CENTERS FOR DISEASE CONTROL

November 28, 1986 / Vol. 35 / No. 47

MMWR

MORBIDITY AND MORTALITY WEEKLY REPORT

Epidemiologic Notes and Reports

Influenza Activity in Civilian and Military Populations and Key Points for Use of Influenza Vaccines

Investigation of influenza-like illness in military personnel has confirmed infections with the A/Taiwan/86(H1N1)-like variant. These outbreaks have provided additional evidence supporting the use of the 1986-1987 supplemental monovalent influenza vaccine in recommended high-risk groups of young adults and also in young adults providing health care or other essential services.

Asia. During April and May 1986, influenza-like activity was reported among military personnel stationed at three U.S. Air Force bases in the Philippines and Japan. Paired sera were collected from eight ill individuals, including five persons who had been vaccinated with trivalent influenza vaccine between October 1985 and January 1986. The geometric mean titer (GMT) determined from hemagglutination inhibition (HI) test results for the acute-phase sera from the vaccinated personnel was 140 for the A/Chile/83(H1N1) antigen and 35 for A/Taiwan/86. Convalescent-phase sera showed a four-fold increase in the GMT (560) for A/Chile/83 and a ten-fold rise in the GMT (370) for A/Taiwan/86. These findings provide circumstantial evidence that illnesses were caused by infections with A/Taiwan/86-like viruses.

Florida. Between October 10 and November 7, 1986, at least 52 active duty personnel at the Key West Naval Base experienced a respiratory illness characterized by feverishness, cough, and sore throat or myalgias. Thirty-four ill persons were members of one 111-person squadron that was interviewed after an outbreak of influenza-like illness, and the others were identified by reviewing the Naval Medical Clinic records. A/Taiwan/86-like virus was isolated from three of four nasopharyngeal cultures collected on November 5 from ill persons. Patients in the squadron ranged from 19 to 39 years of age; 88% of them were <35 years of age. Onset of illnesses occurred from October 19 to November 2. Supplemental monovalent A/Taiwan/86(H1N1) vaccine had not yet been used. The attack rate among squadron members who had been vaccinated with the 1986-1987 trivalent influenza vaccine—which contains A/Chile/83 antigen as its type A(H1N1) component—was 36.5% (23/63); among the unvaccinated, the attack rate was 33.3%(11/33). Other differences between the vaccinated and unvaccinated groups that might affect illness rates were not identified.

Control measures implemented on the naval base included recommending that all active

Influenza – Continued

duty service members <35 years of age be vaccinated with the supplemental monovalent influenza A(H1N1) vaccine. All military dependents who were <35 years of age and also in defined high-risk groups and all health care workers <35 years of age were also vaccinated and received a 14-day course of amantadine chemoprophylaxis beginning at the time of vaccination.

Other Reports—United States. Influenza type A(H1N1) virus also has been isolated from patients during outbreaks of influenza-like illness in two other states. In Massachusetts, virus was isolated in mid-November from one student in each of two Boston colleges. Large increases in the numbers of students seen with influenza-like illness were noted at the time the specimens were collected. In New York City, virus was isolated from two young-adult inmates who were ill in mid-November during an ongoing outbreak of influenza-like illness in an adolescent detention center. During the outbreaks in Massachusetts, New York, and Key West, Florida, there was no apparent spread to surrounding communities where influenza-like illness continued to occur at sporadic levels.

Influenza type A(H1N1) virus was also isolated in association with sporadically occurring cases in Oregon, New York, and Texas. In Oregon, virus was isolated in early November from a teenage patient living near Portland. In New York City, from late October to mid-November, type A(H1N1) virus was isolated from five children and two young adults. In Houston, Texas, active surveillance has identified a total of 15 type A(H1N1) virus isolates collected from residents (nearly all children) during late October to mid-November.

Influenza type B virus has been identified from ill persons in California and Texas. In California, virus was isolated from a 77-year-old resident of San Joaquin County who was ill in mid-October. In Texas, a man returning by air from South America in early November had influenza soon after arriving in Houston. His son developed influenza two days later; type B virus was isolated from both father and son.

Reported by HM1 RD Huff, USN, Dept of Environmental and Occupational Health, Naval Medical Clinic, Key West, Florida; CDR RL Buck, MC, USN, LCDR DH Trump, MC, USN, Epidemiology Dept, Navy Environmental and Preventive Medicine Unit, No. 2, Norfolk, Virginia; Epidemiology Div, Disease Surveillance Br, Laboratory Br-Virology Section, USAF School of Aerospace Medicine, Brooks Air Force Base, Texas; EE Buff, MS, E Wyner, MT, V Mock, M Wilder, MD, MS, Acting State Epidemiologist, Florida State Dept of Health and Rehabilitative Svcs; B Daidone, K Bromberg, MD, Kings County Hospital, C Braslow, MD, I Spigland, MD, Montefiore Hospital, S Schultz, MD, New York City Dept of Health, D Morse, MD, State Epidemiologist, New York State Dept of Health; V Berardi, L Mofensen, MD, P Etkind, G Grady, MD, State Epidemiologist, Massachusetts Dept of Public Health; Influenza Research Center, Baylor College of Medicine, Houston, C Alexander, MD, State Epidemiologist, Texas Dept of Health; R Schieble, PhD, R Murray, PhD, J Chin, MD, State Epidemiologist, California Dept of Health Svcs; B Matsuda, MR Skeels, PhD, DW Fleming, MD, LR Foster, MD, MPH, State Epidemiologist, Oregon Dept of Human Resources; Div of Field Services, Epidemiology Program Office, WHO Collaborating Center for Influenza, Influenza Br, Div of Viral Diseases, Center for Infectious Diseases, CDC.

Editorial Note: Influenza A/Taiwan/86(H1N1)-like viruses were first isolated in Asia in early 1986. These viruses circulated in the western pacific region until about mid-year and caused illness primarily in children and young adults living in the region (*1,2*). Because there is a high degree of antigenic variation between the A/Taiwan/86-like viruses and the A/Chile/83 (H1N1) component of the trivalent 1986-1987 influenza vaccine, a supplemental monovalent vaccine containing A/Taiwan/86(H1N1) virus antigen was recommended, particularly for high-risk children and young adults.

The Key West report is the first outbreak of influenza-like illness identified in the United States during the 1986-1987 influenza season, and isolation of influenza A/Taiwan/86-like virus from three of four patients identified this as the etiologic agent. In late September and early October, the U.S. Navy implemented its 1986-1987 trivalent influenza immunization program; the supplemental monovalent influenza immunization program had not yet begun. The finding of similar attack rates among persons receiving the trivalent vaccine and non-

Influenza — Continued

vaccinated persons is consistent with previous serologic data (*3*). It is also consistent with reported data for Air Force personnel that high post-vaccination antibody titers against A/Chile/83 in young adults do not guarantee protection against infection by A/Taiwan/86-like virus.

It is important to note that the influenza vaccination policy of the Armed Forces of the United States differs from the Immunization Practices Advisory Committee (ACIP) recommendations. In addition to following the ACIP recommendations for civilian dependents and health care personnel, the Armed Forces recommend routine vaccination for all military personnel because of the need to prevent influenza outbreaks that could impair a unit's ability to carry out its mission. The decision to give the monovalent A/Taiwan/86 vaccine to all service members <35 years of age stationed at the Key West facility during the outbreak is in keeping with this policy.

The ACIP recommendations for the civilian population are intended to protect individuals who, because of existing medical conditions, are at high risk for severe influenza and serious complications. The presence of influenza type A(H1N1) outbreaks and type B virus infections in the United States emphasizes the need for all high-risk individuals to receive appropriate vaccination, including trivalent vaccine. Although this information has been published previously in the MMWR (*2,4,5*), it is important to re-emphasize the following key points:

- High-risk persons of all ages should receive the standard trivalent vaccine according to previously published ACIP recommendations.
- The Public Health Service (PHS) urges health care personnel who treat high-risk children or high-risk adults <35 years of age to provide both trivalent and supplemental A(H1N1) influenza vaccines to their patients.
- Vaccination with the trivalent vaccine should not be delayed if the supplemental vaccine is not available at the time the trivalent vaccine would normally be given.
- Supplemental vaccination is of potential benefit to many other groups of young persons to reduce morbidity if A(H1N1) outbreaks occur. The potential for introducing influenza to high-risk patients could be reduced by vaccinating young adult parents and siblings of high-risk children; young health care personnel who provide care for young, high-risk patients; and young employees who perform essential services in the public or private sector.
- There is no special emphasis by the PHS to provide the supplemental vaccine to adults ≥ 35 years of age. However, it may be used in this group either as an added precaution, if the physician and patient so desire, or on the basis of institutional or other local policy decisions. (To date, the elderly have not been involved in the first reported influenza A(H1N1) infections in the United States.)
- Aspirin use during influenza, influenza-like illnesses, and chickenpox has been associated with Reye syndrome (*6*), a rare but serious disease. Therefore, the PHS warns that children and teenagers ≤ 18 years of age should not use aspirin or aspirin-containing medications for the treatment of these illnesses (*7*).

References

1. CDC. Antigenic variation of recent influenza A(H1N1) viruses. MMWR 1986;35:510-2.
2. CDC. Update: influenza activity—Micronesia, United States. MMWR 1986;35:685-7.
3. CDC. Update: influenza activity—worldwide. MMWR 1986;35:433-4.
4. ACIP. Prevention and control of influenza. MMWR 1986;35:317-26, 331.
5. ACIP. Monovalent influenza A(H1N1) vaccine, 1986-1987. MMWR 1986;35:517-21.
6. Hurwitz ES, Barrett MJ, Bregman D, et al. Public Health Service study on Reye's syndrome and medications. Report of the pilot phase. N Engl J Med 1985;313:849-57.
7. CDC. Reye syndrome—United States, 1985. MMWR 1986;35:66-8,73-4.

Dengue in the Americas, 1985

The Americas experienced increased dengue activity in 1985 with 68,998 cases reported as compared to 43,435 cases in 1984 and 25,216 cases in 1983. In 1985, as in 1983 and 1984, three serotypes (DEN-1, DEN-2, and DEN-4) circulated in the region. Twenty countries reported dengue activity, and the serotype was confirmed by virus isolation and/or serology in 14. Although all three serotypes were widely distributed in 1985, DEN-1 continued to be the predominant virus serotype in the region. Three countries (Mexico, Puerto Rico, and Venezuela) had three serotypes circulating simultaneously (DEN-1, DEN-2, and DEN-4), while five other countries had at least two serotypes (Table 1).

Nicaragua and Aruba experienced major dengue epidemics in 1985. Small numbers of cases with severe and fatal hemorrhagic disease were reported in both countries. The Nicaraguan Ministry of Health reported 17,483 cases of dengue, most of which occurred late in the year. DEN-1 was the predominant virus isolated (18 strains), but DEN-2 was also isolated (8 strains). In addition, seven cases of fatal hemorrhagic disease in adults were reported, and one was confirmed as DEN-1 by virus isolation. Aruba, Netherland Antilles, reported 24,000 cases of dengue during a DEN-1 epidemic that began in late 1984 and continued through March 1985. There was one virologically confirmed case of fatal hemorrhagic disease (DEN-1) in an adult female. A sibling of this patient died of a similar hemorrhagic disease 3 weeks earlier; however, the disease was not confirmed as dengue.

Dengue transmission continued in Mexico, but to a lesser extent than in the previous 2 years. Honduras and El Salvador also reported dengue activity. In South America, both Colombia and Venezuela had confirmed dengue transmission. While three serotypes were confirmed in Venezuela, no outbreaks were reported. Beginning in October, the southern port city of Tumaco, Colombia, experienced a mixed outbreak of DEN-1 and DEN-2. A total of 7,797

TABLE 1. Reported cases of dengue in the Americas by country, 1985

Country	Number of cases	Virus serotypes
Aruba	24,000	DEN-1
Bonaire	6	DEN-1
Colombia	7,797	DEN-1, DEN-2
Dominica	1	DEN-2
Dominican Republic	92	DEN-2, DEN-4
El Salvador	425	*
French Guiana	Sporadic	*
Guadeloupe	216	*
Haiti	20	DEN-2, †
Honduras	307	*
Martinique	Sporadic	*
Mexico	16,182	DEN-1, DEN-2, DEN-4
Nicaragua	17,483	DEN-1, DEN-2
Puerto Rico	2,371	DEN-1, DEN-2, DEN-4
St. Christopher-Nevis	2	*
St. Martin	2	DEN-2
Trinidad and Tobago	7	DEN-1, DEN-2
United States	48	DEN-1, DEN-4
U.S. Virgin Islands	39	DEN-1
Venezuela	Sporadic	DEN-1, DEN-2, DEN-4
Total	**68,998**	

*No information on virus serotypes for these countries.

†Serologically determined.

Dengue — Continued

cases were reported in the whole country in 1985. DEN-2 was the predominant serotype isolated in Colombia in 1985.

With the exception of a small outbreak in Puerto Rico, dengue activity in the Antilles islands remained sporadic in 1985. In Puerto Rico, 133 cases were confirmed from late August through December. Two cases of hemorrhagic disease in children were confirmed by virus isolation—one DEN-1 with a primary-type serologic response and one DEN-2 with a secondary-type response. Forty-eight cases of suspected dengue were reported in the United States. However, only eight cases were confirmed, and all of these had been imported.

Clinically, most of the illness reported in the Americas in 1985 was of the classical type. However, there appears to be increased sporadic incidence of hemorrhagic disease associated with dengue infection in most countries of the region.

Reported by Pan American Health Organization, Washington, DC; Caribbean Epidemiology Center, Port-of-Spain, Trinidad; Pasteur Institute, Cayenne, French Guiana; Instituto de Salubridad y Enfermedades Tropicales, Mexico City, Mexico; Instituto Nacional de Salud, Bogota, Colombia; Instituto Nacional de Higiene "Rafael Rangel," Caracas, Venezuela; Institute of Tropical Medicine "Pedro Kouri," Havana, Cuba; Puerto Rico Health Dept, San Juan, Puerto Rico; Dengue Br, Div of Vector-Borne Viral Diseases, Center for Infectious Diseases, CDC.

Editorial Note: For the past several years, dengue transmission in the Americas has been characterized by more frequent epidemic activity. More countries have been reporting severe hemorrhagic disease, and the total number of cases of severe hemorrhagic disease has increased. The number of circulating dengue virus serotypes has also increased. In Asia, dengue fever changed from a benign flu-like illness to become one of the leading causes of morbidity and mortality among southeast Asian children. The current epidemiologic pattern of dengue in the Americas is similar to the pattern that occurred in southeast Asia in the 1950s.

It is often believed that the highest risk for dengue hemorrhagic fever (DHF) is associated with DEN-2 infection. This serotype, while widespread in the region, has only occurred sporadically in recent years. Although secondary infection with DEN-2 is a definite risk factor for DHF, most severe and fatal cases of DHF in 1984 and 1985 were caused by DEN-1 or DEN-4. Furthermore, DEN-3 has been shown to cause severe and fatal DHF in some countries of southeast Asia. Thus, health authorities should assume that all four serotypes are capable of causing epidemics of DHF, and they should act to establish proper surveillance for the disease.

Aedes albopictus (*1,2*), an efficient Asian mosquito host for dengue viruses, has recently been discovered in the United States and Brazil. This aggressive, man-biting mosquito has both rural and urban habitats. It also has been shown to transmit dengue viruses both transovarially (from female mosquitoes to their offspring through infection of the eggs) and from man to man. If *Ae. albopictus* becomes involved in dengue transmission in the Americas, then the situation in this region would become even more similar to the situation in southeast Asia. The presence of *Ae. albopictus* in the Americas adds further stimulus for surveillance of dengue and DHF in the region.

References

1. CDC. *Aedes albopictus* infestation—United States, Brazil. MMWR 1986;35:493-5.
2. CDC. *Aedes albopictus* introduction—Texas. MMWR 1986;35:141-2.

Turtle-Associated Salmonellosis — Ohio

On June 6, 1986, two cases of turtle-associated salmonellosis were reported in Columbus, Ohio. A 2-year-old boy became ill with fever, abdominal pain, and bloody diarrhea 4 days after his mother had purchased a pet turtle from a local pet store. His 4-year-old brother developed similar symptoms the next day.

Salmonellosis — Continued

Stool cultures from both boys yielded *Salmonella typhimurium*. Following investigation by the Ohio Department of Health, *S. typhimurium* was isolated from the turtle and from a water sample taken from the turtle bowl in the children's home. All four isolates of *S. typhimurium* had the same plasmid profile. The turtle was a red-eared slider, *Trachemys scripta elegans* (formerly *Pseudemys scripta elegans* [*1*]), with a carapace diameter of 2 inches.

When investigators from the Food and Drug Administration and the Ohio Department of Health visited the pet store, no more turtles were available. The store owner had purchased the turtles from a local distributor who sells reptiles primarily to local universities and other institutions for scientific purposes. The invoice for the sale of the turtles to the pet store stated that the turtles were to be used for scientific purposes only.

Local health departments in Ohio were notified that turtles might be for sale illegally in their jurisdictions. No other cases of turtle-associated salmonellosis have been reported in Ohio.

Reported by LK Giljahn, MPH, Infectious Disease Epidemiology Unit, TJ Halpin, MD, MPH, State Epidemiologist, Ohio Dept of Health; Food and Drug Administration; Enteric Diseases Br, Div of Bacterial Diseases, Center for Infectious Diseases, CDC.

(Continued on page 739)

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

Disease	47th Week Ending			Cumulative, 47th Week Ending		
	Nov. 22, 1986	Nov. 23, 1985	Median 1981-1985	Nov. 22, 1986	Nov. 23, 1985	Median 1981-1985
Acquired Immunodeficiency Syndrome (AIDS)	314	190	N	11,976	7,171	N
Aseptic meningitis	267	152	157	9,564	9,458	8,822
Encephalitis: Primary (arthropod-borne & unspec.)	21	32	32	1,103	1,211	1,412
Post-infectious	1	1	1	92	111	82
Gonorrhea: Civilian	18,714	18,530	16,090	803,818	804,825	815,862
Military	376	428	382	15,326	19,130	22,005
Hepatitis: Type A	400	407	407	20,312	20,581	20,581
Type B	469	556	461	23,040	23,613	21,574
Non A, Non B	51	65	N	3,143	3,705	N
Unspecified	94	99	123	4,015	5,186	6,561
Legionellosis	23	24	N	721	693	N
Leprosy	5	4	3	224	338	217
Malaria	16	19	13	1,012	939	939
Measles: Total*	31	6	27	5,879	2,670	2,501
Indigenous	31	3	N	5,588	2,238	N
Imported	-	3	N	291	432	N
Meningococcal infections: Total	38	48	51	2,183	2,150	2,461
Civilian	38	48	51	2,181	2,143	2,446
Military	-	-	-	2	7	12
Mumps	147	52	58	4,711	2,657	2,987
Pertussis	31	57	21	3,910	3,210	2,114
Rubella (German measles)	12	3	13	474	597	906
Syphilis (Primary & Secondary): Civilian	542	557	557	24,407	24,354	27,997
Military	1	2	6	144	147	346
Toxic Shock syndrome	5	5	N	311	338	N
Tuberculosis	453	533	428	19,844	19,285	21,060
Tularemia	10	1	1	150	167	251
Typhoid fever	5	10	6	284	350	361
Typhus fever, tick-borne (RMSF)	8	3	4	730	671	947
Rabies, animal	57	114	83	4,911	4,914	5,515

TABLE II. Notifiable diseases of low frequency, United States

	Cum. 1986		Cum. 1986
Anthrax	-	Leptospirosis (Tex. 1)	36
Botulism: Foodborne (Calif. 1)	18	Plague	7
Infant (Utah 1, Wash. 2, Calif. 1)	61	Poliomyelitis, Paralytic	1
Other	1	Psittacosis (Fla. 1)	85
Brucellosis (Ark. 1, Tex. 1)	77	Rabies, human	-
Cholera	3	Tetanus (Fla. 1)	58
Congenital rubella syndrome	10	Trichinosis	31
Congenital syphilis, ages < 1 year	107	Typhus fever, flea-borne (endemic, murine)	45
Diphtheria	-		

* There were no cases of internationally imported measles reported for this week.

TABLE III. Cases of specified notifiable diseases, United States, weeks ending November 22, 1986 and November 23, 1985 (47th Week)

Reporting Area	AIDS	Aseptic Meningitis	Encephalitis		Gonorrhea (Civilian)		Hepatitis (Viral), by type				Legionellosis	Leprosy
			Primary	Post-infectious			A	B	NA,NB	Unspecified		
	Cum 1986	1986	Cum 1986	Cum 1986	Cum 1986	Cum 1985	1986	1986	1986	1986	1986	Cum 1986
UNITED STATES	11,976	267	1,103	92	803,818	804,825	400	469	51	94	23	224
NEW ENGLAND	473	14	27	3	21,611	20,531	13	43	2	8	1	8
Maine	20	1	2	-	789	1,049	-	4	1	-	-	-
N H	13	-	2	-	520	520	-	-	-	-	-	-
Vt	5	1	4	2	243	304	-	1	-	-	-	-
Mass	254	7	5	-	7,828	8,517	7	31	-	8	1	8
R I	29	2	-	-	1,690	1,660	3	1	1	-	-	-
Conn	152	3	14	1	10,541	8,481	3	6	-	-	-	-
MID ATLANTIC	4,414	26	97	9	140,047	115,974	30	31	3	29	3	17
Upstate N Y	485	17	35	5	16,817	16,465	22	12	2	8	-	1
N Y City	2,997	1	19	1	81,396	56,466	1	3	1	21	3	15
N J	664	8	10	-	17,745	17,300	7	16	-	-	-	-
Pa	268	-	33	3	24,089	25,743	-	-	-	-	-	1
E N CENTRAL	719	58	337	11	104,401	105,890	14	38	5	7	5	4
Ohio	154	21	130	3	27,024	29,102	3	9	-	2	1	-
Ind	59	7	79	3	11,349	11,425	1	10	3	2	2	-
Ill	342	-	50	4	25,047	24,758	4	6	1	-	-	4
Mich	127	30	52	1	33,522	30,405	6	13	1	3	2	1
Wis	37	-	26	-	7,207	10,200	-	-	-	-	-	-
W N CENTRAL	219	13	79	9	34,598	37,754	5	11	-	1	-	4
Minn	83	1	33	-	4,959	5,557	1	5	-	-	-	2
Iowa	18	1	25	-	3,562	4,021	-	4	-	-	-	-
Mo	72	7	2	-	17,056	18,238	-	-	-	-	-	-
N Dak	2	-	4	-	286	256	-	-	-	-	-	-
S Dak	2	1	11	-	711	725	2	1	-	-	-	-
Nebr	11	-	1	1	2,602	3,257	1	-	-	1	-	-
Kans	31	3	3	8	5,422	5,700	1	1	-	-	-	2
S ATLANTIC	1,708	46	141	37	208,456	209,947	49	131	10	9	12	3
Del	22	1	6	-	3,425	4,081	6	2	-	-	-	-
Md	159	9	31	1	24,710	26,648	2	29	-	1	-	-
D C	222	1	-	1	15,573	14,483	1	5	-	-	-	-
Va	137	11	38	1	16,965	17,606	6	20	2	1	5	1
W Va	7	-	45	-	2,035	2,388	1	1	-	-	1	-
N C	71	4	17	2	32,239	33,341	1	14	-	-	3	-
S C	46	-	-	-	17,779	19,669	3	9	5	-	-	-
Ga	266	9	-	1	34,487	40,828	3	21	-	-	-	-
Fla	778	11	4	31	61,243	50,903	26	30	3	7	3	2
E S CENTRAL	147	17	61	4	64,417	69,845	3	26	4	1	-	1
Ky	28	2	30	1	7,080	8,023	3	7	-	-	-	-
Tenn	70	14	8	1	24,377	26,710	-	11	2	1	-	-
Ala	25	-	22	2	18,895	21,056	-	6	2	-	-	1
Miss	24	1	1	-	14,065	14,056	-	2	-	-	-	-
W S CENTRAL	1,067	47	179	6	92,902	101,838	66	58	10	17	1	23
Ark	29	-	-	2	8,900	9,565	3	5	-	-	-	1
La	142	-	15	-	15,961	19,228	4	-	-	2	-	1
Okla	41	5	21	-	10,723	11,332	2	8	3	-	-	-
Tex	855	42	143	4	57,318	61,713	57	45	7	15	1	21
MOUNTAIN	313	8	38	1	23,783	25,501	46	22	2	1	1	13
Mont	4	-	1	1	623	724	1	-	1	-	-	-
Idaho	3	-	-	-	800	889	3	1	-	-	-	-
Wyo	4	-	2	-	493	588	-	1	-	-	-	-
Colo	146	3	5	-	6,090	7,374	-	2	1	-	-	3
N Mex	23	-	3	-	2,501	2,845	9	2	-	-	-	-
Ariz	80	4	18	-	7,674	7,731	29	14	-	1	-	7
Utah	18	-	7	-	1,022	1,234	2	1	-	-	-	1
Nev	35	1	2	-	4,580	4,116	2	1	-	-	1	2
PACIFIC	2,916	38	144	12	113,603	117,545	174	109	15	21	-	151
Wash	157	7	13	-	8,367	9,127	11	12	5	2	-	16
Oreg	55	-	-	-	4,957	5,884	38	1	-	-	-	-
Calif	2,642	29	123	12	96,923	98,176	120	93	8	19	-	105
Alaska	12	-	7	-	2,431	2,810	5	1	2	-	-	-
Hawaii	50	2	1	-	1,177	1,548	-	2	-	-	-	29
Guam	-	-	-	-	190	180	-	-	-	-	-	1
P R	139	-	5	1	2,198	2,871	-	3	-	3	-	7
V I	5	-	-	-	250	373	-	-	-	-	-	-
Pac Trust Terr	-	-	-	-	428	766	-	-	-	3	-	56
Amer Samoa	-	-	-	-	51	-	-	-	-	-	-	3

N Not notifiable U Unavailable

TABLE III. (Cont'd.) Cases of specified notifiable diseases, United States, weeks ending November 22, 1986 and November 23, 1985 (47th Week)

Reporting Area	Malaria	Measles (Rubeola)					Menin-gococcal Infections	Mumps		Pertussis			Rubella		
		Indigenous		Imported *		Total									
	Cum. 1986	1986	Cum. 1986	1986	Cum. 1986	Cum. 1985	Cum. 1986	1986	Cum. 1986	1986	Cum. 1986	Cum. 1985	1986	Cum. 1986	Cum. 1985
UNITED STATES	1,012	31	5,588	-	291	2,670	2,183	147	4,711	31	3,910	3,210	12	474	597
NEW ENGLAND	61	-	88	-	16	126	154	3	65	-	157	203	-	9	12
Maine	2	-	12	-	1	1	27	-	-	-	2	9	-	-	-
N.H.	3	-	43	-	-	-	6	-	14	-	81	112	-	1	2
Vt.	2	-	-	-	-	-	18	-	4	-	3	3	-	1	-
Mass.	32	-	24	-	13	118	42	2	14	-	41	46	-	4	6
R.I.	7	-	2	-	-	-	20	1	11	-	6	22	-	2	-
Conn.	15	-	7	-	2	7	41	-	22	-	24	11	-	1	4
MID ATLANTIC	141	-	1,729	-	34	232	344	4	198	1	197	239	1	37	228
Upstate N.Y.	48	-	77	-	24	85	122	2	65	-	124	113	-	27	18
N.Y. City	31	-	723	-	4	79	70	-	29	-	10	29	-	5	185
N.J.	37	-	905	-	4	28	30	2	50	-	18	11	1	5	11
Pa.	25	-	24	-	2	40	122	-	54	1	45	86	-	-	14
E.N. CENTRAL	61	17	1,079	-	28	562	316	36	3,084	-	367	785	-	49	38
Ohio	19	-	-	-	10	60	128	-	128	-	159	113	-	1	-
Ind.	2	-	27	-	11	57	34	-	40	-	35	201	-	-	1
Ill.	16	1	699	-	4	326	74	28	2,328	-	36	74	-	38	20
Mich.	20	16	75	-	-	60	68	8	338	-	35	47	-	8	16
Wis.	4	-	278	-	3	59	11	-	250	-	99	350	-	2	1
W.N. CENTRAL	30	1	323	-	17	12	101	13	149	5	1,410	230	-	14	19
Minn.	8	-	45	-	4	6	21	2	14	1	52	116	-	1	2
Iowa	1	-	133	-	1	-	11	5	50	-	19	31	-	1	1
Mo.	12	1	26	-	6	3	33	2	24	-	22	31	-	1	7
N. Dak.	-	-	25	-	1	2	1	-	3	-	5	10	-	1	2
S. Dak.	2	-	-	-	-	-	5	-	1	-	14	4	-	-	-
Nebr.	4	-	-	-	-	-	11	-	-	-	10	9	-	-	-
Kans.	3	-	94	-	5	1	19	4	57	4	1,288	29	-	10	7
S. ATLANTIC	119	13	748	-	56	332	398	11	235	4	744	512	-	9	52
Del.	1	-	1	-	-	-	4	-	1	-	227	2	-	-	2
Md.	14	-	26	-	9	115	46	1	25	1	164	292	-	-	6
D.C.	3	-	-	-	1	31	4	1	1	-	-	-	-	-	-
Va.	32	-	36	-	24	28	71	2	43	1	41	19	-	-	2
W. Va.	4	-	2	-	-	33	4	-	48	-	25	4	-	-	9
N.C.	6	-	3	-	1	9	63	5	27	2	76	33	-	-	1
S.C.	6	-	274	-	-	3	42	1	14	-	18	2	-	-	3
Ga.	13	-	79	-	14	8	58	-	28	-	132	92	-	-	-
Fla.	40	13	327	-	7	105	106	1	48	-	61	68	-	9	29
E.S. CENTRAL	21	-	63	-	9	7	114	61	125	-	47	64	-	4	3
Ky.	6	-	-	-	6	5	26	-	6	-	5	8	-	4	3
Tenn.	1	-	57	-	1	1	37	61	114	-	16	25	-	-	-
Ala.	10	-	1	-	1	-	37	-	4	-	25	24	-	-	-
Miss.	4	-	5	-	1	1	14	-	1	-	1	7	-	-	-
W.S. CENTRAL	100	-	680	-	38	436	203	6	265	12	250	523	1	71	40
Ark.	1	-	276	-	2	-	27	-	61	-	20	14	1	1	1
La.	18	-	4	-	-	42	26	-	3	-	15	17	-	-	-
Okla.	11	-	37	-	2	1	29	N	N	7	126	165	-	-	2
Tex.	70	-	363	-	34	393	121	6	201	5	89	327	-	70	37
MOUNTAIN	36	-	302	-	29	539	102	5	245	3	269	218	-	24	6
Mont.	-	-	-	-	8	137	10	-	5	1	20	10	-	2	-
Idaho	1	-	1	-	-	137	4	-	8	-	42	16	-	-	2
Wyo.	-	-	-	-	-	5	2	-	-	-	4	1	-	1	-
Colo.	12	-	2	-	8	13	18	1	16	-	66	86	-	1	-
N. Mex.	5	-	33	-	7	6	10	N	N	1	26	12	-	-	2
Ariz.	12	-	252	-	6	241	22	4	193	-	65	40	-	2	1
Utah	3	-	12	-	-	-	10	-	15	1	42	53	-	15	-
Nev.	3	-	2	-	-	-	26	-	8	-	4	-	-	3	1
PACIFIC	443	-	576	-	64	424	451	8	345	6	469	436	10	257	199
Wash.	29	-	139	-	28	142	62	1	18	2	149	80	-	17	14
Oreg.	18	-	7	-	4	5	33	N	N	-	12	49	-	4	2
Calif.	395	-	403	-	30	253	330	7	298	3	291	260	10	230	134
Alaska	-	-	-	-	-	-	14	-	6	1	4	30	-	-	1
Hawaii	1	-	27	-	2	24	13	-	23	-	16	17	-	6	48
Guam	1	-	4	-	1	11	1	-	4	-	-	-	-	4	3
P.R.	4	-	36	-	-	67	3	-	33	-	19	13	-	62	27
V.I.	-	-	-	-	-	10	-	1	17	-	-	-	-	-	-
Pac. Trust Terr.	-	-	-	-	-	-	1	-	11	-	-	-	-	2	-
Amer. Samoa	-	-	2	-	-	-	-	-	5	-	-	-	-	1	-

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

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

TABLE III. (Cont'd.) Cases of specified notifiable diseases, United States, weeks ending November 22, 1986 and November 23, 1985 (47th Week)

Reporting Area	Syphilis (Civilian) (Primary & Secondary)		Toxic-shock Syndrome	Tuberculosis		Tula-remia	Typhoid Fever	Typhus Fever (Tick-borne) (RMSF)	Rabies, Animal
	Cum 1986	Cum 1985	1986	Cum 1986	Cum 1985	Cum 1986	Cum 1986	Cum 1986	Cum 1986
UNITED STATES	24,407	24,354	5	19,844	19,285	150	284	730	4,911
NEW ENGLAND	451	540	-	622	661	1	16	13	8
Maine	19	14	-	34	44	-	-	-	-
N H	10	38	-	23	21	-	-	2	1
Vt	9	7	-	16	8	-	-	-	2
Mass	240	267	-	346	390	1	13	4	-
R I	19	17	-	42	50	-	-	3	3
Conn	154	197	-	161	148	-	3	4	2
MID ATLANTIC	3,412	3,284	-	3,920	3,471	1	23	35	622
Upstate N Y	166	242	-	566	600	-	4	19	80
N Y City	1,924	2,004	-	2,050	1,694	-	10	5	-
N J	604	623	-	661	479	1	8	2	17
Pa	718	415	-	643	698	-	1	9	525
E N CENTRAL	787	907	1	2,358	2,352	1	23	48	133
Ohio	112	135	-	414	409	-	9	42	16
Ind	103	74	1	255	302	-	2	-	17
Ill	370	414	-	1,026	1,018	-	3	2	39
Mich	162	224	-	560	488	1	6	4	24
Wis	40	60	-	103	135	-	3	-	37
W N CENTRAL	196	213	-	581	538	41	9	47	764
Minn	31	42	-	136	113	-	2	1	120
Iowa	8	18	-	46	53	1	-	1	176
Mo	102	116	-	285	258	30	6	24	67
N Dak	5	2	-	10	10	-	-	1	145
S Dak	9	6	-	28	28	3	-	6	170
Nebr	11	7	-	14	16	1	-	5	32
Kans	30	22	-	62	60	6	1	9	54
S ATLANTIC	7,365	7,024	-	3,983	3,970	12	45	330	1,247
Del	52	36	-	40	42	-	1	1	1
Md	406	439	-	289	359	2	15	29	551
D C	270	302	-	147	140	1	4	-	31
Va	315	281	-	334	402	3	10	51	184
W Va	20	25	-	115	99	-	3	10	52
N C	470	623	-	596	528	3	4	128	10
S C	626	720	-	506	480	-	-	70	64
Ga	1,362	1,259	-	659	660	3	-	39	191
Fla	3,844	3,339	-	1,297	1,260	-	8	2	163
E S CENTRAL	1,604	1,868	-	1,752	1,668	13	4	109	324
Ky	64	63	-	404	405	5	-	22	99
Tenn	575	592	-	506	494	6	1	44	109
Ala	479	611	-	550	492	1	1	25	113
Miss	486	602	-	292	277	1	2	18	3
W S CENTRAL	4,781	5,643	2	2,521	2,457	67	29	137	674
Ark	243	303	-	340	292	49	-	16	153
La	829	986	-	393	352	1	1	1	22
Okla	135	175	2	234	232	12	2	103	57
Tex	3,574	4,179	-	1,554	1,581	5	26	17	442
MOUNTAIN	541	691	1	483	512	11	16	10	624
Mont	7	6	-	31	46	1	1	4	200
Idaho	14	7	-	23	25	-	-	2	9
Wyo	4	12	-	-	5	1	-	1	265
Colo	126	194	-	47	77	3	1	3	29
N Mex	62	120	-	87	82	1	1	-	6
Ariz	219	290	-	229	227	-	9	-	97
Utah	18	8	1	31	17	4	3	-	7
Nev	91	54	-	35	33	1	1	-	11
PACIFIC	5,270	4,184	1	3,624	3,656	3	119	1	515
Wash	152	99	1	198	202	1	3	-	5
Oreg	107	99	-	113	122	-	-	-	1
Calif	4,967	3,917	-	3,104	3,070	1	110	1	501
Alaska	10	4	-	46	89	1	1	-	8
Hawaii	34	65	-	163	173	-	5	-	-
Guam	1	2	-	34	38	-	1	-	-
P R	796	796	-	305	320	-	5	-	43
V I	1	3	-	1	1	-	-	-	-
Pac. Trust Terr.	246	128	-	80	75	-	49	-	-
Amer Samoa	-	-	-	5	-	-	-	-	-

U Unavailable

TABLE IV. Deaths in 121 U.S. cities,* week ending November 22, 1986 (47th Week)

Reporting Area	All Causes, By Age (Years)						P&I** Total
	All Ages	≥65	45-64	25-44	1-24	<1	
NEW ENGLAND	710	487	143	51	14	15	52
Boston, Mass.	186	119	36	25	4	2	19
Bridgeport, Conn.	56	42	7	4	2	1	3
Cambridge, Mass.	17	13	3	1	-	-	3
Fall River, Mass.	26	21	5	-	-	-	2
Hartford, Conn.	67	41	17	4	3	2	1
Lowell, Mass.	17	12	3	2	-	-	1
Lynn, Mass.	26	19	6	1	-	-	3
New Bedford, Mass.	40	30	9	-	1	-	2
New Haven, Conn.	51	28	16	4	2	1	1
Providence, R.I.	73	55	12	2	-	4	6
Somerville, Mass.	7	5	1	1	-	-	1
Springfield, Mass.	48	33	10	3	-	2	2
Waterbury, Conn.	41	29	10	2	-	-	3
Worcester, Mass.	55	40	8	2	2	3	5
MID ATLANTIC	2,984	1,952	635	268	71	58	119
Albany, N.Y.	62	45	11	5	1	-	2
Allentown, Pa.	25	18	7	-	-	-	-
Buffalo, N.Y.	96	67	16	7	5	1	5
Camden, N.J.	52	31	14	7	-	-	2
Elizabeth, N.J.	15	6	8	1	-	-	1
Erie, Pa.†	52	40	8	2	2	-	4
Jersey City, N.J.	40	22	9	7	1	1	4
N.Y. City, N.Y.	1,703	1,095	359	174	43	32	50
Newark, N.J.	62	28	15	14	2	3	5
Paterson, N.J.	31	18	9	1	2	1	2
Philadelphia, Pa.	395	269	83	27	7	9	19
Pittsburgh, Pa.†	89	60	21	5	2	1	4
Reading, Pa.	29	21	7	1	-	-	1
Rochester, N.Y.	94	61	20	9	2	2	5
Schenectady, N.Y.	28	24	4	-	-	-	5
Scranton, Pa.†	26	19	7	-	-	-	1
Syracuse, N.Y.	97	66	23	1	2	5	5
Trenton, N.J.	40	23	9	4	1	3	1
Utica, N.Y.	23	19	1	2	1	-	2
Yonkers, N.Y.	25	20	4	1	-	-	1
E.N. CENTRAL	2,418	1,586	527	164	64	77	98
Akron, Ohio	68	47	19	1	-	1	-
Canton, Ohio	46	34	9	2	-	1	5
Chicago, Ill.§	564	362	125	45	10	22	16
Cincinnati, Ohio	157	107	33	8	6	3	10
Cleveland, Ohio	181	105	52	11	8	5	3
Columbus, Ohio	122	84	25	7	2	4	-
Dayton, Ohio	144	84	40	10	4	6	4
Detroit, Mich.	235	138	51	23	14	9	8
Evansville, Ind.	43	30	11	2	-	-	1
Fort Wayne, Ind.	69	54	8	4	1	2	4
Gary, Ind.	14	11	1	2	-	-	-
Grand Rapids, Mich.	71	52	10	6	2	1	4
Indianapolis, Ind.	186	117	43	16	5	5	3
Madison, Wis.	42	26	8	4	4	-	6
Milwaukee, Wis.	162	107	38	9	2	6	16
Peoria, Ill.	52	45	5	-	1	1	3
Rockford, Ill.	46	38	5	1	1	1	5
South Bend, Ind.	47	32	9	4	-	2	1
Toledo, Ohio	110	69	25	6	4	6	7
Youngstown, Ohio	59	44	10	3	-	2	2
W.N. CENTRAL	807	560	152	47	18	30	52
Des Moines, Iowa	58	43	9	2	1	3	2
Duluth, Minn.	33	21	6	3	2	1	-
Kansas City, Kans.	55	38	11	3	3	-	-
Kansas City, Mo.	110	86	20	3	1	-	9
Lincoln, Nebr.	43	28	11	3	1	-	2
Minneapolis, Minn.	111	70	26	8	2	5	6
Omaha, Nebr.	108	69	20	9	2	8	5
St. Louis, Mo.	158	112	30	7	3	6	17
St. Paul, Minn.	63	43	12	4	1	3	2
Wichita, Kans.	68	50	7	5	2	4	9

Reporting Area	All Causes, By Age (Years)						P&I** Total
	All Ages	≥65	45-64	25-44	1-24	<1	
S. ATLANTIC	1,028	647	221	91	36	32	46
Atlanta, Ga.	171	114	29	18	7	3	4
Baltimore, Md.	157	95	36	15	6	5	3
Charlotte, N.C.	72	43	22	5	1	1	2
Jacksonville, Fla.	120	62	38	10	6	4	7
Miami, Fla.	70	43	11	10	4	2	2
Norfolk, Va.	72	38	20	8	3	3	6
Richmond, Va.	77	47	18	5	2	5	7
Savannah, Ga.	52	29	14	5	1	3	4
St. Petersburg, Fla.	94	80	8	3	2	1	4
Tampa, Fla.	70	49	10	4	3	3	7
Washington, D.C.	48	28	10	7	1	2	-
Wilmington, Del.	25	19	5	1	-	-	-
E.S. CENTRAL	728	443	179	50	32	24	42
Birmingham, Ala.	101	56	26	9	2	8	4
Chattanooga, Tenn.	52	33	15	1	2	1	2
Knoxville, Tenn.	83	49	18	9	6	1	8
Louisville, Ky.	116	65	36	9	4	2	5
Memphis, Tenn.	145	87	37	8	6	7	17
Mobile, Ala.	70	45	16	6	3	-	-
Montgomery, Ala.	57	36	14	2	3	2	4
Nashville, Tenn.	104	72	17	6	6	3	2
W.S. CENTRAL	1,464	869	324	138	71	62	62
Austin, Tex.	65	43	12	4	3	3	5
Baton Rouge, La.	61	39	15	4	2	1	4
Corpus Christi, Tex.	50	30	14	4	1	1	1
Dallas, Tex.	192	103	41	21	11	16	8
El Paso, Tex.	71	39	16	9	4	3	5
Fort Worth, Tex.	104	65	24	6	7	2	4
Houston, Tex.	288	149	76	34	11	18	6
Little Rock, Ark.	72	44	15	8	4	1	6
New Orleans, La.	152	97	28	19	7	1	1
San Antonio, Tex.	171	101	38	14	12	6	13
Shreveport, La.	108	68	21	9	7	3	4
Tulsa, Okla.	130	91	24	6	2	7	5
MOUNTAIN	661	417	137	49	32	26	29
Albuquerque, N.Mex.	75	51	14	4	5	1	4
Colo. Springs, Colo.	27	14	8	2	3	-	2
Denver, Colo.	133	78	25	15	9	6	4
Las Vegas, Nev.	86	49	24	7	4	2	1
Ogden, Utah	22	14	6	1	-	1	1
Phoenix, Ariz.	156	99	31	11	8	7	7
Pueblo, Colo.	19	17	2	-	-	-	3
Salt Lake City, Utah	52	30	12	4	1	5	-
Tucson, Ariz.	91	65	15	5	2	4	7
PACIFIC	1,941	1,313	359	175	50	40	118
Berkeley, Calif.	23	17	3	2	-	1	2
Fresno, Calif.	106	82	15	4	-	5	21
Glendale, Calif.	18	16	-	1	1	-	1
Honolulu, Hawaii	65	37	16	6	2	4	9
Long Beach, Calif.	71	53	14	1	1	2	8
Los Angeles, Calif.	517	315	107	69	21	3	19
Oakland, Calif.	44	27	11	1	2	3	-
Pasadena, Calif.	33	26	3	4	-	-	2
Portland, Oreg.	150	108	30	6	4	-	7
Sacramento, Calif.	150	105	26	13	2	4	10
San Diego, Calif.	137	88	23	18	3	5	12
San Francisco, Calif.	160	110	30	16	2	2	4
San Jose, Calif.	183	126	35	13	5	4	9
Seattle, Wash.	179	124	29	18	4	4	3
Spokane, Wash.	70	52	12	2	3	1	10
Tacoma, Wash.	35	27	5	1	-	2	1
TOTAL	12,741††	8,274	2,677	1,033	388	364	618

* 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.

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

Salmonellosis – Continued

Editorial Note: Pet turtles are estimated to have caused 14% of reported cases of salmonellosis in humans in the early 1970s (*2*). Consequently, the interstate and intrastate commercial distribution of turtles <4 inches in carapace diameter was banned in 1975, except for bonafide scientific, educational, or exhibitional purposes (*3*). After this ban went into effect, turtle-associated salmonellosis in the United States became rare (*4*). However, pet turtles exported from the United States have been associated with human salmonellosis in the United Kingdom (*5*), Japan (*6*), and Yugoslavia (*7*). Recently, in Israel, aquarium cultures of pet turtles imported from the United States yielded *Salmonella*, and that country has temporarily banned the importation of these turtles (*8*). Diversion of these turtles into U.S. markets has been associated with human illness in Puerto Rico and, sporadically, in the continental United States (*7*). Since the importation of small turtles into the United States has long been restricted, turtles for sale in pet stores in the United States are likely to be of U.S. origin (*9*).

Turtles are easily infected with *Salmonella* from the environment and can acquire the organism in ovo or after hatching (*10*). Treating turtle eggs with gentamicin has been proposed as a means of producing *Salmonella*-free turtles (*11*). However, only one evaluation of this technique has been published, and the efficacy of the technique in practice has not been established. The technique may promote gentamicin resistance in *Salmonella*, as a similar technique has when used in treating turkey eggs (*12*). Furthermore, uninfected baby turtles can easily acquire *Salmonella* from other turtles or from the environment after hatching. Turtles also harbor *Campylobacter*, *Aeromonas*, and other potential pathogens (*13,14*). They are not appropriate pets for small children.

Prompt investigation of turtle-associated salmonellosis can prevent further illness. It is particularly important to determine the origin and distribution of the turtles, whether they were hatched from gentamicin-treated eggs, and whether they carry *Salmonella*. Clinicians who encounter cases of turtle-associated salmonellosis are encouraged to report them to local and state public health officials, who, along with Food and Drug Administration officials, can investigate the cases and enforce the law.

References

1. Seidel ME, Smith HM. *Chrysemys, Pseudemys, Trachemys* (Testudines: Emydidae): did Agassiz have it right? Herpetologica 1986;42:242-8.
2. Lamm SH, Taylor A Jr, Gangarosa EJ, et al. Turtle-associated salmonellosis: I. an estimation of the magnitude of the problem in the United States, 1970-1971. Am J Epidemiol 1972;95:511-7.
3. 21 Code of Federal Regulations §1240.62 (1986).
4. Cohen ML, Potter M, Pollard R, Feldman RA. Turtle-associated salmonellosis in the United States: effect of Public Health Action. JAMA 1980;243:1247-9.
5. Anonymous. Reptilian salmonellosis [Editorial]. Lancet 1981;2:120-31.
6. Fujita K, Murono K, Yoshioka H. Pet-linked salmonellosis [Letter]. Lancet 1981;2:525.
7. Tauxe RV, Rigau-Perez JG, Wells JG, Blake PA. Turtle-associated salmonellosis in Puerto Rico: hazards of the global turtle trade. JAMA 1985;254:237-9.
8. Chassis G, Gross EM, Greenberg Z, et al. *Salmonella* in turtles imported to Israel from Louisiana [Letter]. JAMA 1986;256:1003.
9. 42 Code of Federal Regulations §71.52 (1985).
10. Kaufmann AF, Fox MD, Morris GK, et al. Turtle-associated salmonellosis: 3. the effects of environmental *Salmonellae* in commercial turtle breeding ponds. Am J Epidemiol 1972;95:521-8.
11. Michael-Marler S, Brown ML, Siebeling RJ. Eradication of *Arizona hinshawii* from artificially infected turtle eggs. Appl Environ Microbiol 1983;45:748-54.
12. Hirsh DC, Ikeda JS, Martin LD, Kelly BJ, Ghazikhanian GY. R Plasmid-mediated gentamicin resistance in *Salmonellae* isolated from turkeys and their environment. Avian Dis 1983;27:766-72.
13. McCoy RH, Siedler RJ. Potential pathogens in the environment: isolation, enumeration, and identification of seven genera of intestinal bacteria associated with small green pet turtles. Appl Microbiol 1973;25:534-8.
14. Harvey S, Greenwood JR. Isolation of *Campylobacter fetus* from a pet turtle. J Clin Microbiol 1985;21:260-1.

Current Trends

Smoking Prevalence and Cessation in Selected States, 1981-1983 and 1985 — The Behavioral Risk Factor Surveys

From 1981-1983, 28 states and the District of Columbia participated in Behavioral Risk Factor Surveys (BRFS) conducted by the Center for Health Promotion and Education of the Centers for Disease Control. The surveys were designed to study risk factors for the 10 leading causes of premature death in this country (*1*). They included questions on smoking behavior. The Behavioral Risk Factor Surveillance System (BRFSS) began in 1984 as a followup to the BRFS. The purpose of this system is to monitor changes in risk factors by state, over time. The BRFSS operated for the second year in 1985 and included 21 states and the District of Columbia. Thirteen states participated in both the 1981-1983 BRFS and the 1985 BRFSS. Analyses of data from participating states have permitted documentation of changes in smoking behavior between these two time periods.

In both the 1981-1983 BRFS and the 1985 BRFSS, data were collected by telephone from persons ≥18 years of age who were selected using random digit dialing techniques (*1,2*). In these surveys, an "ever smoker" was defined as a respondent who reported smoking ≥100 cigarettes in his or her lifetime. A "current smoker" was defined as a respondent who had smoked ≥100 cigarettes and who was still smoking. A "former smoker" was defined as a respondent who was not currently smoking, but who reported having smoked ≥100 cigarettes during his or her lifetime. The "quit ratio" was defined as the ratio of "former smokers" to "ever smokers". In the 1985 survey, an "attempter" was defined as a current smoker who had quit smoking for ≥1 week in the past year. Tables 2 and 3 show the quit ratios and the prevalences of current smokers for both the 1981-1983 BRFS and the 1985 BRFSS. They also show the prevalences of attempters in the states participating in the 1985 BRFSS.

In 1985, women in five states (Connecticut, Florida, Montana, Rhode Island, and Wisconsin) reported current smoking at a rate equal to or greater than the rate reported by men. In all but one state, the percentage of current smokers among men decreased between the period 1981-1983 and 1985. However, these decreases were statistically significant in only three states: Kentucky, North Carolina, and Tennessee. The prevalence of smoking among women declined between the period 1981-1983 and 1985 in nine of the 13 states, but none of these changes in prevalence reached statistical significance. In 10 of the 13 states, the percentage decrease in current smoking among men between the period 1981-1983 and 1985 was greater than the percentage decrease among women.

In 1985, the male quit ratio in every state but two was higher than the female quit ratio. In 11 of the 13 states with data for both survey periods, the male quit ratio was greater in 1985 than for the period 1981-1983; in the remaining two states, the 1985 male quit ratio was less than or equal to the 1981-1983 ratio. In nine of the 13 states, women had a greater quit ratio in 1985 than for the period 1981-1983, and in the remaining four states their quit ratio was less in 1985.

While the quit ratio is a measure of cessation over an extended time period, attempts to quit, which were measured in 1985, indicate recent cessation efforts by current smokers. In 16 of 22 states, the percentage of male attempters was greater than the percentage of female attempters.

Reported by R Brooks, Office of Health Education, Arizona Dept of Health Svcs; F Capell, Health Education-Risk Reduction Program, California Dept of Health Svcs; S Benn, Chronic Disease Control Sec, Connecticut State Dept of Health Svcs; R Conn, EdD, Preventive Health Svcs Administration, District of Columbia Dept of Human Svcs; WW Mahoney, Health Promotion Program, Florida Dept of Health and Rehabilitative Svcs; JD Smith, Div of Public Health, Georgia Dept of Human Resources; JV Patterson,

Smoking — Continued

Health Education Sec, Bureau of Preventive Medicine, Idaho Dept of Health and Welfare; D Patterson, Div of Education and Information, Illinois Dept of Public Health; S Jain, Div of Health Education, Indiana State Board of Health; K Bramblett, Dept of Health Svcs, Kentucky Cabinet for Human Resources; N Salem, PhD, Minnesota Center for Health Statistics; R Moon, Health Education and Promotion Program, Montana Dept of Health and Environmental Sciences; T Gerber, Bur of Adult and Gerontological Health, New York State Dept of Health; R Staton, Health Promotion Br, Div of Health Svcs, North Carolina Dept of Human Resources; B Lee, Div of Research, Information and Support, North Dakota State Dept of Health; E Capwell, Ohio Dept of Health, Bur of Preventive Medicine; J Cataldo, Div of Health Promotion, Rhode Island Dept of Health; FC Wheeler, Div of Chronic Disease, South Carolina Dept of Health and Environmental Control; J Fortune, Div of Health Promotion, Tennessee Dept of Health and Environment; GV Lindsay, Bur of Health Promotion and Risk Reduction, Div of Community Health Svcs, Utah Dept of Health; R Anderson, Health Education Dept, West Virginia Dept of Health; DR Murray, Wisconsin Center for Health Statistics; Div of Nutrition, Behavioral Epidemiology and Evaluation Br, Div of Health Education, Center for Health Promotion and Education, CDC.

Editorial Note: Prevention and cessation of smoking will accomplish significant improvements in health status (*3,4*). While the favorable decreasing trend in smoking prevalence seen in 13 selected states does not necessarily reflect the degree of change in the entire country, it is consistent with the national trend observed since 1965 (*5,6*).

More men appear to be stopping smoking than women, even though the smoking hazards for both men and women have been widely publicized. The 1980 Surgeon General's report indicated that smoking cessation is more difficult for women than for men (*7*).

TABLE 2. Male smoking prevalence and cessation by state, 1981-1983 and 1985 behavioral risk factor surveys

State	1981-1983 % Current smokers	1985 % Current smokers	% Change	95% C.L.	1981-1983 Quit ratio	1985 Quit ratio	1985 % Attempters
Arizona	33.0	28.1	−4.9	(−12.5,+2.7)	43.5	49.2	44.4
California	30.9	26.3	−4.6	(−10.2,+1.0)	46.6	54.0	47.2
Connecticut	*	28.2			*	53.1	42.5
District of Columbia	34.9	29.0	−5.9	(−15.5,+3.7)	37.1	40.0	54.0
Florida	33.7	26.9	−6.8	(−15.5,+1.9)	45.9	55.6	41.2
Georgia	32.9	38.0	+5.0	(−3.7,+13.9)	40.9	37.5	46.3
Idaho	*	27.7			*	50.8	42.0
Illinois	*	26.2			*	55.0	33.1
Indiana	38.6	36.8	−1.7	(−10.6,+7.2)	38.6	44.7	39.9
Kentucky	48.0	33.1	−14.9†	(−24.3,−5.5)	27.9	45.5	42.6
Minnesota	*	31.1			*	47.4	43.6
Montana	29.9	24.3	−5.6	(−13.6,+2.4)	50.4	57.1	32.3
North Carolina	47.8	31.4	−16.4†	(−25.4,−7.6)	31.7	43.3	36.4
North Dakota	*	25.9			*	57.9	40.1
New York	34.3	32.7	−1.6	(−8.7,+5.5)	44.9	44.8	43.9
Ohio	35.8	31.9	−4.0	(−12.1,+4.1)	40.3	44.4	43.4
Rhode Island	*	27.5			*	52.6	39.3
South Carolina	*	34.9			*	39.6	44.3
Tennessee	39.5	30.8	−8.6†	(−16.3,−0.9)	33.3	45.4	37.1
Utah	*	17.9			*	54.7	38.2
West Virginia	36.9	28.7	−8.2	(−15.9,+0.5)	42.2	52.8	46.4
Wisconisn	*	24.6			*	59.7	41.6
Median	34.9	28.5	−5.6		40.9	50.0	42.3

*Not collected in 1981-1983 BRFS.

†$p = < 0.05$, z test.

Smoking – Continued

Approximately two-fifths of both men and women smokers reported stopping smoking for ≥1 week in the past 12 months. This is over twice the rate (15%) of yearly attempts to quit smoking reported elsewhere (*8*). Increased cessation efforts may be due to policies against smoking in public places and worksites, growing societal pressure against smoking, increased tobacco costs, increased awareness of health consequences, and greater availability of formal smoking cessation programs (*8*).

The information reported here shows important, consistent changes in smoking behavior that will provide substantial health benefits to the nation. Four states (Idaho, Montana, Utah, and Wisconsin) have reached the 25% smoking prevalence stated as a goal in the 1990 Objectives for the Nation (*2,9*). However, even this prevalence will translate into substantial disease risk. The growing emergence of women as the group showing the slowest decline in smoking is disturbing and indicates a need for additional efforts in cessation and prevention of smoking among women. Further analyses of BRFSS data from participating states may identify other groups that need to be targeted by prevention and cessation strategies.

References

1. Marks JS, Hogelin GC, Gentry EM, et al. The behavioral risk factor surveys: I. state-specific prevalence estimates of behavioral risk factors. Am J Prev Med 1985;1:1-8.
2. CDC. Behavioral risk-factor surveillance in selected states—1985. MMWR 1986;35:441-4.
3. Office on Smoking and Health. The health consequences of smoking—cancer: a report of the Surgeon General. Rockville, Maryland: Public Health Service, 1982; DHHS publication no. (PHS) 82-50179.

TABLE 3. Female smoking prevalence and cessation by state, 1981-1983 and 1985 behavioral risk factor surveys

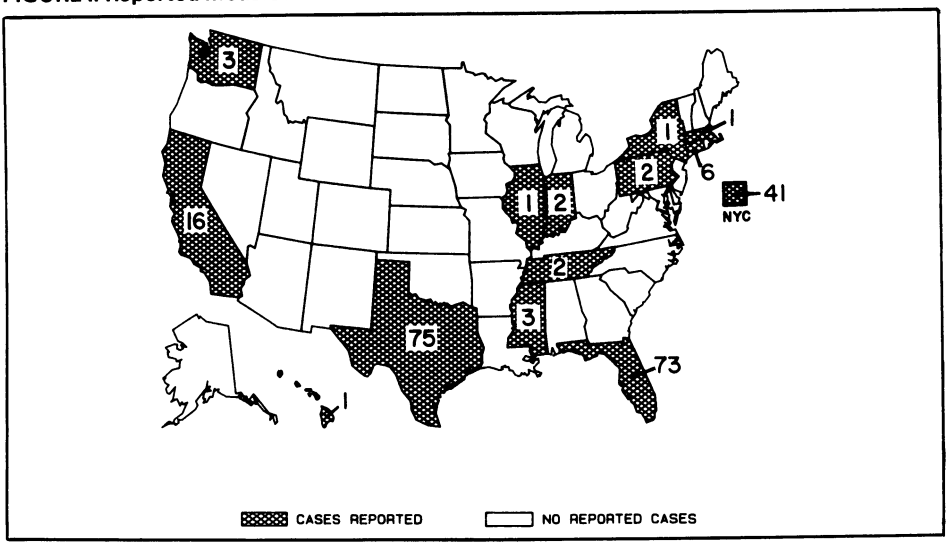
State	1981-1983 % Current smokers	1985 % Current smokers	% Change	95% C.L.	1981-1983 Quit ratio	1985 Quit ratio	1985 % Attempters
Arizona	29.7	24.8	−4.9	(−10.8,+1.0)	33.8	39.7	41.6
California	26.1	24.9	−1.1	(−5.8,+3.6)	42.5	36.9	42.3
Connecticut	*	28.2			*	49.7	42.0
District of Columbia	31.6	23.5	−8.1	(−15.9,+0.3)	28.2	44.6	51.1
Florida	31.2	27.4	−3.7	(−11.7, +4.3)	34.8	43.5	41.1
Georgia	24.8	20.5	−4.2	(−10.5,+2.1)	32.8	45.0	39.4
Idaho	*	19.9			*	47.9	35.8
Illinois	*	26.1			*	38.7	36.2
Indiana	27.6	27.9	+0.3	(−6.8,+7.4)	29.8	35.1	35.5
Kentucky	26.1	25.7	−0.4	(−7.5,+6.7)	31.4	34.0	36.1
Minnesota	*	24.8			*	40.4	37.8
Montana	21.5	24.8	+3.2	(−2.8,+9.2)	47.8	41.6	44.0
North Carolina	28.5	23.8	−4.7	(−11.1,+1.7)	27.4	37.6	37.4
North Dakota	*	25.2			*	34.2	52.1
New York	28.2	30.2	+2.0	(−3.5,+7.5)	41.4	35.5	39.6
Ohio	25.1	25.8	+0.7	(−5.5,+6.9)	33.7	37.4	39.9
Rhode Island	*	31.0			*	37.7	44.1
South Carolina	*	24.0			*	34.4	46.6
Tennessee	26.2	24.6	−1.6	(−6.9,+3.7)	35.8	32.1	36.5
Utah	*	13.4			*	42.1	30.0
West Virginia	28.0	24.9	−3.2	(−10.7,+4.2)	25.3	38.7	34.7
Wisconsin	*	24.6			*	44.2	41.0
Median	27.6	24.9	−3.2		33.7	38.7	39.8

*Not collected in 1981-1983 BRFS.

Smoking — Continued

4. Rosenberg L, Kaufman DW, Helmrich SP, Shapiro S. The risk of myocardial infarction after quitting smoking in men under 55 years of age. N Engl J Med 1985;313:1511-4.
5. National Center for Health Statistics. Health—United States, 1985. Hyattsville, Maryland: Public Health Service, 1985; DHHS publication no. (PHS) 86-1232.
6. Remington PL, Forman MR, Gentry EM, Marks JS, Hogelin GC, Trowbridge FL. Current smoking trends in the United States: the 1981-83 behavioral risk factor surveys. JAMA 1985;253:2975-8.
7. Office on Smoking and Health. The health consequences of smoking for women: a report of the Surgeon General. Rockville, Maryland: Public Health Service, 1980.
8. Health and Public Policy Committee, American College of Physicians. Methods for stopping cigarette smoking. Ann Intern Med 1986;105:281-91.
9. Public Health Service. Promoting health—preventing disease: objectives for the nation. Washington, DC: Public Health Service, 1980.

FIGURE I. Reported measles cases — United States, weeks 43-46, 1986



The *Morbidity and Mortaility Weekly Report* is prepared by the Centers for Disease Control, Atlanta, Georgia, and available on a paid subscription basis from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402, (202) 783-3238.

The data in this report are provisional, based on weekly reports to CDC by state health departments. The reporting week concludes at close of business on Friday; compiled data on a national basis are officially released to the public on the succeeding Friday.

The editor welcomes accounts of interesting cases, outbreaks, environmental hazards, or other public health problems of current interest to health officials. Such reports and any other matters pertaining to editorial or other textual considerations should be addressed to: ATTN: Editor, *Morbidity and Mortality Weekly Report,* Centers for Disease Control, Atlanta, Georgia 30333.

☆U.S. Government Printing Office: 1987-730-145/40036 Region IV

HHS Publication No. (CDC) 87-8017