	8	-	2	-	-	10	25	-	-	4	38	73	6	74	-
R.I.	4	U	3	U	-	1	-	U	1	U	2	3	U	-	-
Conn.	8	-	3	-	-	8	23	-	2	-	4	7	-	-	-
MID. ATLANTIC	37	1	22	-	2	9	93	3	34	5	198	139	-	6	15
Upstate N.Y.	12	1	3	-	-	1	32	-	5	2	82	48	-	6	1
N.Y. City	2	-	1	-	-	2	3	-	-	-	34	5	-	-	8
N.J.	13	-	18	-	1	6	21	-	-	-	-	26	-	-	5
Pa.	10	-	-	-	1	-	37	3	29	3	82	60	-	-	1
E.N. CENTRAL	26	-	8	-	3	4	144	1	59	3	135	199	1	7	1
Ohio	5	-	6	-	-	-	35	-	8	-	59	72	-	-	-
Ind.	6	-	-	-	1	-	35	1	4	3	30	11	-	-	-
Ill.	7	-	-	-	-	4	44	-	29	-	15	33	-	2	-
Mich.	7	-	-	-	1	-	14	-	18	-	20	14	1	5	-
Wis.	1	-	2	-	1	-	16	-	-	-	11	69	-	-	1
W.N. CENTRAL	16	-	-	-	1	2	66	-	13	1	25	31	-	-	1
Minn.	4	-	-	-	-	-	5	-	-	-	8	-	-	-	-
Iowa	3	-	-	-	-	-	5	-	4	1	2	1	-	-	-
Mo.	7	-	-	-	-	1	36	-	7	-	8	14	-	-	1
N. Dak.	-	-	-	-	-	-	-	-	1	-	-	2	-	-	-
S. Dak.	-	-	-	-	-	-	5	-	-	-	-	1	-	-	-
Nebr.	1	-	-	-	1	-	4	-	1	-	1	4	-	-	-
Kans.	1	-	-	-	-	1	11	-	-	-	6	9	-	-	-
S. ATLANTIC	67	-	9	-	-	14	161	5	66	3	122	58	-	5	5
Del.	2	-	-	-	-	-	-	-	-	-	-	-	-	-	2
Md.	30	-	-	-	-	1	13	2	15	3	40	22	-	-	1
D.C.	7	-	-	-	-	-	1	-	-	-	3	-	-	-	-
Va.	8	-	1	-	-	1	23	2	16	-	13	5	-	-	-
W. Va.	-	-	-	-	-	-	7	1	3	-	2	1	-	-	-
N.C.	2	-	-	-	-	-	32	-	20	-	34	9	-	-	-
S.C.	2	-	-	-	-	-	5	-	5	-	8	5	-	-	-
Ga.	7	-	-	-	-	-	28	-	2	-	6	9	-	-	-
Fla.	9	-	8	-	-	12	52	-	5	-	16	7	-	5	2
E.S. CENTRAL	7	-	27	-	1	-	68	-	4	-	24	38	-	-	-
Ky.	2	-	-	-	-	-	15	-	-	-	3	8	-	-	-
Tenn.	3	-	27	-	1	-	18	-	-	-	13	18	-	-	-
Ala.	1	-	-	-	-	-	29	-	-	-	7	8	-	-	-
Miss.	1	-	-	-	-	-	6	-	4	-	1	4	-	-	-
W.S. CENTRAL	8	-	5	-	2	1	123	2	81	-	26	15	-	4	8
Ark.	-	U	-	U	-	-	17	U	-	U	-	1	U	-	-
La.	-	-	-	-	1	1	18	-	7	-	3	4	-	-	-
Okla.	3	-	-	-	-	-	10	-	21	-	20	10	-	4	1
Tex.	5	-	5	-	1	-	78	2	53	-	3	-	-	-	7
MOUNTAIN	8	25	59	-	-	2	67	-	8	-	50	56	-	1	4
Mont.	-	-	-	-	-	-	2	-	-	-	2	-	-	-	-
Idaho	2	-	-	-	-	-	10	-	3	-	20	11	-	1	1
Wyo.	-	-	-	-	-	-	2	-	-	-	-	1	-	-	-
Colo.	1	-	-	-	-	2	5	-	-	-	9	21	-	-	-
N. Mex.	2	-	-	-	-	-	5	N	N	-	6	13	-	-	-
Ariz.	-	-	-	-	-	-	29	-	-	-	9	6	-	-	-
Utah	3	25	59	-	-	-	10	-	2	-	4	4	-	-	2
Nev.	-	-	-	-	-	-	4	-	3	-	-	-	-	-	1
PACIFIC	78	-	6	-	2	15	176	5	68	3	171	132	-	8	22
Wash.	1	-	-	-	-	-	15	-	2	-	11	8	-	-	-
Oreg.	5	-	-	-	-	-	25	N	N	2	20	-	-	-	1
Calif.	62	-	6	-	2	4	130	3	58	1	136	119	-	7	14
Alaska	-	-	-	-	-	-	1	-	2	-	-	1	-	-	1
Hawaii	10	-	-	-	-	11	5	2	6	-	4	4	-	1	6
Guam	-	U	1	U	-	-	-	U	2	U	-	-	U	-	-
P.R.	-	-	13	-	-	135	3	-	2	-	1	-	-	-	-
V.I.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Amer. Samoa	-	U	-	U	-	1	-	U	1	U	1	2	U	-	-
C.N.M.I.	1	U	26	U	-	-	-	U	-	U	-	-	U	-	-

*For measles only, imported cases include 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 April 16, 1994, and April 17, 1993 (15th Week)

Reporting Area	Syphilis (Primary & Secondary)		Toxic-Shock Syndrome	Tuberculosis		Tula-remia	Typhoid Fever	Typhus Fever (Tick-borne) (RMSF)	Rabies, Animal
	Cum. 1994	Cum. 1993	Cum. 1994	Cum. 1994	Cum. 1993	Cum. 1994	Cum. 1994	Cum. 1994	Cum. 1994
UNITED STATES	5,646	8,148	74	4,688	5,423	3	83	32	1,630
NEW ENGLAND	59	129	2	91	84	-	10	2	526
Maine	1	2	-	-	7	-	-	-	-
N.H.	-	15	-	2	5	-	-	-	64
Vt.	-	-	-	-	1	-	-	-	51
Mass.	17	63	2	46	32	-	6	2	201
R.I.	5	3	-	8	18	-	1	-	5
Conn.	36	46	-	35	21	-	3	-	205
MID. ATLANTIC	399	695	12	843	1,094	-	16	-	176
Upstate N.Y.	41	71	6	63	158	-	3	-	-
N.Y. City	200	448	-	490	659	-	7	-	-
N.J.	39	121	-	162	113	-	6	-	96
Pa.	119	55	6	128	164	-	-	-	80
E.N. CENTRAL	663	1,327	19	489	592	-	20	4	7
Ohio	294	349	8	68	81	-	1	2	-
Ind.	75	114	1	43	53	-	1	-	-
Ill.	152	532	4	264	330	-	9	1	3
Mich.	96	193	6	104	109	-	3	1	2
Wis.	46	139	-	10	19	-	6	-	2
W.N. CENTRAL	320	534	10	109	93	3	-	1	42
Minn.	14	30	-	27	8	-	-	-	1
Iowa	15	28	6	9	5	-	-	1	19
Mo.	266	403	3	50	51	3	-	-	5
N. Dak.	-	-	-	1	4	-	-	-	-
S. Dak.	-	-	-	6	6	-	-	-	2
Nebr.	-	8	1	3	5	-	-	-	-
Kans.	25	65	-	13	14	-	-	-	15
S. ATLANTIC	1,709	2,145	5	720	1,150	-	14	20	553
Del.	6	38	-	-	9	-	-	-	4
Md.	77	114	-	91	110	-	2	-	177
D.C.	71	135	-	37	50	-	1	-	2
Va.	211	181	-	88	141	-	-	1	118
W. Va.	6	1	-	25	24	-	-	-	21
N.C.	555	571	1	98	121	-	-	10	56
S.C.	200	343	-	108	105	-	-	-	54
Ga.	307	376	-	251	216	-	-	9	113
Fla.	276	386	4	22	374	-	11	-	8
E.S. CENTRAL	1,155	902	1	244	328	-	-	3	30
Ky.	75	76	-	90	85	-	-	-	2
Tenn.	281	196	1	1	62	-	-	2	-
Ala.	208	246	-	112	122	-	-	-	28
Miss.	591	384	-	41	59	-	-	1	-
W.S. CENTRAL	1,146	1,856	-	481	387	-	4	2	208
Ark.	133	345	-	73	46	-	-	1	8
La.	567	707	-	-	-	-	2	-	30
Okla.	15	111	-	51	35	-	-	1	15
Tex.	431	693	-	357	306	-	2	-	155
MOUNTAIN	57	67	2	119	154	-	6	-	23
Mont.	-	-	-	-	5	-	-	-	-
Idaho	1	-	1	4	2	-	-	-	-
Wyo.	-	1	-	2	1	-	-	-	5
Colo.	46	22	1	1	19	-	2	-	-
N. Mex.	5	12	-	26	18	-	-	-	-
Ariz.	-	29	-	57	67	-	1	-	17
Utah	5	2	-	-	9	-	1	-	-
Nev.	-	1	-	29	33	-	2	-	1
PACIFIC	138	493	23	1,592	1,541	-	13	-	65
Wash.	9	15	-	60	69	-	1	-	-
Oreg.	2	26	-	35	21	-	-	-	-
Calif.	125	448	20	1,411	1,352	-	11	-	45
Alaska	1	2	-	19	12	-	-	-	20
Hawaii	1	2	3	67	87	-	1	-	-
Guam	1	-	-	7	16	-	-	-	-
P.R.	88	170	-	-	44	-	-	-	19
V.I.	9	16	-	-	2	-	-	-	-
Amer. Samoa	-	-	-	-	1	-	1	-	-
C.N.M.I.	1	-	-	14	7	-	1	-	-

U: Unavailable

TABLE III. Deaths in 121 U.S. cities,* week ending April 16, 1994 (15th Week)

Reporting Area	All Causes, By Age (Years)						P&I† Total
	All Ages	≥65	45-64	25-44	1-24	<1	
NEW ENGLAND	605	429	97	49	16	14	61
Boston, Mass.	157	104	30	17	-	6	19
Bridgeport, Conn.	34	23	7	2	1	1	3
Cambridge, Mass.	25	20	4	1	-	-	3
Fall River, Mass.	23	16	5	1	1	-	1
Hartford, Conn.	56	35	11	7	3	-	-
Lowell, Mass.	24	19	5	-	-	-	1
Lynn, Mass.	20	15	5	-	-	-	-
New Bedford, Mass.	24	24	-	-	-	-	5
New Haven, Conn.	62	37	9	10	2	4	3
Providence, R.I.	56	45	5	3	3	-	9
Somerville, Mass.	5	3	-	2	-	-	-
Springfield, Mass.	34	21	8	3	2	-	3
Waterbury, Conn.	34	26	3	2	2	1	8
Worcester, Mass.	51	41	5	1	2	2	6
MID. ATLANTIC	2,713	1,756	530	311	60	55	116
Albany, N.Y.	54	36	10	6	1	1	1
Allentown, Pa.	23	20	3	-	-	-	-
Buffalo, N.Y.	107	86	15	2	3	1	3
Camden, N.J.	33	20	7	2	2	2	1
Elizabeth, N.J.	23	15	4	4	-	-	-
Erie, Pa.§	44	36	7	-	1	-	-
Jersey City, N.J.	65	35	19	6	-	5	-
New York City, N.Y.	1,366	850	281	180	33	22	46
Newark, N.J.	89	36	22	24	3	4	6
Paterson, N.J.	26	12	7	4	1	2	3
Philadelphia, Pa.	409	268	79	46	9	7	27
Pittsburgh, Pa.§	80	50	14	7	3	6	2
Reading, Pa.	11	9	1	-	1	-	1
Rochester, N.Y.	134	100	16	13	1	3	14
Schenectady, N.Y.	33	28	3	2	-	-	-
Scranton, Pa.§	33	27	4	2	-	-	1
Syracuse, N.Y.	100	70	24	3	2	1	8
Trenton, N.J.	35	23	4	7	-	1	3
Utica, N.Y.	16	13	3	-	-	-	-
Yonkers, N.Y.	32	22	7	3	-	-	-
E.N. CENTRAL	2,346	1,453	449	247	137	60	131
Akron, Ohio	69	48	9	2	3	7	-
Canton, Ohio	30	25	3	2	-	-	4
Chicago, Ill.	548	223	117	118	83	7	37
Cincinnati, Ohio	87	64	13	1	5	4	9
Cleveland, Ohio	138	96	16	16	7	3	2
Columbus, Ohio	214	141	44	18	7	4	10
Dayton, Ohio	134	97	25	7	3	2	7
Detroit, Mich.	224	125	52	30	13	4	4
Evansville, Ind.	58	47	4	2	1	4	3
Fort Wayne, Ind.	68	44	17	3	3	1	2
Gary, Ind.	15	11	1	3	-	-	-
Grand Rapids, Mich.	59	37	15	3	2	2	9
Indianapolis, Ind.	208	138	46	14	3	7	20
Madison, Wis.	61	36	18	2	2	3	5
Milwaukee, Wis.	128	97	22	6	1	2	8
Peoria, Ill.	43	35	5	2	-	1	1
Rockford, Ill.	51	39	9	2	1	-	3
South Bend, Ind.	56	41	8	5	1	1	2
Toledo, Ohio	97	69	14	9	2	3	5
Youngstown, Ohio	58	40	11	2	-	5	-
W.N. CENTRAL	739	532	118	46	23	20	39
Des Moines, Iowa	55	41	8	4	2	-	2
Duluth, Minn.	40	31	4	-	4	1	3
Kansas City, Kans.	31	20	5	6	-	-	-
Kansas City, Mo.	111	75	18	14	2	2	9
Lincoln, Nebr.	39	27	7	3	1	1	7
Minneapolis, Minn.	179	137	28	5	5	4	10
Omaha, Nebr.	70	50	12	2	3	3	3
St. Louis, Mo.	120	84	22	3	4	7	-
St. Paul, Minn.	54	40	7	5	1	1	4
Wichita, Kans.	40	27	7	4	1	1	1

Reporting Area	All Causes, By Age (Years)						P&I† Total
	All Ages	≥65	45-64	25-44	1-24	<1	
S. ATLANTIC	1,247	741	263	158	51	34	76
Atlanta, Ga.	161	93	33	26	6	3	6
Baltimore, Md.	177	99	38	25	9	6	15
Charlotte, N.C.	68	37	18	6	5	2	8
Jacksonville, Fla.	131	91	22	8	5	5	9
Miami, Fla.	140	67	33	35	4	1	-
Norfolk, Va.	49	29	8	6	4	2	1
Richmond, Va.	79	52	17	4	4	2	5
Savannah, Ga.	36	23	6	7	-	-	4
St. Petersburg, Fla.	54	42	8	2	1	1	2
Tampa, Fla.	182	119	42	15	2	4	21
Washington, D.C.	163	84	38	23	10	8	5
Wilmington, Del.	7	5	-	1	1	-	-
E.S. CENTRAL	744	474	165	69	20	16	56
Birmingham, Ala.	121	71	30	11	5	4	2
Chattanooga, Tenn.	53	37	8	6	1	1	4
Knoxville, Tenn.	88	59	16	9	2	2	9
Lexington, Ky.	86	53	19	7	2	5	12
Memphis, Tenn.	172	106	42	19	5	-	14
Mobile, Ala.	65	44	11	7	3	-	6
Montgomery, Ala.	40	25	13	2	-	-	1
Nashville, Tenn.	119	79	26	8	2	4	8
W.S. CENTRAL	1,552	964	302	185	56	44	91
Austin, Tex.	90	58	13	15	2	2	3
Baton Rouge, La.	70	51	5	10	2	2	5
Corpus Christi, Tex.	42	28	8	2	2	2	1
Dallas, Tex.	204	119	41	26	12	6	6
El Paso, Tex.	73	49	17	7	-	-	9
Ft. Worth, Tex.	101	70	15	9	4	3	3
Houston, Tex.	431	229	100	67	19	15	34
Little Rock, Ark.	70	44	16	7	1	2	8
New Orleans, La.	163	104	31	17	9	2	-
San Antonio, Tex.	161	116	29	9	3	4	11
Shreveport, La.	62	32	15	11	1	3	4
Tulsa, Okla.	85	64	12	5	1	3	7
MOUNTAIN	949	625	186	88	31	19	74
Albuquerque, N.M.	101	70	14	12	5	-	5
Colo. Springs, Colo.	55	39	12	2	1	1	7
Denver, Colo.	99	61	20	8	5	5	8
Las Vegas, Nev.	190	122	44	18	4	2	12
Ogden, Utah	17	15	1	1	-	-	2
Phoenix, Ariz.	187	109	40	27	8	3	17
Pueblo, Colo.	29	20	7	1	-	1	1
Salt Lake City, Utah	110	73	19	10	5	3	11
Tucson, Ariz.	161	116	29	9	3	4	11
PACIFIC	1,772	1,187	304	173	58	45	113
Berkeley, Calif.	22	18	1	2	-	1	-
Fresno, Calif.	88	60	11	7	7	3	5
Glendale, Calif.	31	21	5	4	1	-	3
Honolulu, Hawaii	91	36	18	17	7	13	1
Long Beach, Calif.	71	48	10	7	5	1	10
Los Angeles, Calif.	571	381	114	47	18	6	25
Pasadena, Calif.	15	12	2	1	-	-	3
Portland, Oreg.	140	105	18	13	-	4	7
Sacramento, Calif.	190	127	33	19	7	4	18
San Diego, Calif.	104	65	19	11	3	6	9
San Francisco, Calif.	U	U	U	U	U	U	U
San Jose, Calif.	151	101	26	17	2	5	19
Santa Cruz, Calif.	24	15	6	3	-	-	1
Seattle, Wash.	132	102	14	11	4	1	4
Spokane, Wash.	52	39	7	4	2	-	3
Tacoma, Wash.	90	57	20	10	2	1	5
TOTAL	12,667¶	8,161	2,414	1,326	452	307	757

*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.

Breast Cancer — Continued

TABLE 1. Number of breast cancer deaths* and age-adjusted death rates†, by race§ and age group — United States, 1991

Race	No. deaths	Rate		
		Total	Age group (yrs)	
			<50	≥50
White	38,250	**26.8**	5.7	92.0
Black	4,809	**31.9**	9.1	102.1
Other	519	**12.4**	3.7	39.0
Total	**43,583¶**	**27.0**	**6.0**	**91.8**

* *International Classification of Diseases, Adapted, Ninth Revision*, codes 174.0–174.9.
† Per 100,000 women, adjusted to the 1970 U.S. population.
§ To increase the precision of the rates presented, race was categorized only as "white," "black," and "other."
¶ Five deaths occurred among persons of unknown race.

Death rates varied from 17.6 in Hawaii to 35.9 in the District of Columbia (Table 2). Based on regional analysis, rates were highest in the Northeast. For white women, death rates ranged from 20.4 in Hawaii to 32.9 in New Jersey and for women of races other than white*, from 14.5 in Washington to 39.6 in the District of Columbia. For women aged <50 years, rates ranged from 2.8 in Alaska to 10.7 in the District of Columbia, and for women aged ≥50 years, from 58.5 in Hawaii to 113.1 in New Jersey.

Reported by: Cancer Surveillance Section, Epidemiology and Statistics Br, Div of Cancer Prevention and Control, National Center for Chronic Disease Prevention and Health Promotion, CDC.

Editorial Note: The findings in this report indicate that, in 1991, death rates for breast cancer varied substantially by race. These variations may reflect race-specific differences in stage of disease at diagnosis, survival rates, and prevalence of risk factors for breast cancer. For example, a SEER report for 1990† (the most recent year for which data are available) indicated substantial differences in the 5-year relative survival rate for white women (80.5%) compared with black women (64.1%). In addition, stage-specific data from SEER§ indicated survival among white women exceeded that for black women at all stages, and among white women breast cancer was more likely to be diagnosed at an earlier stage (*2*).

Differences in state-specific death rates for breast cancer in 1991 may reflect factors that include racial composition, socioeconomic status, and access to and use of breast cancer screening and treatment. For example, for races other than white, the rate was highest in the District of Columbia, where 97% of the female residents in this combined category were black, and lowest in Washington, where 30% of the female residents in this category were black.

Established risk factors for breast cancer include family history of breast cancer, history of benign breast disease, prior history of breast cancer, exposure to ionizing radiation, early age at menarche, late age at menopause, late age at first live birth, nulliparity, white race, and high socioeconomic status (*1,6*). Because many of these

* Because of the small number of breast cancer deaths among women in other racial/ethnic groups and small populations of these groups in some states, the categories "black" and "other races" were combined for this state-specific analysis.
† For women with breast cancer diagnosed during 1983–1989.
§ For women with breast cancer diagnosed during 1983–1987.

Breast Cancer — Continued

TABLE 2. Number of breast cancer deaths* and age-adjusted death rates†, by state, race, and age group — United States, 1991

State	No. deaths	Rate				
		Race		Age group (yrs)		
		White	Other than white§	<50	≥50	Total
Alabama	691	24.1	31.7	6.6	85.0	**25.8**
Alaska	33	24.0	¶	2.8	¶	**20.2**
Arizona	551	24.7	17.1	6.6	78.7	**24.3**
Arkansas	398	21.6	32.9	6.2	75.0	**23.1**
California	4,303	26.6	20.3	5.6	87.7	**25.7**
Colorado	505	27.3	21.0	5.9	92.5	**27.1**
Connecticut	615	27.4	22.4	5.8	93.0	**27.2**
Delaware	125	28.8	¶	4.2	¶	**29.0**
District of Columbia	144	¶	39.6	10.7	¶	**35.9**
Florida	2,629	24.9	25.1	6.2	83.2	**25.1**
Georgia	932	24.6	26.2	7.1	80.5	**25.0**
Hawaii	111	20.4	16.5	4.3	58.5	**17.6**
Idaho	150	25.5	¶	5.1	87.3	**25.2**
Illinois	2,270	30.2	31.1	6.5	104.7	**30.5**
Indiana	964	25.6	27.1	5.6	88.0	**25.7**
Iowa	554	26.4	¶	6.1	88.7	**26.3**
Kansas	422	24.7	18.9	5.6	82.8	**24.5**
Kentucky	577	24.0	30.2	5.8	81.7	**24.4**
Louisiana	683	24.9	32.7	7.8	86.4	**27.1**
Maine	220	26.2	¶	5.8	88.5	**26.1**
Maryland	834	27.5	32.3	6.8	96.4	**28.7**
Massachusetts	1,323	31.1	30.1	6.1	108.7	**31.2**
Michigan	1,634	27.7	32.2	5.9	97.7	**28.4**
Minnesota	787	27.4	33.8	5.7	95.6	**27.7**
Mississippi	408	22.4	30.8	5.5	85.0	**25.0**
Missouri	984	26.5	34.5	5.4	94.4	**27.2**
Montana	120	22.0	¶	3.9	79.7	**22.4**
Nebraska	276	25.0	¶	5.2	86.2	**25.0**
Nevada	165	25.0	¶	2.9	88.1	**23.8**
New Hampshire	203	29.7	¶	6.1	102.3	**29.6**
New Jersey	1,778	32.9	32.2	6.9	113.1	**32.9**
New Mexico	195	23.4	¶	6.1	74.4	**22.8**
New York	3,646	30.2	26.3	5.9	103.2	**29.7**
North Carolina	1,132	26.3	27.0	6.6	87.9	**26.5**
North Dakota	122	28.5	¶	7.1	¶	**29.1**
Ohio	2,023	27.3	26.7	5.6	94.0	**27.3**
Oklahoma	496	25.1	17.9	5.6	81.6	**24.2**
Oregon	487	25.3	¶	5.3	85.2	**24.8**
Pennsylvania	2,633	28.5	36.1	6.3	99.8	**29.2**
Rhode Island	237	31.4	¶	8.2	103.8	**31.6**
South Carolina	595	25.9	33.8	7.2	92.3	**28.0**
South Dakota	113	20.7	¶	4.3	71.5	**20.8**
Tennessee	827	23.8	37.1	6.5	84.4	**25.6**
Texas	2,250	23.1	30.6	5.7	80.5	**24.0**
Utah	197	25.4	¶	4.6	87.4	**24.9**
Vermont	98	27.3	¶	6.1	¶	**27.2**
Virginia	1,050	27.8	30.1	6.7	94.8	**28.2**
Washington	777	26.4	14.5	5.9	86.7	**25.6**
West Virginia	330	25.1	¶	6.6	81.9	**25.1**
Wisconsin	918	27.8	20.4	5.2	96.4	**27.5**
Wyoming	68	26.4	¶	8.7	¶	**26.0**
Total	**43,583**	**26.8**	**27.6**	**6.0**	**91.8**	**27.0**

* *International Classification of Diseases, Adapted, Ninth Revision,* codes 174.0–174.9.
† Per 100,000 women, adjusted to the 1970 U.S. population.
§ Because of the small number of breast cancer deaths among women in other racial/ethnic groups and small populations of these groups in some states, the categories "black" and "other races" were combined for this state-specific analysis.
¶ Less than 100,000 in denominator or less than five cases.

Breast Cancer — Continued

established risk factors are not alterable, secondary prevention is the current strategy for reducing mortality associated with breast cancer.

Programs to reduce breast cancer mortality should emphasize the role of routine mammography screening to detect breast cancer at earlier, more treatable stages. The importance of this approach is underscored by findings from SEER indicating a 5-year relative survival rate of 93.2% for women with local disease compared with 18.2% for women with distant disease (*2*). Randomized clinical trials of breast cancer screening demonstrate an approximately 30% reduction in mortality for women aged 50–69 years; however, there has been no statistically significant decrease among women aged 40–49 years (*7*). For women aged ≥50 years, routine screening with mammography and clinical breast examination has been recommended every 1–2 years (*1,8*).

A national health objective for the year 2000 is to reduce breast cancer deaths to no more than 25.2 per 100,000 (baseline: 27.2 in 1987) (objective 16.3); specific age, racial/ethnic, and socioeconomic groups have been targeted for increases in screening (objective 16.11) (*9*). Recent results of the Behavioral Risk Factor Surveillance System indicate that in 1992, a median of 56% of women aged ≥50 years reported having had a mammogram and clinical breast examination within the preceding 2 years (*10*). Based on the rapid increases in screening during the 1980s, breast cancer death rates could be reduced by the mid-1990s (*2*).

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Current Trends

Vaccination Coverage of 2-Year-Old Children — United States, 1992–1993

The principal goal of the Childhood Immunization Initiative (CII) is to increase, by 1996, vaccination levels for 2-year-old children to at least 90% for the most critical doses in the vaccination series (i.e., one dose of measles-mumps-rubella vaccine [MMR] and at least three doses each of diphtheria and tetanus toxoids and pertussis vaccine [DTP], oral poliovirus vaccine [OPV], and *Haemophilus influenzae* type b vaccine [Hib]) and to at least 70% for at least three doses of hepatitis B vaccine (Hep B) (*1*). Since 1991, annual national estimates of vaccination coverage levels of preschool-aged children have been available through the National Health Interview Survey (NHIS) conducted by CDC (*2,3*). This report presents vaccination coverage levels of children aged 19–35 months for 1992 and provisional estimates of vaccination coverage for the combined first and second quarters of 1993 (Table 1).

Vaccination coverage increased for three vaccines from 1992 to 1993: for three or more doses of Hib, from 28.0% to 49.9% ($p<0.05$); for three or more doses of poliomyelitis vaccine, from 72.4% to 78.4% ($p<0.05$); and for three or more doses of DTP/diphtheria and tetanus toxoids (DT), from 83.0% to 87.2% ($p>0.05$). Coverage with measles-containing vaccine decreased from 82.5% to 80.8% ($p>0.05$). Among 19–35-month-olds, 12.7% had received three or more doses of Hep B.

From 1992 to 1993, the proportion of children who had received a combined series of four or more doses of DTP/DT, three or more doses of polio vaccine, and one dose of MMR increased from 55.3% to 64.8% ($p<0.05$), primarily because of increased coverage with the fourth DTP/DT dose (from 59.0% to 71.1% [$p<0.05$]).

TABLE 1. Vaccination levels of children aged 19–35 months, by selected vaccines — United States, 1992 and 1993*

	1992		1993	
Vaccine	**%**	**(95% CI†)**	**%**	**(95% CI)**
DTP/DT§				
≥3 doses	83.0	(80.8–85.2)	87.2	(84.3–90.4)
≥4 doses	59.0	(56.1–61.9)	71.1	(67.1–75.1)
Poliomyelitis				
≥3 doses	72.4	(70.1–74.7)	78.4	(74.8–82.0)
***Haemophilus influenzae* type b**				
≥3 doses	28.2	(25.6–30.9)	49.6	(45.4–53.8)
Measles-containing	82.5	(80.2–84.8)	80.8	(77.2–84.4)
Hepatitis B				
≥3 doses	—	—	12.7	(9.4–16.0)
3 DTP/3 polio/1 MMR¶	68.7	(66.2–71.2)	72.0	(68.1–75.9)
4 DTP/3 polio/1 MMR	55.3	(52.5–58.1)	64.8	(60.6–68.9)

*Provisional data based on first and second quarters.
†Confidence interval.
§Diphtheria and tetanus toxoids and pertussis vaccine/Diphtheria and tetanus toxoids.
¶Measles-mumps-rubella vaccine.

Vaccination Coverage — Continued

Reported by: National Immunization Program; Div of Health Interview Statistics, National Center for Health Statistics, CDC.

Editorial Note: In 1993, processing of the NHIS was modified to produce national vaccination coverage estimates for each quarter. The findings in this report represent the first provisional quarterly estimates and indicate substantial progress in efforts to attain the 1996 antigen-specific vaccination goals for DTP and polio vaccine. However, coverage with measles-containing vaccines has not improved since 1991, when 82.0% of 2-year-old children were reported to be vaccinated.

Although the coverage levels for Hib and hepatitis B remain suboptimal, the levels described in this report may underestimate coverage because many children were born before the recommendations for universal infant vaccination that were promulgated in October 1990 (*4*) and November 1991 (*5*). Less than 1% of 19–35-month-old children surveyed during January–June 1993 were born after recommendations for universal infant vaccination against hepatitis B went into effect. Similarly, only approximately two thirds of the children aged 19–35 months included in this survey were born after October 1990—when Hib was approved for infants.

Provisional results from NHIS for the first two quarters of 1993 indicate that the combined efforts of public and private health-care providers at local, state, and national levels have facilitated progress toward both the 1996 CII goal and the year 2000 national health objective to increase vaccination levels for 2-year-olds to 90% (objective 20.11) for the complete series of recommended vaccine doses against all nine diseases (i.e., four or more doses of DTP, three or more doses of OPV, three or more doses of Hib, one dose of MMR, and three or more doses of Hep B) (*6*). However, based on the reported 1993 coverage levels, approximately 1.25 million children require at least one dose of OPV, and 1.12 million require a dose of measles-containing vaccine; approximately 740,000 children have not received at least three doses of DTP/DT. These findings emphasize the need for public and private health-care providers and local, state, and national public health officials to collaborate on implementation of the CII to achieve higher levels of vaccination coverage among 2-year-olds.

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