CENTERS FOR DISEASE CONTROL

April 17, 1981 / Vol. 30 / No. 14

MMWR

MORBIDITY AND MORTALITY WEEKLY REPORT

Current Trends

Compendium of Animal Rabies Vaccines, 1981

The purpose of these recommendations, prepared by the National Association of State Public Health Veterinarians, Inc. (NASPHV), is to provide information on rabies vaccines to practicing veterinarians, public health officials, and others concerned with rabies control. This document will serve as the basis for animal rabies vaccination programs throughout the United States. Its adoption by cooperating organizations will result in standardization of recommendations and requirements among jurisdictions, which is necessary for an effective national rabies-control program. These recommendations shall be reviewed and revised as necessary prior to the beginning of each calendar year. (All animal rabies vaccines licensed by the U.S. Department of Agriculture [USDA] and marketed in the United States are listed in the Compendium [Table 1].)*

RECOMMENDATIONS FOR IMMUNIZATION PROCEDURES

Vaccine Administration: It is recommended that all animal rabies vaccines be restricted to use by or under the supervision of a veterinarian.

Vaccine Selection: While recognizing the efficacy of vaccines with the shorter duration of immunity, the Committee recommends the use of vaccines with the 3-year duration of immunity since they offer the least expensive and most effective method of community rabies control.

Route of Inoculation: All rabies vaccines must be administered intramuscularly at 1 site in the thigh.

High-Risk Rabies Area: Revaccination schedules may be altered from stated recommendations in high-risk rabies areas herein defined, for the purpose of canine rabies vaccination, to mean any area (county, city, or town) wherein indigenous dog-to-dog rabies transmission is occurring, as identified by the state health department.

Wildlife Vaccination: No vaccine is licensed for use in animals other than those listed in Table 1. It is recommended that neither wild nor exotic animals be kept as household pets.

*P.O. Box 13528, Baltimore, Maryland 21203. The NASPHV Compendium Committee members for 1980 are: MK Abelseth, DVM, DVPH, PhD; KL Crawford, DVM, MPH, Chairman; JI Freeman, DVM, MPH; GB Miller, Jr., MD; JM Shuler, DVM, MPH; and RK Sikes, DVM, MPH. Endorsers are: U.S. Animal Health Association, Rabies Comm., American Veterinary Medical Association (AVMA) Council on Public Health and Regulatory Veterinary Medicine, and Conference of State and Territorial Epidemiologists. Consultants to the Committee are: LE Fredrickson, DVM, MPH, AVMA Council on Public Health and Regulatory Veterinary Medicine; RJ Price, DVM, Veterinary Biologic Staff, Animal and Plant Health Inspection Service, USDA; WG Winkler, DVM, MS, CDC; and R Zehr, Veterinary Biologics Section, Animal Health Institute.

Animal Rabies Vaccine – Continued

Accidental Human Exposure to Vaccine: Accidental inoculation may occur in individuals during administration of animal rabies vaccine. Such exposures to inactivated vaccines constitute no known rabies hazard. There have been no cases of rabies resulting from needle or other exposure to a licensed modified live virus vaccine in the United States.

TABLE 1. Compendium of Animal Rabies Vaccines*: vaccines marketed in the United States, 1981

Vaccine: generic name	Produced by	Marketed by (product name)	For use in	Dosage†	Age at primary vaccination‡	Booster recommended
A) MODIFIED LIVE VIRUS						
Canine Cell Line Origin	NORDEN	Norden			3 mos. &	
High Egg Passage, Flury Strain	License No. 189	(Endurall-R)	Dogs	1 ml	1 yr. later	Triennially
			Cats	1 ml	3 months	Annually
			Dogs	1 ml	3 mos. & 1 yr. later	Triennially
			Cattle	1 ml	4 months	Annually
Porcine Cell Line Origin	JENSEN-SALSBERY	Jensen-Salsbery (ERA Strain	Horses	1 ml	4 months	Annually
High Cell Passage, SAD Strain	License No. 107	Rabies Vaccine)	Sheep	1 ml	4 months	Annually
			Goats	1 ml	4 months	Annually
Canine Tissue Culture Origin	PHILIPS ROXANE	Bio-Ceutic (Neurogen-TC)	Dogs	1 ml	3 mos. & 1 yr. later	Triennially
High Cell Passage, SAD Strain	License No. 124					
Canine Tissue Culture Origin	PHILIPS ROXANE	Bio-Ceutic (Unirab)	Dogs	1 ml	3 months	Annually
High Cell Passage, SAD Strain	License No. 124					
Canine Tissue Culture Origin	PHILIPS ROXANE	Pitman-Moore (Rabvax)	Dogs	1 ml	3 mos. & 1 yr. later	Triennially
High Cell Passage, SAD Strain	License No. 124					
Bovine Kidney Tissue Culture Origin	PITMAN-MOORE	Pitman-Moore (Rabies Vaccine)	Dogs	1 ml	3 months	Annually
High Cell Passage, SAD Strain	License No. 264					
B) INACTIVATED VACCINES						
Murine Origin	ROLYNN	Ft. Dodge			3 mos. &	
	License No. 266	(Trimune)	Dogs	1 ml	1 yr. later	Triennially
			Cats	1 ml	3 months	Annually
Murine Origin	ROLYNN	Ft. Dodge	Dogs	1 ml	3 months	Annually
	License No. 266	(Annumune)	Cats	1 ml	3 months	Annually
Murine Origin	DOUGLAS	Douglas	Dogs	1 ml	3 months	Annually
	License No. 266	(SMBV)	Cats	1 ml	3 months	Annually
Murine Origin§	DOUGLAS License No. 266	Douglas (Pan-Rab)	Cats	1 ml	3 months	Annually
Hamster Cell Line Origin	BEECHAM	Beecham	Dogs	1 ml	3 months	Annually
High Cell Passage, Kissling Strain	License No. 225	(Rabcine)	Cats	1 ml	3 months	Annually
Hamster Cell Line Origin	BEECHAM	Beecham				
High Cell Passage, Kissling Strain	License No. 225	(Rabcine-Feline)	Cats	1 ml	3 months	Annually
Hamster Cell Line Origin	VACCINES, INC. License No. 227	Guardian (Rabies Vacc.)	Dogs	1 ml	3 months	Annually
Hamster Cell Line Origin	VACCINES, INC. License No. 227	Vaccines Specialties (Del-Rab-1)	Dogs	1 ml	3 months	Annually
Hamster Cell Line Origin	VACCINES, INC License No. 227	Ceva (CE-RAB)	Dogs	1 ml	3 months	Annually
Porcine Cell Line Origin	NORDEN License No. 189	Norden (Endurall-K)	Dogs	1 ml	3 months	Annually
			Cats	1 ml	3 months	Annually

*Prepared by the National Association of State Public Health Veterinarians, Inc., P.O. Box 13528, Baltimore, Maryland 21203.

†All vaccine must be administered intramuscularly at 1 site in the thigh.

‡Three months is the earliest age recommended. Dogs vaccinated between 3-12 months should be revaccinated 1 year later.

§Combination vaccine.

Animal Rabies Vaccine – Continued

Implementation of Compendium: In order to implement a more meaningful and manageable program of rabies vaccination for dogs and cats in the United States, the NASPHV recommends that all government agencies promptly adopt the following standard certificate and tag system. This will aid the administration of local, state, national, and international procedures. Veterinary practitioners and rabies-control authorities are encouraged to specify these standardized tags and certificates when rabies vaccine is ordered. Standardized tags can help a bite victim identify the vaccination status of an animal that cannot be apprehended. Dog license tags should not conflict in shape and color with rabies tags. The schedule for shapes and colors will be repeated, beginning in 1985. It is suggested that 2-hole attachments be provided in tags of .064-inch thickness or greater. Committee recommendations for tag colors and shapes by year are given in Table 2.

Four-inch by six-inch printer-ready proofs and samples of the rabies certificate are available from NASPHV and state public health veterinarians. It is recommended that (as of January 1, 1981) veterinarians and government agencies use the NASPHV form #50, Rabies Vaccination Certificate exclusively (Figure 1). Vaccine manufacturers are expected to supply this form exclusively along with shipments of rabies vaccine.

The exclusive use of this certificate will allow for implementation of effective nation-

TABLE 2. NASPHV-recommended rabies tag colors and shapes, by year

Calendar year	Color	Shape
1981	Blue	Rosette
1982	Orange	Fireplug
1983	Green	Bell
1984	Red	Heart

FIGURE 1. Rabies Vaccination Certificate

RABIES VACCINATION CERTIFICATE

NASPHV Form #50

Owner's Name & Address — **Print - use ball point pen or type**

Rabies Tag Number

PRINT - Last First M.I. Telephone

No. Street City State Zip

Species: Dog ☐ Cat ☐ | Sex: Male ☐ Female ☐ | Age: 3 mo to 12 mo ☐ 12 mo. or older ☐ | Size: Under 20 lbs. ☐ 20-50 lbs. ☐ Over 50 lbs. ☐ | Predominant Breed: | Colors:

Name

Producer: (First 3 letters) ☐ 1 yr. Lic./Vacc. ☐ 3 yr. Lic./Vacc. Other Vacc. Serial (lot) No.

For Licensing Agency Use
License No. Year
19__
19__
19__
Other
Change ☐ Add ☐
Control No.

DATE VACCINATED:
19__
Month Day

VACCINATION EXPIRES:
Month Day 19__

Veterinarian's: # License No.
Signature
Address

Animal Rabies Vaccine -- Continued

wide rabies-control procedures; eliminate the cost for government agencies which print, process, and distribute vaccination forms; and provide a form designed for use until 1986.

To facilitate international travel, forms printed in other than the English language must remain unchanged except for the translation. Biologic manufacturers may request printer-ready proofs of the form and may exhaust existing supplies of the NASPHV form #50 as reproduced in the 1980 Rabies Compendium.

Reported by NASPHV in the CDC Veterinary Public Health Notes, Jan 1981.

Survey of Viral Hepatitis Surveillance Activities in State and Local Health Departments

In June 1980, CDC's Consolidated Surveillance and Communications Activity (CSCA) conducted a sample survey of health jurisdictions (generally county health departments) to obtain descriptions of their hepatitis surveillance and control activities. A total of 89 health agencies were surveyed, including 80 local health departments (40 small, 40 large*) and 9 state health departments.

*Large jurisdictions contained 1 of the 2 largest cities in a state; small jurisdictions were randomly selected from all remaining ones.

(Continued on page 169)

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

[Cumulative totals include revised and delayed reports through previous weeks.]

DISEASE	14th WEEK ENDING		MEDIAN 1976-1980	CUMULATIVE, FIRST 14 WEEKS		
	April 11 1981	April 5 1980		April 11 1981	April 5 1980	MEDIAN 1976-1980
Aseptic meningitis	56	45	29	872	880	503
Brucellosis	4	2	1	25	44	44
Chickenpox	8,643	7,207	6,873	84,903	76,544	81,056
Diphtheria	-	-	3	3	1	23
Encephalitis: Primary (arthropod-borne & unspec.)	15	11	11	201	160	159
Post-infectious	3	4	4	22	43	43
Hepatitis, Viral: Type B	385	308	308	4,949	4,278	4,003
Type A	504	535	598	6,685	7,342	7,994
Type unspecified	230	266	191	3,009	2,943	2,489
Malaria	26	20	11	320	380	106
Measles (rubeola)	82	563	862	774	3,857	7,751
Meningococcal infections: Total	93	81	54	1,338	931	772
Civilian	93	81	54	1,335	922	764
Military	-	-	-	3	9	6
Mumps	83	266	504	1,488	3,922	5,977
Pertussis	29	12	18	277	274	294
Rubella (German measles)	74	128	446	754	1,324	3,881
Tetanus	-	-	1	12	11	10
Tuberculosis	538	484	556	6,749	6,582	7,121
Tularemia	3	-	1	25	23	23
Typhoid fever	17	1	5	132	77	94
Typhus fever, tick-borne (Rky. Mt. spotted)	4	1	2	18	11	14
Venereal diseases:						
Gonorrhea: Civilian	17,392	15,261	18,791	257,019	252,515	252,515
Military	712	513	513	7,621	7,323	7,323
Syphilis, primary & secondary: Civilian	606	427	423	8,040	7,027	6,601
Military	2	4	4	96	100	85
Rabies in animals	185	132	76	1,690	1,414	694

TABLE II. Notifiable diseases of low frequency, United States

	CUM. 1981		CUM. 1981
Anthrax	-	Poliomyelitis: Total	-
Botulism (Calif. 1)	14	Paralytic	-
Cholera	-	Psittacosis (Mass. 1)	19
Congenital rubella syndrome (Calif. 2)	4	Rabies in man	-
Leprosy (Minn. 1, Tex. 1, Calif. 3, Hawaii 3)	55	Trichinosis (N.H. 1, Conn. 1, N.J. 1, Va. 1)	60
Leptospirosis	13	Typhus fever, flea-borne (endemic, murine) (Tex. 1)	3
Plague	1		

All delayed reports and corrections will be included in the following week's cumulative totals.

TABLE III. Cases of specified notifiable diseases, United States, weeks ending April 11, 1981 and April 5, 1980 (14th week)

REPORTING AREA	ASEPTIC MENINGITIS	BRUCELLOSIS	CHICKEN-POX	DIPHTHERIA		ENCEPHALITIS			HEPATITIS (VIRAL), BY TYPE			MALARIA	
						Primary		Post-infectious	B	A	Unspecified		
	1981	1981	1981	1981	CUM. 1981	1981	1980	1981	1981	1981	1981	1981	CUM. 1981
UNITED STATES	56	4	8,643	-	3	15	11	3	385	504	230	26	320
NEW ENGLAND	-	-	742	-	-	-	-	-	10	7	8	-	19
Maine	-	-	171	-	-	-	-	-	-	-	1	-	1
N.H.	-	-	2	-	-	-	-	-	-	-	-	-	2
Vt.	-	-	51	-	-	-	-	-	1	-	-	-	1
Mass.	-	-	189	-	-	-	-	-	1	2	5	-	11
R.I.	-	-	81	-	-	-	-	-	-	2	-	-	1
Conn.	-	-	248	-	-	-	-	-	8	3	2	-	3
MID. ATLANTIC	5	-	506	-	-	1	4	-	59	40	15	4	27
Upstate N.Y.	1	-	225	-	-	1	2	-	22	21	5	1	8
N.Y. City	1	-	148	-	-	-	-	-	26	6	5	1	13
N.J.	2	-	NN	-	-	-	1	-	NA	NA	NA	-	3
Pa.	1	-	133	-	-	-	1	-	11	13	5	2	3
E.N. CENTRAL	5	-	4,050	-	-	2	1	-	50	61	28	1	7
Ohio	2	-	606	-	-	1	-	-	16	25	8	1	2
Ind.	-	-	428	-	-	-	-	-	4	6	9	-	1
Ill.	-	-	441	-	-	-	-	-	8	15	4	-	1
Mich.	3	-	1,904	-	-	1	1	-	19	14	6	-	3
Wis.	-	-	671	-	-	-	-	-	3	1	1	-	-
W.N. CENTRAL	6	-	921	-	-	-	-	1	14	15	8	-	10
Minn.	-	-	1	-	-	-	-	-	1	3	-	-	2
Iowa	-	-	430	-	-	-	-	-	1	5	2	-	2
Mo.	6	-	-	-	-	-	-	-	3	5	5	-	1
N. Dak.	-	-	33	-	-	-	-	-	-	-	-	-	1
S. Dak.	-	-	43	-	-	-	-	-	-	-	-	-	1
Nebr.	-	-	45	-	-	-	-	-	3	-	-	-	-
Kans.	-	-	369	-	-	-	-	1	6	2	1	-	3
S. ATLANTIC	11	-	1,290	-	1	3	-	1	79	52	21	5	36
Del.	-	-	10	-	-	-	-	-	-	1	2	-	-
Md.	-	-	72	-	-	-	-	-	9	-	4	-	6
D.C.	-	-	3	-	-	-	-	-	1	1	-	-	1
Va.	1	-	118	-	-	1	-	-	10	5	6	-	9
W. Va.	-	-	297	-	-	-	-	-	3	-	-	-	-
N.C.	-	-	NN	-	-	1	-	-	6	3	1	-	2
S.C.	-	-	13	-	-	-	-	-	8	2	1	-	-
Ga.	1	-	20	-	-	-	-	-	27	15	-	-	4
Fla.	9	-	757	-	1	1	-	1	15	25	7	5	14
E.S. CENTRAL	7	-	133	-	-	1	1	-	8	25	3	-	1
Ky.	2	-	55	-	-	-	-	-	2	6	2	-	-
Tenn.	2	-	NN	-	-	-	-	-	6	14	1	-	-
Ala.	2	-	74	-	-	1	1	-	-	1	-	-	-
Miss.	1	-	4	-	-	-	-	-	-	4	-	-	1
W.S. CENTRAL	8	1	569	-	-	3	-	-	40	83	62	3	24
Ark.	1	-	14	-	-	-	-	-	4	4	-	-	2
La.	3	-	NN	-	-	-	-	-	12	18	12	-	2
Okla.	1	-	-	-	-	1	-	-	2	6	8	-	2
Tex.	3	1	555	-	-	2	-	-	22	55	42	3	18
MOUNTAIN	2	-	94	-	1	2	1	-	19	28	21	-	6
Mont.	-	-	-	-	1	-	1	-	-	-	-	-	-
Idaho	-	-	-	-	-	-	-	-	2	2	-	-	-
Wyo.	-	-	-	-	-	-	-	-	-	-	1	-	-
Colo.	1	-	72	-	-	1	-	-	-	1	-	-	2
N. Mex.	-	-	-	-	-	-	-	-	2	6	1	-	-
Ariz.	1	-	NN	-	-	-	-	-	7	13	13	-	2
Utah	-	-	3	-	-	-	-	-	-	-	-	-	-
Nev.	-	-	19	-	-	1	-	-	8	6	6	-	2
PACIFIC	12	3	338	-	1	3	4	1	106	193	64	13	190
Wash.	4	-	262	-	-	-	2	-	4	20	3	1	12
Oreg.	-	-	3	-	-	-	1	1	6	10	2	1	6
Calif.	8	3	-	-	-	2	1	-	95	161	58	11	171
Alaska	-	-	20	-	1	-	-	-	-	1	-	-	-
Hawaii	-	-	53	-	-	1	-	-	1	1	1	-	1
Guam	NA	NA	NA	NA	-	NA	-	-	NA	NA	NA	NA	-
P.R.	-	-	47	-	-	-	-	-	2	9	1	-	3
V.I.	-	-	20	-	-	-	-	-	-	-	-	-	1
Pac. Trust Terr.	NA	NA	NA	NA	-	NA	-	-	NA	NA	NA	NA	-

NN: Not notifiable. NA: Not available.
All delayed reports and corrections will be included in the following week's cumulative totals.

TABLE III (Cont.'d). Cases of specified notifiable diseases, United States, weeks ending April 11, 1981 and April 5, 1980 (14th week)

REPORTING AREA	MEASLES (RUBEOLA)			MENINGOCOCCAL INFECTIONS TOTAL			MUMPS		PERTUSSIS	RUBELLA		TETANUS
	1981	CUM. 1981	CUM. 1980	1981	CUM. 1981	CUM. 1980	1981	CUM. 1981	1981	1981	CUM. 1981	CUM. 1981
UNITED STATES	82	774	3,857	93	1,338	931	83	1,488	29	74	754	12
NEW ENGLAND	-	26	318	5	86	53	8	72	1	8	73	-
Maine	-	2	4	-	12	2	1	15	-	-	31	-
N.H.	-	3	166	1	6	4	-	8	-	-	14	-
Vt.	-	1	132	2	4	6	-	2	-	-	-	-
Mass.	-	16	11	1	22	16	1	23	-	7	23	-
R.I.	-	-	2	-	7	5	1	10	1	-	-	-
Conn.	-	4	3	1	35	20	5	14	-	1	5	-
MID. ATLANTIC	36	265	922	19	160	149	7	180	4	14	106	1
Upstate N.Y.	9	159	242	9	56	54	3	34	1	4	36	-
N.Y. City	3	26	287	4	19	43	2	27	-	4	21	1
N.J.	2	19	171	2	43	31	2	54	1	4	34	-
Pa.	22	61	222	4	42	21	-	65	2	2	15	-
E.N. CENTRAL	-	44	519	6	150	111	29	430	2	6	154	1
Ohio	-	13	53	-	50	42	2	56	1	-	-	-
Ind.	-	3	30	1	19	16	7	60	-	1	51	-
Ill.	-	6	129	3	43	17	2	76	-	-	42	-
Mich.	-	22	123	2	34	28	11	178	1	4	22	1
Wis.	-	-	184	-	4	8	7	60	-	1	39	-
W.N. CENTRAL	-	4	483	3	53	40	5	123	-	2	35	2
Minn.	-	1	329	1	22	11	1	3	-	-	5	1
Iowa	-	1	1	1	12	5	3	31	-	-	-	-
Mo.	-	-	58	-	12	17	-	21	-	1	2	1
N. Dak.	-	-	-	-	1	1	-	-	-	-	-	-
S. Dak.	-	-	-	-	1	2	-	1	-	-	-	-
Nebr.	-	1	50	-	-	-	-	3	-	-	1	-
Kans.	-	1	45	1	5	4	1	64	-	1	27	-
S. ATLANTIC	13	208	837	24	352	233	8	205	2	7	78	1
Del.	-	-	1	-	4	2	-	3	-	-	-	-
Md.	-	1	21	3	17	23	3	39	-	-	-	-
D.C.	-	-	-	-	1	-	-	-	-	-	-	-
Va.	-	2	151	3	42	17	-	50	-	-	8	-
W. Va.	-	7	4	1	16	6	4	39	-	-	14	-
N.C.	-	-	36	6	53	43	-	4	1	1	4	-
S.C.	-	-	106	4	48	30	-	5	-	-	4	1
Ga.	1	75	344	4	58	52	-	18	1	1	19	-
Fla.	12	123	174	3	113	60	1	47	-	5	29	-
E.S. CENTRAL	-	-	102	15	108	88	1	46	4	-	16	1
Ky.	-	-	31	6	36	24	-	17	4	-	10	-
Tenn.	-	-	5	4	31	21	1	17	-	-	6	-
Ala.	-	-	15	5	31	26	-	11	-	-	-	1
Miss.	-	-	51	-	10	17	-	1	-	-	-	-
W.S. CENTRAL	15	72	309	6	234	96	8	88	2	4	51	2
Ark.	-	-	7	1	18	5	-	-	-	-	-	1
La.	-	-	7	-	49	31	-	3	1	-	6	-
Okla.	-	3	217	-	18	8	-	-	-	-	-	-
Tex.	15	69	78	5	149	52	8	85	1	4	45	1
MOUNTAIN	1	15	79	2	45	35	8	51	-	4	27	1
Mont.	-	-	1	-	2	1	-	3	-	-	1	-
Idaho	-	-	-	1	3	3	2	4	-	-	-	-
Wyo.	-	-	-	-	-	1	-	-	-	-	1	-
Colo.	-	3	3	1	20	9	3	24	-	-	16	-
N. Mex.	-	-	3	-	4	6	-	-	-	1	1	-
Ariz.	1	2	38	-	11	5	2	9	-	3	4	1
Utah	-	-	32	-	3	1	-	5	-	-	3	-
Nev.	-	10	2	-	2	9	1	6	-	-	1	-
PACIFIC	17	140	288	13	150	126	9	293	14	29	214	3
Wash.	-	1	107	2	32	17	2	87	6	-	43	-
Oreg.	-	-	-	2	15	27	2	37	-	11	15	-
Calif.	17	139	173	9	96	80	5	157	8	18	156	3
Alaska	-	-	5	-	3	2	-	3	-	-	-	-
Hawaii	-	-	3	-	4	-	-	9	-	-	-	-
Guam	NA	1	2	-	-	-	NA	1	NA	NA	-	-
P.R.	14	102	37	-	3	5	10	45	-	2	3	-
V.I.	1	3	4	-	-	1	1	2	-	-	-	-
Pac. Trust Terr.	NA	-	3	-	-	-	NA	1	NA	NA	1	-

NA: Not available.
All delayed reports and corrections will be included in the following week's cumulative totals.

TABLE III (Cont.'d). Cases of specified notifiable diseases, United States, weeks ending April 11, 1981 and April 5, 1980 (14th week)

REPORTING AREA	TUBERCULOSIS		TULAREMIA	TYPHOID FEVER		TYPHUS FEVER (Tick-borne) (RMSF)		VENEREAL DISEASES (Civilian)						RABIES (in Animals)
								GONORRHEA			SYPHILIS (Pri. & Sec.)			
	1981	CUM. 1981	CUM. 1981	1981	CUM. 1981	1981	CUM. 1981	1981	CUM. 1981	CUM. 1980	1981	CUM. 1981	CUM. 1980	CUM. 1981
UNITED STATES	538	6,749	25	17	132	4	18	17,392	257,019	252,515	606	8,040	7,027	1,690
NEW ENGLAND	12	182	–	–	7	–	–	387	6,382	6,591	13	186	150	7
Maine	–	18	–	–	–	–	–	31	322	409	–	1	1	6
N.H.	–	2	–	–	–	–	–	11	232	238	–	7	1	–
Vt.	–	7	–	–	–	–	–	4	104	183	4	10	1	–
Mass.	8	103	–	–	6	–	–	158	2,597	2,649	8	110	82	–
R.I.	2	11	–	–	–	–	–	26	310	390	–	13	9	–
Conn.	2	41	–	–	1	–	–	157	2,817	2,722	1	45	56	1
MID. ATLANTIC	102	1,160	3	1	25	–	3	2,342	30,232	27,048	89	1,229	968	2
Upstate N.Y.	37	197	3	–	4	–	1	422	4,826	4,736	–	99	78	1
N.Y. City	41	505	–	1	17	–	2	850	11,875	10,937	56	775	624	–
N.J.	1	185	–	–	2	–	–	607	6,333	4,484	14	143	126	–
Pa.	23	273	–	–	2	–	–	463	7,198	6,891	19	212	140	1
E.N. CENTRAL	72	880	1	2	7	–	1	2,245	38,927	40,870	5	456	690	217
Ohio	11	159	–	–	–	–	1	987	15,133	10,573	1	73	109	13
Ind.	–	35	–	–	–	–	–	272	3,363	4,029	3	35	66	9
Ill.	30	383	–	–	4	–	–	237	8,217	13,220	–	216	370	170
Mich.	24	256	1	2	2	–	–	502	8,671	8,893	–	103	115	–
Wis.	7	47	–	–	1	–	–	247	3,543	4,155	1	29	30	25
W.N. CENTRAL	16	222	3	–	2	–	1	835	12,299	11,009	8	138	79	685
Minn.	2	36	–	–	1	–	–	118	1,999	1,988	5	52	29	132
Iowa	3	33	–	–	–	–	–	151	1,286	1,209	–	8	6	239
Mo.	8	91	3	–	–	–	1	419	5,605	4,528	3	67	42	60
N. Dak.	–	8	–	–	–	–	–	15	165	149	–	1	–	103
S. Dak.	–	17	–	–	1	–	–	23	328	348	–	–	–	52
Nebr.	–	7	–	–	–	–	–	42	877	920	–	3	1	47
Kans.	3	30	–	–	–	–	–	67	2,039	1,867	–	7	1	52
S. ATLANTIC	139	1,538	5	6	20	–	4	4,437	64,645	61,812	186	2,143	1,717	96
Del.	1	20	1	–	–	–	–	62	962	862	2	5	5	–
Md.	15	152	–	1	6	–	–	415	6,840	6,414	14	169	131	1
D.C.	11	91	–	–	1	–	–	276	4,270	4,600	16	189	125	–
Va.	26	185	–	–	1	–	–	410	6,050	5,128	12	198	149	17
W. Va.	4	53	–	–	3	–	–	93	959	861	2	6	4	3
N.C.	27	290	1	–	1	–	4	543	10,286	9,567	19	172	129	–
S.C.	12	133	2	–	–	–	–	486	5,882	5,786	12	146	83	4
Ga.	11	227	1	–	–	–	–	772	12,835	11,106	40	548	499	49
Fla.	32	387	–	5	8	–	–	1,380	16,561	17,488	69	710	592	22
E.S. CENTRAL	24	576	2	–	4	–	3	1,164	21,230	19,966	43	558	563	130
Ky.	7	149	2	–	–	–	1	213	2,770	2,945	1	22	33	33
Tenn.	11	195	–	–	1	–	1	441	7,698	7,188	19	220	226	82
Ala.	3	167	–	–	2	–	–	253	6,912	5,557	11	154	113	15
Miss.	3	65	–	–	1	–	1	257	3,850	4,276	12	162	191	–
W.S. CENTRAL	52	616	4	2	12	3	5	2,178	35,576	32,880	161	1,933	1,349	343
Ark.	9	63	–	–	–	–	1	144	2,209	2,434	2	38	51	55
La.	4	121	2	–	–	–	–	393	5,651	5,486	34	412	310	12
Okla.	9	81	1	–	3	2	2	235	3,553	3,201	5	49	18	56
Tex.	30	351	1	2	9	1	2	1,406	24,163	21,759	120	1,434	970	220
MOUNTAIN	18	191	6	–	8	1	1	891	10,716	9,721	4	205	170	32
Mont.	1	18	1	–	4	–	–	25	379	369	–	4	–	30
Idaho	–	5	2	–	–	1	1	25	416	472	–	2	5	–
Wyo.	–	2	–	–	–	–	–	23	232	272	–	2	7	2
Colo.	–	11	2	–	2	–	–	199	2,736	2,482	4	69	46	–
N. Mex.	1	42	–	–	–	–	–	66	1,221	1,298	–	40	26	–
Ariz.	9	79	–	–	2	–	–	289	3,524	2,679	–	44	62	–
Utah	5	14	1	–	–	–	–	31	481	476	–	3	5	–
Nev.	2	20	–	–	–	–	–	233	1,727	1,673	–	41	19	–
PACIFIC	103	1,384	1	6	47	–	–	2,913	37,012	42,618	97	1,192	1,341	178
Wash.	6	106	–	2	2	–	–	269	3,282	3,483	–	23	78	–
Oreg.	5	49	–	–	2	–	–	153	2,766	3,080	1	28	33	1
Calif.	81	1,179	1	4	41	–	–	2,371	29,138	34,133	94	1,111	1,181	165
Alaska	–	15	–	–	–	–	–	76	1,023	1,001	–	4	1	12
Hawaii	11	35	–	–	2	–	–	44	803	921	2	26	48	–
Guam	NA	–	–	NA	–	NA	–	NA	14	29	NA	–	–	–
P.R.	16	20	–	–	3	–	–	58	909	710	18	201	156	20
V.I.	–	–	–	–	1	–	–	–	24	46	–	–	7	–
Pac. Trust Terr.	NA	17	–	NA	–	NA	–	NA	82	113	NA	–	–	–

NA: Not available.
All delayed reports and corrections will be included in the following week's cumulative totals.

TABLE IV. Deaths in 121 U.S. cities,* week ending April 11, 1981 (14th week)

REPORTING AREA	ALL CAUSES, BY AGE (YEARS)					P & I** TOTAL
	ALL AGES	≥65	45-64	25-44	<1	
NEW ENGLAND	621	420	151	24	11	40
Boston, Mass.	160	90	51	8	5	20
Bridgeport, Conn.	41	28	7	3	1	–
Cambridge, Mass.	20	12	7	1	–	2
Fall River, Mass.	34	24	7	2	–	–
Hartford, Conn.	67	47	14	2	3	2
Lowell, Mass.	27	20	6	1	–	2
Lynn, Mass.	17	12	5	–	–	–
New Bedford, Mass.	24	18	6	–	–	1
New Haven, Conn.	38	30	5	2	–	1
Providence, R.I.	45	31	12	1	1	2
Somerville, Mass.	8	7	–	1	–	–
Springfield, Mass.	48	32	12	1	1	3
Waterbury, Conn.	33	23	9	–	–	2
Worcester, Mass.	59	46	10	2	–	5
MID. ATLANTIC	2,421	1,591	544	154	69	92
Albany, N.Y.	61	45	12	3	1	1
Allentown, Pa.	32	25	5	2	–	1
Buffalo, N.Y.	84	49	24	5	3	–
Camden, N.J.	35	19	9	3	4	3
Elizabeth, N.J.	34	23	6	–	5	1
Erie, Pa.†	40	32	6	2	–	1
Jersey City, N.J.	31	24	5	–	1	1
Newark, N.J.	72	25	24	7	9	6
N.Y. City, N.Y.	1,339	897	289	87	32	46
Paterson, N.J.	36	17	8	8	1	2
Philadelphia, Pa.†	207	131	56	9	7	11
Pittsburgh, Pa.†	55	36	15	3	–	1
Reading, Pa.	37	27	6	3	1	4
Rochester, N.Y.	118	77	30	6	–	3
Schenectady, N.Y.	29	21	7	–	–	1
Scranton, Pa.†	28	24	3	1	–	3
Syracuse, N.Y.	92	58	20	9	4	2
Trenton, N.J.	42	22	12	4	1	1
Utica, N.Y.	22	17	4	1	–	3
Yonkers, N.Y.	27	22	3	1	–	1
E.N. CENTRAL	2,236	1,339	602	131	91	80
Akron, Ohio	63	35	19	4	4	1
Canton, Ohio	46	29	14	–	–	6
Chicago, Ill.	514	278	148	45	26	11
Cincinnati, Ohio	142	92	35	8	3	14
Cleveland, Ohio	138	87	36	6	7	2
Columbus, Ohio	133	79	39	7	6	2
Dayton, Ohio	96	51	34	4	1	1
Detroit, Mich.	282	161	83	19	14	8
Evansville, Ind.	46	31	11	2	1	3
Fort Wayne, Ind.	57	42	11	1	2	4
Gary, Ind.	22	11	6	2	2	1
Grand Rapids, Mich.	53	36	12	4	1	2
Indianapolis, Ind.	158	85	46	8	7	3
Madison, Wis.	40	27	5	3	3	5
Milwaukee, Wis.	119	77	33	3	4	6
Peoria, Ill.	36	18	8	2	2	4
Rockford, Ill.	39	25	8	3	3	–
South Bend, Ind.	27	21	4	1	–	2
Toledo, Ohio	148	97	38	6	4	4
Youngstown, Ohio	77	57	12	3	1	1
W.N. CENTRAL	663	438	142	40	26	26
Des Moines, Iowa	52	39	8	3	–	–
Duluth, Minn.	18	10	5	3	–	1
Kansas City, Kans.	42	28	9	4	1	4
Kansas City, Mo.	30	21	5	1	2	1
Lincoln, Nebr.	31	23	8	–	–	2
Minneapolis, Minn.	78	47	17	6	4	2
Omaha, Nebr.	105	65	27	4	7	2
St. Louis, Mo.	173	103	44	10	10	8
St. Paul, Minn.	70	51	10	7	1	2
Wichita, Kans.	64	51	9	2	1	4

REPORTING AREA	ALL CAUSES, BY AGE (YEARS)					P & I** TOTAL
	ALL AGES	≥65	45-64	25-44	<1	
S. ATLANTIC	1,128	709	253	74	44	65
Atlanta, Ga.	161	94	38	18	5	4
Baltimore, Md.	94	63	25	2	1	2
Charlotte, N.C.	74	44	21	2	6	6
Jacksonville, Fla.	91	55	24	6	3	1
Miami, Fla.	114	63	28	11	3	5
Norfolk, Va.	60	34	19	2	3	4
Richmond, Va.	88	52	21	8	–	9
Savannah, Ga.	57	28	15	7	4	7
St. Petersburg, Fla.	100	88	8	1	–	12
Tampa, Fla.	70	48	13	2	5	6
Washington, D.C.	180	112	33	14	13	5
Wilmington, Del.	39	28	8	1	1	4
E.S. CENTRAL	776	463	207	54	30	37
Birmingham, Ala.	138	75	47	8	6	1
Chattanooga, Tenn.	56	32	15	8	–	4
Knoxville, Tenn.	59	38	12	4	3	1
Louisville, Ky.	130	75	41	6	7	12
Memphis, Tenn.	184	115	41	11	8	7
Mobile, Ala.	49	24	12	7	2	–
Montgomery, Ala.	39	28	7	2	–	6
Nashville, Tenn.	121	76	32	8	4	6
W.S. CENTRAL	1,119	661	266	89	46	35
Austin, Tex.	56	39	10	3	2	1
Baton Rouge, La.	46	26	14	2	2	1
Corpus Christi, Tex.	45	24	8	3	6	–
Dallas, Tex.	199	116	49	17	8	1
El Paso, Tex.	61	35	8	6	5	3
Fort Worth, Tex.	88	50	22	11	2	8
Houston, Tex.	176	87	56	19	5	4
Little Rock, Ark.	64	42	15	1	1	6
New Orleans, La.	111	70	24	7	9	1
San Antonio, Tex.	139	89	30	8	3	2
Shreveport, La.	41	22	9	6	1	4
Tulsa, Okla.	93	61	21	6	2	4
MOUNTAIN	610	373	136	49	9	24
Albuquerque, N. Mex.	71	25	15	7	1	3
Colo. Springs, Colo.	27	18	5	3	1	1
Denver, Colo.	128	83	25	14	1	6
Las Vegas, Nev.	78	44	21	6	3	3
Ogden, Utah	31	22	7	1	–	2
Phoenix, Ariz.	139	90	35	8	1	2
Pueblo, Colo.	22	14	3	3	–	–
Salt Lake City, Utah	39	24	6	4	2	–
Tucson, Ariz.	75	53	19	3	–	7
PACIFIC	1,737	1,125	374	116	63	84
Berkeley, Calif.	18	9	7	1	–	1
Fresno, Calif.	82	50	19	6	5	14
Glendale, Calif.	23	19	2	1	–	–
Honolulu, Hawaii	46	24	16	3	3	2
Long Beach, Calif.	82	47	23	3	4	2
Los Angeles, Calif.	534	340	118	44	15	24
Oakland, Calif.	53	32	11	7	3	1
Pasadena, Calif.	26	19	3	2	–	3
Portland, Oreg.	132	90	22	7	9	1
Sacramento, Calif.	56	37	12	3	2	2
San Diego, Calif.	110	72	16	11	3	4
San Francisco, Calif.	174	111	43	10	6	5
San Jose, Calif.	173	115	38	7	5	13
Seattle, Wash.	129	90	24	7	5	5
Spokane, Wash.	49	31	13	3	–	2
Tacoma, Wash.	50	39	7	1	3	5
TOTAL	11,311	7,119	2,675	731	389	483

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

**Pneumonia and influenza

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

Viral Hepatitis – Continued

Nearly all health departments surveyed (96%) require reporting of hepatitis cases. In most local health departments (93%), detailed surveillance data are collected and forwarded to state offices. Private physicians, public hospitals, and private hospital laboratories are the most important sources of hepatitis case reports, usually via telephone and mail reports. The CDC Viral Hepatitis Case Record is used by almost half of the respondents as at least 1 of their data-collection forms.

The most widely accepted case criterion for hepatitis is a physician's report supported by clinical and/or laboratory data (89%). Many health departments (65%) accept a physician's report without clinical or laboratory data, and about half of the departments accept a public health nurse's report supported by clinical or laboratory data. Sixty percent of the health departments judge that hepatitis B surface antigen (HBsAg) testing is essential for classification of clinical hepatitis into A, B, or non-A, non-B. However, only 20% insure that all cases are tested for HBsAg. Most state laboratories can measure for HBsAg.

More than half the health departments assign the task of collecting and reporting hepatitis surveillance data to a nurse. Occasionally a member of the clerical staff (22%), a nonphysician epidemiologist (8%), or a physician (5%) is given the responsibility.

Nearly 85% of the health departments routinely follow up case reports of hepatitis; however, 10%-15% only investigate "interesting cases" or clusters of cases. The distribution of staff assigned to case follow-up is similar to that for surveillance activities; a public health nurse assumes that responsibility in about 50% of the jurisdictions surveyed. Routine investigation of hepatitis reports usually includes contacting the attending physicians to confirm the diagnoses and contacting the individual patients to educate them about hepatitis and/or to identify their contacts at risk. About 80% of respondents make immune serum globulin available in their jurisdictions, generally at no charge, or for a fee of less than $5.00.

The reported number of local hepatitis cases is perceived to have a significant impact on local programs and policy. The greatest impact of reporting is on disease control and surveillance efforts, but it is also important in the determination of staff assignment and program assessment. National hepatitis surveillance data are perceived to have much less impact upon local programs.

Almost 50% of the local health departments routinely compare local hepatitis reports with previous county, regional, or national data. The publications considered to be most important for their impact on local hepatitis programs are each state's health department guidelines (38%), the MMWR (29%), and The Control of Communicable Diseases in Man* (23%). Most departments are familiar with the MMWR (81%) and the CDC Hepatitis Surveillance Report (74%), although only 6% of the jurisdictions ranked the latter report as having the greatest impact. Comparison of responses from large and small jurisdictions revealed no appreciable differences in this respect.

Reported by the Conference of State and Territorial Epidemiologists; Hepatitis Laboratories Div, Center for Infectious Diseases, Consolidated Surveillance and Communications Activity, Epidemiology Program Office, CDC.

Editorial Note: Many public-health resources are used in the surveillance and control of hepatitis. Surveillance of viral hepatitis has resulted in the identification or confirmation of sources of infection ranging from blood transfusions to ear piercing and tatooing.

*Benenson AS, ed. Control of communicable diseases in man. 12th ed. Washington, DC: American Public Health Association, 1975.

Viral Hepatitis — Continued

In recent years, surveillance has shown that other locations or activities are associated with infection, such as day-care centers, sexual contact, and acupuncture. Ultimately, this surveillance relies upon activity at the local level.

This survey indicates that hepatitis case surveillance and investigation are accorded high priority by local health departments. Increasing use of the new standardized case-report forms and of uniform case definitions will make possible more reliable comparisons of hepatitis surveillance data gathered in different jurisdictions. The reported lack of reliance on national surveillance may reflect the fact that modalities for control have been limited, and local efforts have been directed at education, immunoglobulin administration, and case counting. With the introduction of vaccines for hepatitis control, surveillance will assume increased importance for budget allocations at all levels—local, state, and federal. As has been the case for other vaccine-preventable diseases, such surveillance will reflect the interdependence of local, state, and national disease surveillance and control programs.

Volcano Monitoring Program — Mount St. Helens

With the reawakening of Mount St. Helens, volcanic activity has become recognized as a major public health hazard in the western United States. Before May 18, 1980, when Mount St. Helens erupted with such force, the danger was perceived as remote, despite warnings by some geologists and others. Local planning is now necessary not only for future activity of Mount St. Helens but also for other volcanoes in the Cascade Range.

Twenty-four-hour monitoring of the volcano's activity is being undertaken at the U.S. Geological Survey (USGS) Center in Vancouver, Washington, which also has U.S. Forest Service staff. Information on the status of the volcano is received from 6 main sources: 1) seismographs operated 24 hours a day in Vancouver and in the Department of Geophysics, University of Washington, Seattle (there is a 24-hour telephone hot-line between the 2 locations); 2) deformation studies involving measurements of the size of the crater and the volcano's flanks; 3) direct geologic observations (e.g., rock falls and changes in the dome); 4) measurement of type and quantity of gaseous emissions; 5) observations from a fixed-wing, U.S. Forest Service plane that is kept in the air throughout daylight hours and can also rapidly be made airborne at night; 6) other studies to provide background information (e.g., geologic studies of previous eruptions of Mount St. Helens).

At least once a day the volcano's status is assessed by the Hazards Coordinator in collaboration with the Director of the USGS Center. Should there be a change in the volcano's status, the Hazards Coordinator, who is on 24-hour call, is contacted immediately. Depending on his findings and interpretation, he can release an alert or warning that an eruption may be forthcoming or an advisory stating that increased seismic activity is occurring. The U.S. Forest Service will transmit this information to the appropriate emergency groups through a call-down system that, in an emergency, takes approximately 10 minutes to complete. During the day, people working in danger zones are also notified by radio so that they can evacuate.

The most important tool for providing warning of an impending eruption is the seismic trace. However, seismic readings have to be interpreted along with other sources of information, such as increasing deformation of the dome over a period of days pre-

Volcano Monitoring Program -- Continued

ceding an increase in seismic activity. It may take several hours before a seismic trace develops sufficiently for a warning to be given with assurance. So far, it appears possible to give about 4 hours' warning, but this is based on the experience from 3 of 4 recent eruptions of Mount St. Helens. Not enough is known to be certain that sufficient warning can be given before all eruptions to allow time to evacuate people from hazardous areas around the mountain.

Within about 10 minutes of the beginning of a major eruption, it should be possible to advise that the eruption is actually occurring. At night or when visibility is otherwise poor, this information comes from the seismograph and from radar stations in Portland and Seattle. The size and direction of the plume can be inferred from radar observations, which would be used to warn aircraft in the area. The height, density, and breadth of the plume can be distinguished to warn of at least a massive eruption capable of producing disruptive, heavy ashfalls. Such a warning can theoretically be transmitted to cities 50 or more miles away before the plume reaches them; meteorologists on call can rapidly make predictions from wind and jetstream directions for cities farther away.

Reported by the Chronic Diseases Div, Center for Environmental Health, and the Div of Respiratory Disease Studies, National Institute for Occupational Safety and Health, CDC, in the CDC–Mount St. Helens Volcano Health Report #23, 23 Feb 1981.

Epidemiologic Notes and Reports

Outbreak of Illness due to *Clostridium perfringens* -- California

On January 14, 1981, health department officials were notified of a foodborne outbreak associated with a "Meals on Wheels" program for senior citizens in Victorville, California. Persons who became ill had had dinner delivered to their homes between 11:00 AM and 12:30 PM on January 13. Thirty-nine of the 41 persons who had received the suspected meals were interviewed. Twenty-three (59%) had symptoms, including diarrhea (91%), abdominal cramps (74%), nausea (35%), vomiting (22%), fever (9%), and headache (4%). The mean incubation period was 8.7 hours, with a range of 1-16 hours. Two patients required hospitalization. All patients recovered within 6 days, with the median duration of illness being 12 hours.

Chicken was implicated as the vehicle of transmission in terms of food-specific attack rates ($p=0.037$, Fisher exact test, 2-tailed). Food handlers for the catering service reported thinking that the chicken might be spoiled because of its unpleasant odor during heating. An attempt was then made to recall the catering trucks, but 41 of the suspected meals had already been delivered. Further questioning revealed that the chicken had

The Morbidity and Mortality Weekly Report, circulation 110,000, is published by the Centers for Disease Control, Atlanta, Georgia. The data in this report are provisional, based on weekly telegraphs 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. Send reports to: Attn: Editor, Morbidity and Mortality Weekly Report, Centers for Disease Control, Atlanta, Georgia 30333.

Send mailing list additions, deletions and address changes to: Attn: Distribution Services, Management Analysis and Services Office, 1-SB-419, Centers for Disease Control, Atlanta, Georgia 30333. When requesting changes be sure to give your former address, including zip code and mailing list code number, or send an old address label.

Clostridium perfringens – Continued

been cooked 6 days earlier, frozen, thawed on January 11, held refrigerated, and reheated on a steam table on January 13. The manner in which the chicken had been prepared and the timing of the onset of symptoms led investigators to suspect *Clostridium perfringens*-associated food poisoning. Laboratory tests of the chicken showed that it contained *C. perfringens* ($\geq 10^5$ organisms/gram).

Reported by AF Taylor, MPH, PF Ryan, RS, MPPA, JJ Kalnas, JM Downer, RS, LE Mahoney, MD, San Bernardino County Health Dept; SB Werner, MD, California Dept of Health Services; Enteric Diseases Br, Bacterial Diseases Div, Center for Infectious Diseases, CDC.

Editorial Note: Between 1975 and 1979, 57 outbreaks (3,223 cases) of foodborne illness associated with *C. perfringens* were reported to CDC, making *C. perfringens* the third most common bacterial pathogen (after *Salmonella* and *Staphylococcus*) implicated in cases of foodborne disease. The most common vehicles in *C. perfringens*-associated outbreaks were beef and beef products; turkey was the next most common.

C. perfringens is widely distributed in the environment and is frequently isolated from the intestinal tract of animals and humans (*1*). Some strains produce heat-resistant spores that are not destroyed by cooking but may germinate and multiply if food is held at a warm temperature (optimally in the range of 109-117 F, 42.8-47.2 C) for a period of hours (*2*). The organism is demanding in its nutritional needs, requiring 13-14 amino acids and 5-6 growth factors for multiplication; these nutritional requirements may account for the frequent association of such outbreaks with high-protein foods.

C. perfringens can be confirmed as the causative agent of an outbreak of foodborne disease by culturing the same serotype from both epidemiologically incriminated food and stool specimens of ill individuals, isolating the same serotype from stool specimens of ill individuals but not of controls, or identifying $\geq 10^5$ organisms per gram from epidemiologically implicated food.

References

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HHS Publication No. (CDC) 81-8017