CENTERS FOR DISEASE CONTROL



MORBIDITY AND MORTALITY WEEKLY REPORT

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Progress in Chronic Disease Prevention

# Arthritis Program - Missouri

Over the past 11 years, efforts to meet arthritis-related needs in Missouri have evolved through several stages: 1) development of an informal group of concerned citizens, 2) appointment of the Missouri Task Force on Arthritis, 3) passage of legislation regarding arthritis and funding of a State Arthritis Program, 4) creation of regional arthritis centers, and 5) collection of state data to target arthritis-related efforts in Missouri.

Missouri began working toward a state arthritis plan in 1976, when concerned citizens formed a coalition to address the state's needs regarding arthritis. The Missouri Task Force on Arthritis, officially appointed by the Missouri Board of Health in 1977, was asked to assess arthritis-related needs and formulate recommendations. Members were organized into several working groups focusing on health-care facilities, manpower needs, professional education, public education, research, and public affairs.

Public hearings were held in all regions of the state in 1979. Task force members, assisted by the Eastern and Western Missouri Arthritis Foundation chapters, mobilized local community leaders, regional news media, and concerned individuals to promote the hearings. From the public hearings and the findings of the working groups, the task force wrote a three-volume report that reflected a consensus of recommendations (1). These recommendations included establishing a statewide network of regional arthritis centers for diagnostic, treatment, and educational services; providing educational programs for physicians and allied health professionals; training and recruiting more rheumatologists for underserved areas; improving public education; and increasing research efforts.

A bill encompassing the recommendations of the State Arthritis Plan and modeled on congressional legislation that led to the enactment of the National Arthritis Act in 1976 was first submitted to the Missouri legislature in 1980. The bill, which was

### Arthritis Program - Continued

signed into law in 1984, gave the Department of Health the authority to establish a network of regional arthritis centers and to appoint two advisory bodies. The 25-member Missouri Arthritis Advisory Board was formed and charged with making recommendations to the Department of Health on the statewide arthritis plan and with assisting in issuing guidelines for the services provided by the regional arthritis centers. A separate Program Review Committee was created to select regional centers. Eight regional arthritis centers were selected from applications from health-care institutions, and funds were awarded to seven by contract in the fall of 1985 (2).

During their first 2 years, the regional arthritis centers educated 2,600 health professionals and reached 4,600 persons through public education sessions. Also, over 1,000 persons with arthritis attended specially tailored programs, such as an aquatic exercise program and a self-help course taught in Spanish for the Kansas City Hispanic population. Two centers established newsletters and a WATS line. Television presentations have also been developed. Activities within each region have involved the collaboration of private physicians, the Arthritis Foundation, local hospitals, and other resources to maximize the impact of the programs in the community (3).

Because the regional and national data available on attitudes and knowledge concerning arthritis and care-seeking behaviors are limited, a statewide telephone survey was conducted in early 1987. The goals were to determine specific beliefs and levels of awareness about arthritis among the general public to better focus program efforts (4). The Media Research Bureau of the University of Missouri School of Journalism administered a survey of 2,533 households. The major findings from the survey were 1) arthritis symptoms are severe before persons seek care; 2) the causes of arthritis are misunderstood; 3) the public has limited knowledge of specific arthritis diagnoses, types of effective treatments, and available sources for optimal care; 4) programs and advertisements on television and articles in newspapers and magazines are the most likely and effective mechanisms for changing knowledge and attitudes about arthritis (4).

Funding for the Missouri Arthritis Program began in October 1985. State funding has been augmented with Federal Preventive Health and Health Services Block Grant monies. Further information may be obtained by contacting Marsha Dubbert, R.N., Bureau of Chronic Diseases, Missouri Department of Health, Box 570, Jefferson City, Missouri 65102; telephone, (314) 751-6252.

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**Editorial Note:** Arthritis, one of the most common and disabling disorders, is not a single disease but a manifestation of more than a hundred diseases. According to the 1980 National Health Interview Survey, approximately 37 million people in the United States consider that they have arthritis (5). Extrapolation from the U.S. Health and Nutrition Examination Survey I indicates that 33% of the adult population has clinical evidence of joint swelling, tenderness, limitation of movement, or pain during movement (6).

The disabling effects of arthritis can be forestalled either by preventing musculoskeletal impairment or by preventing impairment from becoming a disability. The goal of state arthritis programs is to make optimal diagnostic, treatment, educational

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and rehabilitation services accessible to all individuals with arthritis and musculoskeletal diseases.

In a survey conducted by the Association of State and Territorial Health Officials in February 1987, 10 of the 49 state and territorial health agencies with formal written health plans cited arthritis as part of this plan. According to the survey, seven state chronic disease units included arthritis in their activities (7). *References* 

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# International Notes

# **Korean Hemorrhagic Fever**

Fourteen cases of Korean hemorrhagic fever (KHF) were identified among 3,754 U.S. Marines who participated in a joint U.S.-Korean military training exercise in the Republic of Korea (ROK) from late September to mid-November 1986. Ten individuals were hospitalized; two of these died. Cases were confirmed by serologic testing and by postdeployment screening of serum from 2,053 of the participants.

Korean hemorrhagic fever occurs frequently among rural civilians and Korean military personnel. However, in recent years, fewer than 10 cases have been recognized annually among U.S. troops. The Marine units participating in the military exercise were from camps in Okinawa, Japan, where KHF has not been reported. In addition, KHF had not been previously reported in association with this exercise, which is held annually, even though most of the training takes place northeast of Seoul in an area where the disease is endemic. There was nothing unusual about the exercise, except that it occurred approximately 1 month earlier than those held in previous years. The weather was milder; conditions were warm, dry, and dusty until early November.

Most (1,969) of the U.S. force was quartered in tents at Uncheon Base Camp, within the perimeter of a permanent ROK Army garrison camp southwest of Uncheon. Another 1,105 Marines were at Watkins Range, about 2 km northwest of Uncheon Base Camp. The remaining 680 troops were engaged in aviation activities at various locations distant from the base camp.

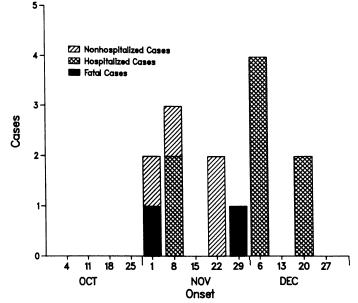
### Hemorrhagic Fever – Continued

The patient with the index case became ill on October 26. The other patients had onsets of illness throughout the ensuing 51 days (Figure 1). The last patient identified became ill on December 17, 38 days following his departure from Korea. The 10 hospitalized patients initially had nonspecific flu-like illnesses. The four nonhospitalized patients had a variety of symptoms. Prominent findings on admission included fever (100%), fatigue (100%), headache (90%), conjunctival injection (90%), thrombocytopenia (100%), and proteinuria (100%).

The overall attack rate was 4.6/1,000 among the total group of soldiers deployed in the Uncheon area (14/3,074) and 7.0/1,000 among the group that was screened (14/1,985). Cases occurred in several different units, but 13 of the 14 were among the 1,969 persons housed at Uncheon Base Camp. One was among the 1,105 persons housed at Watkins Range (rate ratio = 7.3; 95% confidence interval, 0.96 to 55.7). At least 10 of the patients lived in tents pitched along the periphery of the camp in an area near high grass and scrub brush. Six of the 14 patients (43%), including the two who died, were from a single engineer company of 118 men and women. All of the affected persons in this company were assigned to two of the three company platoons (attack rates, 54/1,000 and 94/1,000).

All of the soldiers who had been tested for antibody completed a questionnaire within 2 months of their return from Korea. In addition, 11 of the 12 surviving patients were interviewed. No temporal clustering by unit, field exercise area, environment, or work-related factors could be identified as risk factors for infection.

# FIGURE 1. Cases of Korean hemorrhagic fever among U.S. Marines participating in a military exercise,\* by date of onset of symptoms – Republic of Korea, October-December 1986



\*Personnel were billeted at Uncheon Base Camp from October 6-November 12; field training took place October 7-27; the field exercise took place November 1- 8; and redeployment was from November 12-December 1.

## Hemorrhagic Fever - Continued

Fifteen persons with IgM antibody titers >1:3,000 were identified by an enzymelinked immunosorbent assay (ELISA) specific for hantaviruses. Thirteen were confirmed by indirect immunofluorescence assay (IFA) (>1:128) and plaque-reduction neutralization (PRN) (>1:20). The fourteenth case was diagnosed by IFA and PRN alone. Neutralization tests distinguished *Apodemus*-associated (Hantaan) virus from urban rat-associated (Seoul) virus. All sera that had been confirmed as positive yielded titers at least fourfold higher against prototype Hantaan virus than against Seoul virus.

Approximately 150 cases of KHF were reported among ROK military forces between September and December 1986. Nine cases of KHF were identified among ROK troops stationed in the Uncheon area during the time of the exercise. Two of these occurred among the approximately 1,500 ROK Marines participating with the U.S. forces. Differential neutralization revealed *Apodemus*-associated infection in these patients as well.

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**Editorial Note:** Hemorrhagic fever with renal syndrome (HFRS), sometimes known as Korean hemorrhagic fever, is a viral infection acquired from rodents, principally the species *Apodemus agrarius, Rattus rattus*, and *Clethrionomys glariolus*. Human infections are widespread, particularly in Asia north of the Himalayas. For example, in the People's Republic of China, HFRS is responsible for over 100,000 reported cases annually, with the reported incidence increasing rapidly in the last few years (1). This increase may be the result of recent changes in agricultural practices, which may have altered rodent populations. The disease is undoubtedly ancient, but was first recognized independently and reported in the 1930s in Scandinavia and in Manchuria during the Japanese campaign (2). Most of the early recognized outbreaks were associated with military maneuvers, especially where troops had bivouacked in the open or had been involved in trench warfare. During the Korean conflict, at least 3,000 United Nations troops were affected (*3*,*4*). The prototype virus was isolated in 1978 and named after the Hantaan river in Korea (5).

The group of closely related viruses causing HFRS have recently been classified as the genus *Hantavirus*, forming a subgroup of the family *Bunyaviridae* (6). The virus is usually acquired directly from rodents, in which it establishes a silent but persistent infection. In these rodents, the virus is detected primarily in the lung and kidney, where it is able to persist in the presence of serum antibodies. Large quantities of virus are excreted throughout life. Humans may become infected through minor cuts and abrasions contaminated with rodent urine or feces, but evidence also suggests that aerosol infection may occur where virus contamination is heavy. Infections have also been reported among laboratory personnel in the Soviet Union, Japan, Scandinavia, and Belgium. Most of these have been associated with handling of infected wild or laboratory rodents (2,7).

Both the epidemiologic characteristics of outbreaks of human disease and the severity of the infection may be determined by the rodent host. *A. agrarius*, the major

<sup>\*</sup>The views of the authors do not purport to reflect the position of the U.S. Department of the Army or the U.S. Department of Defense.

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### Hemorrhagic Fever - Continued

host in Asia, is found mainly in rural areas, particularly in the eastern Soviet Union, mainland China, and Korea, where its habits are increasingly peridomestic. The Apodemus-associated hantaviruses probably cause the most severe human disease, with mortality rates currently reported between 3% and 7% (1). Rattus-associated disease is apparently less severe, and asymptomatic infections may be more common than with Apodemus-associated disease (8). Human infections from R. rattus are reported from some inner cities in Asia and probably occur also in rural areas where infestation with both R. rattus and A. agrarius is common. Although infected rats have been detected in Western cities, associated human disease has yet to be described (9). Nephropathia epidemica, which was first described in Scandinavia, is now known to be due to infection with a strain of Hantavirus that infects voles (Clethrionomys species) (10). It has become apparent recently that infected voles and human disease occur throughout Western Europe (11). Nephropathia

	6t	h Week End	ing	Cumulat	tive, 6th Wee	k Ending
Disease	Feb. 13, 1988	Feb. 14, 1987	Median 1983-1987	Feb. 13, 1988	Feb. 14, 1987	Median 1983-1987
Acquired Immunodeficiency Syndrome (AIDS) Aseptic meningitis Encephalitis: Primary (arthropod-borne	651 51	212 70	95 91	3,333 408	1,818 524	603 524
& unspec) Post-infectious	6 1	13 1	16 1	61 6	87 6	91 7
Gonorrhea: Civilian Military	11,324 294	14,927 231	15,425 254	78,937 1,357	100,520 1,910	97,127 2,072
Hepatitis: Type A Type B Non A, Non B	326 239	499 457	445 457	2,363 1,645	2,575 2,463	2,575 2,498 331
Unspecified Legionellosis	22 39 14	44 89 6	62 95 11	179 220 54	327 385 75	460 66
Leprosy Malaria	6	2 14	4 14	8 45	25 73	26 72
Measles: Total* Indigenous	46 45	25 22	25 22	149 144	137 113	137 113
Imported Meningococcal infections	1 48 59	3 73	3 71	5 330	24 425	24 337 370
Mumps Pertussis Rubella (German measles)	59 27	361 48 4	69 48 10	386 122 10	1,635 222 25	173 35
Syphilis (Primary & Secondary):. Civilian Military	461	625 34	614 7	3,718 15	3,810 40	3,263 40
Toxic Shock syndrome Tuberculosis	3 281	7 331	8 373	24 1,525	34 1,883	43 1,883
Tularemia Typhoid Fever Typhoid Fever	8	1 7	1	12 34	10 26	10 27
Typhus fever, tick-borne (RMSF) Rabies, animal	50	71	1 84	7 282	5 372	428

## TABLE II. Notifiable diseases of low frequency, United States

Anthrax - Leptospirosis (Hawaii 1) Botulism: Foodborne (N.C. 1) 4 Plague	Cum. 1988
Infant 3 Poliomyelitis, Paralytic Other 2 Psittacosis (Mass. 1) Brucellosis 3 Rabies, human Cholera - Tetanus Congenital rubella syndrome - Trichinosis	3 - - 5 - 3 2

\*One of the 46 reported cases for this week was imported from a foreign country or can be directly traceable to a known internationally imported case within two generations.

	т	Aseptic	Encep	halitie			н	enatitie	Viral), by	type		r
D	AIDS	Menin	Primary	Post-in-		orrhea /ilian)		в	NA,NB	Unspeci-	Legionel- losis	Leprosy
Reporting Area	Cum. 1988	gitis Cum. 1988	Cum. 1988	fectious Cum. 1988	Cum. 1988	Cum. 1987	Cum. 1988	Cum. 1988	Cum. 1988	fied Cum. 1988	Cum. 1988	Cum. 1988
UNITED STATES	3,333	408	61	6	78,937	100,520	2,363	1,645	179	220	54	8
NEW ENGLAND	191	21	4	-	2,351	3,506	82	115	8	21	1	3
Maine	7	2	1	-	46	110	5	4	-	-	-	-
N.H. Vt.	4	4	2	-	44 20	59 21	4	2 4	2	:	-	-
Mass. R.I.	106 7	9 4	1	-	771 182	1,328 276	53 15	93. 10	4 2	21	1	3
Conn.	67	4	-	-	1,288	1,712	5	2	-			-
MID. ATLANTIC	919	49	7	-	11,120	16,264	113	143	11	13	10	1
Upstate N.Y. N.Y. City	155 438	28 3	6 1	:	1,507 4,250	1,781 9,843	72 18	47 52	5	- 9	10	- 1
N.J.	217	18	-	-	1,648	1,192	23	44	6	4	•	-
Pa.	109	-	-	-	3,715	3,448	-	-		-		-
E.N. CENTRAL Ohio	304 66	56 25	7	-	12,731 3,036	13,358 2,744	344 264	192 65	9 2	12 1	12 2	-
Ind.	16	5	2	-	1,230	996	5	з	•	3	-	-
III. Mich.	117 89	25	1	-	3,546 4,347	3,957 4,491	10 60	8 109	7	1 7	9	-
Wis.	16	1	-	-	572	1,170	5	7	-	-	1	-
W.N. CENTRAL Minn.	87	18	4	1	3,087	4,133	188	70	10	1	5	-
iowa	28 4	6 3	1 3	-	429 273	704 392	5 5	10 10	1 2	1	2	-
Mo. N. Dak.	27	2	-	-	1,713	2,051	85	37	4	:	•	-
S. Dak.	3	4		1	19 63	33 96	1	1	-		1	-
Nebr. Kans.	9 16	3	•	-	173 417	274 583	16 76	7 5	1 2	•	2	-
S. ATLANTIC			-	-			104	327	17	39	12	_
Del.	494 3	94 3	5	2	21,943 326	26,330 366	104	9	1	1	1	-
Md. D.C.	58 36	8	•	-	1,928 1,325	2,316 1,665	11	44	1 2		1	-
Va.	58	3 10	4	1	1,822	2,203	10	20	2	26	-	-
W. Va. N.C.	3 50	3 21	1	-	212 3,433	149 3,894	20	6 73	- 5	2 4	6	-
S.C.	20	1	-	-	1,687	2,681	3	80	2	1	2	-
Ga. Fla.	76 190	5 40	-	1	3,882 7,328	4,364 8,692	9 48	25 69	1 3	5	2	-
E.S. CENTRAL	115	28	6	1	6,235	7,123	58	114	16	3	4	
Ky. Tenn.	4	12	2	-	577	767	50	19 48	5 8	1	1	-
Ala.	72 26	3 11	3 1	1	1,853 2,364	2,432 2,384	6	46	ŝ	2	2	
Miss.	13	2	-	-	1,441	1,540	2	2	-	-	-	-
W.S. CENTRAL Ark.	276	18	-	-	10,330	11,403	135 13	83 6	7	33 1	1	-
La.	7 44	1 2	:	-	768 2,955	1,160 1,946	2	23	1	2		-
Okla. Tex.	12 213	3 12	-	-	783 5,824	1,192 7,105	27 93	20 34	2 4	3 27	1	
MOUNTAIN	128		-	1	1,618	2,566	402	177	23	31	7	
Mont.	3	19	8		43	57	12	7	1	2	-	•
Idaho Wyo.	-	•	-	-	40 22	82 20	17	12	1			-
Colo.	53	7	2	-	371	544	22	28	3	12	4	-
N. Mex. Ariz.	7 45	4	2	-	177 542	281 907	79 206	17 79	1 10	10	1	
Utah Nev.	13	6	3	1	84	110	49	11	5	6	2	-
PACIFIC	7	2	1	•	339	565	17	23	2	1	2	4
Wash.	819 56	105	20	1	9,522 757	15,837 1,084	937 131	424 34	78 7	67 3	-	4
Oreg. J Calif.	36	-	-		382	570	243	85	13 56	4 59	1	4
Alaska	714 6	86 4	19	1	8,097 147	13,717 318	515 48	293 9	2	59	-	-
Hawaii	7	15	1	-	139	148	-	3	-	-	1	-
Guam P.R.	-	-		-	13	30 268	1	1 34	-3	1 6	-	•
V.I.	12 1	2	1		191 42	27	-	-	-	-	-	-
Amer. Samoa C.N.M.I.	-	-	-	-	- 6	45 14		- 1	-		-	
	-	-	-	-	0	14	-		-	-		

# TABLE III. Cases of specified notifiable diseases, United States, weeks ending February 13, 1988 and February 14, 1987 (6th Week)

N: Not notifiable

	Malaria			les (Rut			Menin- gococcal	M	mps		Pertussi	5		Rubella	
Reporting Area		Indig	enous	Impo	rted*	Total	Infections	l wiu	mps		renussi				
	Cum. 1988	1988	Cum. 1988	1988	Cum. 1988	Cum. 1987	Cum. 1988	1988	Cum. 1988	1988	Cum. 1988	Cum. 1987	1988	Cum. 1988	Cum 1987
UNITED STATES	45	45	144	1	5	137	330	59	386	27	122	222	-	10	25
NEW ENGLAND	5		1	-		6	36	-	3	1	14	5	-		
Maine N.H.			•	•	•		÷	-	-	-			-	•	
Vt.	-		-	:		6	5 1		2	:	11	1	-		-
Mass. R.I.	4	•	1	•	•	-	18	•	1	1	1	2	-	-	-
Conn.	1	:	-	-	:	-	8 4	•	-	-	2	1	1	:	-
MID. ATLANTIC	5	7	30			34	30	6	21	3	7	29			
Upstate N.Y.	3	-		-		2	17	3	5	1	3	20	-	-	-
N.Y. City N.J.	2	:	4	-	-	18	3	-	•	-	-	:	-	-	-
Pa.	-	7	26			1 13	10	3	6 10	2	4	1 8	-		-
E.N. CENTRAL	2		-	-		26	35	16	95	1	7	36			3
Ohio Ind.	-	-	-	-	-	ĩ	17	4	19		2	15	-	-	-
ma. III.	-	-	-	-	-		1	:	6		-	-	-	-	2
Mich.	2	-	-	-	-	3 22	1 12	1 11	6 55	1	5	6	-	-	ī
Wis.	-	-	-	-	-		4		9	-	-	15	-	•	-
W.N. CENTRAL Minn.	1	-	-	-	-		14	3	40	2	12	18			-
lowa	1	-	-	-	-	-	3	-		-		2	-	-	-
Mo.	-	-	-	-	-		6	2	15 10	2	3 2	27			-
N. Dak. S. Dak.	-	-	-	•	-	-	-		-	2	4	í	-		-
Nebr.		2	-	:	-	-	•	-	:		2	1	-	-	-
Kans.	-	-	-	-	-		5	1	1 14		1	5		-	-
S. ATLANTIC	9	1	1	1	3		51	14		5	18	47		-	1
Del. Md.	:	-	-	-	-	-	51	14	28	5	1	4/	-	-	-
D.C.	1 3	-	-	1†	2	-	4	1	1	-	-	-	-	-	-
Va.	ĩ	-	-	-	-		- 5	10 1	11 4	1	2	- 17	-	-	-
W. Va. N.C.	-	-	-	-	-		-		-		-	7	-	-	-
S.C.	3	-	-	-	1	-	9	:	3	4	12	18	-	-	-
Ga. Fla.	•	-	-	-	-		7 6	2	3 2		3	4	-	-	-
	1	1	1	-	-	•	20	-	4	-		1	-	-	1
E.S. CENTRAL Ky.	2	-	-	-	-	-	35	3	70		3	3	-	-	2 2
Tenn.	-			-	-	-	6	3	10	-	-	1	-	-	-
Ala. Miss.	2	-	-	-	-	:	20 9	-	58 1	-	3	-	-	-	-
	-	-	-	•	-	-	-	N	Ň	-	-	2	-	-	-
W.S. CENTRAL Ark.	3	-	-	-	-	1	14	11	35	-	-	6	-	-	-
La.	-	-	-	-	-	•	3	-	1	-	-	-	-	:	-
Okla. Tav	3	-	-		-	-	1	2 2	9 9	-	-	6		-	-
Tex.	-	-	-	-	-	1	10	7	16	-	-	-	•	-	-
MOUNTAIN Mont.	2	37	72	-	-	15	17	6	25	14	25	23		-	1
Idaho	-	:	:	-	-	-	-	-	-	-	•		-	:	-
Wyo.	-	-	-	-	-		1	:	1	14	21 1	14 2		-	-
Colo. N. Mex.	1	37	72	-	-		6		2	-		6	-	-	-
Ariz.	-	-	-		-	14	6	N	N	-	-	1	-	:	-
Utah Nev.	:	-	-	-	-	1	3 1	6	19 1	-	1 2	-	-	-	1
	1	-	-	-	-	-		-	2	-	-	-	-	-	-
PACIFIC Wash.	16 1	-	40	•	2	55	98		69	1	36	55	-	10	18
Oreg.	2	:	•	-	-	-	6	-	1	-	3	5		-	1
Calif. Alaska	12		40	-	1	1 54	9 77	N	N 65		2 21	8 34	-	9	16
Alaska Hawaii	1	•	•	-	-	-	1		3	1	1	2	-	1	1
Guam	-	•	-	-	1	-	5	•	-	•	9	6	-	'	-
P.R.	1	:	•	-	-	1	:	-	-		-	:	-	-	-
V.I.	-	•		-	-	-	3	-	2 6	•	-	4	:	-	-
Amer. Samoa C.N.M.I.	-	•	-	-	-	-	-				-			-	-
	•	-	-	-	•		-						-	-	

# TABLE III. (Cont'd.) Cases of specified notifiable diseases, United States, weeks ending February 13, 1988 and February 14, 1987 (6th Week)

\*For measles only, imported cases includes both out-of-state and international importations. N: Not notifiable U: Unavailable <sup>1</sup>International <sup>\$</sup>Out-of-state

UNITED STATES NEW ENGLAND Maine N.H. Vt. Mass. R.I. Conn. MID. ATLANTIC Upstate N.Y. N.Y. City N.J. Pa. E.N. CENTRAL Ohio Ind. III. Mich. Wis. W.N. CENTRAL Minn. Iowa Mo. N. Dak. S. Dak. N. Dak. S. Dak. N. Dak. S. Dak. N. Dak. S. Dak. N. Dak. S. ATLANTIC Del. Md. D.C. Va. S. CENTRAL Md. D.C. Va. S. CENTRAL Ky. Tenn. Ala. Miss. W.S. CENTRAL Ky. Tenn. Ala. Miss. W.S. CENTRAL Ark. La. Okia. N.S. CENTRAL Ark. La. Okia. C. CENTRAL Miss. C. CENTRAL Miss. C. CENTRAL Miss. C. CENTRAL Miss. C. CENTRAL Miss. M. S. CENTRAL Ala. Miss. M.S. CENTRAL Ark. La. Okia. C. C. C. C.	Cum. 1988 3,718 115 2 44 3 65 719 49 49 49 49 88 117 94 5 14 469 84 117 2 2 7 1 2 1 3 1 1 2 1 1 2 1 3 65 7 19 49 49 5 14 5 1 1 2 1 1 2 1 1 1 2 1 1 2 1 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 2 1 1 2 1 1 2 2 1 3 1 1 2 1 2 2 1 1 2 2 1 2 1 2 1 2 1 1 1 1 1 1 1 1 1 1 1 1 1	Cum. 1987 3,810 54 - 1 36 - 17 485 10 310 63 102 118 9 6 81 12 10 16 4 3 9 - - 10 102 118 9 6 81 12 10 102 118 9 6 81 12 102 118 9 6 81 12 102 118 9 6 81 102 118 9 6 81 102 118 9 6 81 102 118 9 6 81 102 118 9 6 81 102 118 9 6 81 12 102 118 9 6 81 12 102 118 9 6 81 12 102 118 9 6 81 12 102 118 12 102 118 12 102 118 12 102 118 12 10 102 118 102 103 103 103 105 105 102 118 102 104 104 105 105 105 105 105 105 105 105	Cum. 1988 24 4 1 2 - - - - - - - - - - - - - - - - - -	Cum. 1988 1.525 23 2 12 1 8 283 59 76 6 255 51 17 9 6 82 9 4 4 12 4 20 0 - 8 8 -	Cum. 1987 1.883 32 1 1 1 6 3 20 368 85 165 64 54 244 44 42 108 74 46 53 9 5 30 1 2 3 3	Cum. 1988 12 - - - - - - - - - - - - - - - - - -	Cum. 1988 34 5 - - 4 - 1 2 1 1 - - - - - - - - - - - - - - -	(RMSF) Cum. 1988 7 - - - - - - - - - - - - - - - - - -	Animal Cum. 1988 282 2 2 2 2 2 2 3 - 2 9 - 2 9 7 - 2 9 7 - 2 9 7 - 2 9 7 - 2 9 7 1 4 4 8 21 11 11 1 1 1 1 1 1 1 1 1 1 1 1 1 1
NEW ENGLAND Maine N.H. Vt. Mass. R.I. Conn. MID. ATLANTIC Upstate N.Y. N.Y. City Pa. E.N. CENTRAL Ohio Ind. III. Mich. Wis. W.N. CENTRAL Minn. IUR. Mich. Wis. W.N. CENTRAL Minn. IOwa Mo. N. Dak. S. Dak. Nebr. Kans. S. ATLANTIC Del. Md. D.C. Va. S. CENTRAL Mich. S. CENTRAL Fla. E.S. CENTRAL Ky. S. CENTRAL Ky. W.S. CENTRAL Ky. W.S. CENTRAL Ark. La. Okla. Okla.	115 2 44 3 65 719 49 469 84 117 94 5 14 46 27 2 17 2 2 7 1 2 3 3 1,380 19	54 - - - - - - - - - - - - - - - - - - -	4 1 2 1 - 3 2 - 1 1 - 1 2 - 1 2 - 1 1 2 - 1 1	23 2 - 12 1 8 283 59 76 78 70 255 51 17 9 6 82 9 4 4 12 4 20	32 1 1 6 3 20 368 85 165 64 54 244 44 122 108 74 6 53 9 5 30 1 2 3	- - - - - - - - - - - - - - - - - - -	34 5 - - 4 - 1 2 1		282 2 2 - 2 2 - 29 - 29 7 - 29 7 - 2 2 1 4 48 21 11 1
Maine N.H. VI. Mass. R.I. Conn. MID. ATLANTIC Upstate N.Y. NJ. City Pa. E.N. CENTRAL Ohio Ind. E.N. CENTRAL Minn. Mich. WIN. CENTRAL Minn. III. Mich. W.N. CENTRAL Minn. Iowa Mo. N. Dak. S. Dak. N. Dak. S. Dak. Nebr. Kans. S. ATLANTIC Del. Md. DC. Va. S. CENTRAL Miss. W. Va. N.C. S.C. S.C. Ga. Fla. E.S. CENTRAL Ky. W.S. CENTRAL Ark. Niss. W.S. CENTRAL Ark. Okla.	2 1 3 65 719 49 84 117 94 5 14 46 27 2 17 2 2 7 - 1 2 3 3 1,380 19	54 - - - - - - - - - - - - - - - - - - -	4 1 2 1 - 3 2 - 1 1 - 1 2 - 1 2 - 1 1 2 - 1 1	23 2 - 12 1 8 283 59 76 78 70 255 51 17 9 6 82 9 4 4 12 4 20	32 1 1 6 3 20 368 85 165 64 54 244 44 122 108 74 6 53 9 5 30 1 2 3	- - - - - - - - - - - - - - - - - - -	5 - 4 - 1 2 1		2 - - - 29 - - - 29 - - - 2 9 7 - - 2 1 4 48 21 11
N.H. VI: Mass. R.I. Conn. MID. ATLANTIC Upstate N.Y. N.Y. City N.J. Pa. E.N. CENTRAL Ohio Ind. III. Mich. Wis. W.N. CENTRAL Minn. III. Mich. Wis. W.N. CENTRAL Minn. III. S. Dak. S. Dak. S. Dak. S. Dak. S. S. ATLANTIC Del. Md. D.C. Va. S. C. S. C. Ga. Fla. E.S. CENTRAL Ky. Tenn. Ala. Miss. W.S. CENTRAL Ark. Dak. S. CENTRAL Miss. W.S. CENTRAL Ark. Diss. W.S. CENTRAL Ark. Diss. M.S. CENTRAL Ark. Diss. Diss. Diss. Diss. Dist. Dist. Diss. Dist. Diss. Dist. Diss. Dist. Diss. Dist. Diss. Dist. Diss. Dist. Diss. Dist. Diss. Dist. Diss. Dist. Diss. Dist. Diss. Dist. Diss. Dist. Diss. Dist. Diss. Dist. Dist. Dist. Diss. Dist. Diss. Dist. Dist. Dist. Diss. Dist.	1 44 3 65 719 49 469 84 117 94 5 14 46 27 2 17 2 2 7 1 2 3 7 1 2 3 80 19	- 36 - 17 485 10 310 63 310 2 118 9 6 81 12 10 16 4 3 9 9 - - - - - - - - - - - - -	1 2 1 3 2 - 1 1 - 1 2 - 1 2 - 1 1 1	2 12 1 8 283 59 76 78 70 255 51 17 9 6 82 9 4 4 12 4 20	1 1 6 3 20 368 85 165 64 54 244 44 12 108 74 6 53 9 5 30 1 2 3	- - 5 - 4 -	- 4 - 1 2 1		29 
Vt. Mass. R.I. Conn. MID. ATLANTIC Upstate N.Y. N.Y. City Pa. E.N. CENTRAL Ohio Ind. III. Mich. Wis. W.N. CENTRAL Minn. III. Mich. Wis. W.N. CENTRAL Minn. Jowa Mo. N. Dak. S. Dak. S. Dak. N. Dak. S. Dak. N. Dak. S. Dak. N. Dak. S. Dak. N. Dak. S. Dak. N. Dak. S. CENTRAL Md. DC. Va. Va. Va. Va. Va. Va. Va. Va. Va. Va	- 44 3 65 719 469 84 117 94 5 14 46 27 2 7 1 2 2 7 1 2 3 1,380 19	36 17 485 10 310 63 102 118 9 6 81 12 10 16 4 3 9 9	- 1 - 3 2 - - 1 1 - - 1 2 - - 1 2 - - 1 1 2 - - 1 1 - - 1 - 1	283 59 76 78 70 255 51 17 96 82 9 44 12 4 20	1 6 3 20 368 85 64 54 244 44 108 74 6 53 9 5 30 1 2 3	- - 5 - 4 -	1 2 1		- - 29 - 29 7 - - 2 1 4 4 8 21 11
R.I. Conn. MID. ATLANTIC Upstate N.Y. N.Y. City N.J. Pa. E.N. CENTRAL Ohio Ind. III. Mich. Wis. W.N. CENTRAL Minn. IWA. N. Dak. S. Dak. N. Dak. S. Dak. Nebr. Kans. S. ATLANTIC Del. Md. DC. Va. S. CENTRAL Pd. S. CENTRAL Fla. E.S. CENTRAL Ky. Tenn. Ala. Miss. W.S. CENTRAL Atk. OKJ.	3 65 719 49 469 84 117 94 5 14 46 27 2 17 2 2 7 1 2 3 1,380 19	- 17 485 10 310 63 102 118 9 6 81 12 10 16 4 3 9 - - - - - - - - - - - - - - - -	3 2 - 1 1 - 1 - 5 - 1 2 - - 1 1	1 8 283 59 76 78 255 51 17 96 82 9 4 4 12 4 20	6 3 20 368 85 165 64 54 244 44 244 44 244 44 244 53 9 5 30 30 1 2 3	- - 5 - 4 -	1 2 1		- 29 7 - 2 1 4 48 21 11 1
Conn. MID. ATLANTIC Upstate N.Y. N.Y. City Pa. E.N. CENTRAL Ohio Ind. Mich. Wis. W.N. CENTRAL Minn. III. Mich. W.N. CENTRAL Minn. Iowa M. Dak. N. Dak. S. Dak. N. Dak. S. Dak. Nebr. Kans. S. ATLANTIC Del. Md. DC. Va. S. CENTRAL Ky. S. CENTRAL Ky. KS. CENTRAL Aia. Miss. W.S. CENTRAL Aia. Miss. W.S. CENTRAL Aik. No. CALLANTIC Del. M.C. S.C. S.C. Ga. Fla. E.S. CENTRAL Aia. Miss. W.S. CENTRAL Aik. N.S. CENTRAL Aik. Miss. W.S. CENTRAL Aik. Okla. Okla. Okla.	65 719 49 84 117 94 5 14 46 27 2 17 2 7 1 2 7 1 2 3 1,380 19	- 17 485 10 310 63 102 118 9 6 81 12 10 16 4 3 9 - - - - - - - - - - - - - - - -	3 2 - 1 1 - 1 - 5 - 1 2 - - 1 1	1 8 283 59 76 78 255 51 17 96 82 9 4 4 12 4 20	3 368 85 165 64 244 44 108 74 6 53 9 5 300 1 2 3 30	- - 5 - 4 -	1 2 1		- 29 7 - 2 1 4 48 21 11 1
MID. ATLANTIC Upstate N.Y. N.Y. City N.J. Pa. E.N. CENTRAL Ohio Ind. III. Wich. Wis. W.N. CENTRAL Minn. Owa Mo. N. Dak. S. Dak. N. Dak. S. Dak. N. Dak. S. Dak. Nebr. Kans. S. S. ATLANTIC Del. Md. D.C. Va. V.A. N.C. S.C. Ga. Fla. E.S. CENTRAL Ky. Tenn. Ala. Miss. W.S. CENTRAL Ark. La. Okla.	719 49 84 117 94 14 46 27 2 17 2 2 7 7 1 2 3 1,380 19	485 10 63 102 118 9 6 81 12 10 16 4 3 9 9 - - - - - - - - - 1,328	2 - - 1 - - - - - - - - - - - - - - - -	283 59 76 78 255 51 17 96 82 9 44 12 4 20	368 85 165 64 54 244 42 108 74 6 53 9 5 30 30 1 2 3	- - 5 - 4 -	2 1		- 29 7 - 2 1 4 48 21 11 1
Upstate N.Y. N.Y. City N.J. Pa. E.N. CENTRAL Ohio Ind. III. Wish. Wis. W.N. CENTRAL Minn. Iowa Mo. N. Dak. S. Dak. S. Dak. S. Dak. S. Dak. S. Dak. S. Dak. S. CENTRAL Md. DC. Ca. S.C. Ga. Fla. E.S. CENTRAL Ky. Tenn. Ala. Miss. W.S. CENTRAL Ark. Okla. Okla.	49 469 84 117 94 5 14 46 27 2 17 2 2 7 7 1 2 3 3 1,380 19	10 310 63 102 118 9 6 81 12 10 16 4 3 9 - - - - - - - - - - - - - - - - - -	2 - - 1 - - - - - - - - - - - - - - - -	59 76 78 70 255 51 17 96 82 9 44 12 4 20	85 165 64 244 44 12 108 74 6 53 9 5 30 1 2 3	- - 5 - 4 -	ī		- 29 7 - 2 1 4 48 21 11 1
N.Y. City N.J. Pa. E.N. CENTRAL Ohio Ind. III. Mich. Wis. W.N. CENTRAL Minn. Iowa Mo. N. Dak. S. Dak. S. Dak. Nebr. Kans. S. ATLANTIC Del. Md. D.C. Va. N.C. S.C. S.C. Fla. E.S. CENTRAL Ky. Fenn. Ala. Miss. W.S. CENTRAL Ark. La. Okla.	469 84 117 94 5 14 46 27 2 17 2 2 7 - 1 2 3 1,380 19	310 63 102 118 9 6 81 12 10 16 4 3 9 - - - - - - - - - - - - - - - - - -	- 1 1 - 1 - 1 2 - 1 1	76 78 70 255 51 17 96 82 9 44 12 4 20	165 64 54 244 12 108 74 6 53 9 5 30 1 2 3	- - 5 - 4 -			29 7 - 2 1 4 48 21 11 11
Pa. E.N. CENTRAL Ohio Ind. Ill. Mich. Wis. W.N. CENTRAL Minn. Iowa Mo. N. Dak. S. Dak. S. Dak. Nebr. Kans. S. ATLANTIC Del. Dc. Cel. Md. DC. Va. NC. S.C. S.C. S.C. S.C. S.C. S.C. S.C.	84 117 94 5 14 27 2 7 2 17 2 2 7 7 1 2 3 1,380 19	63 102 118 9 6 81 12 10 16 4 3 9 9 - - - - - - - - - - - - - - - - -	1 - - - - - - - - - - - - - - - - - - -	78 70 255 51 17 96 82 9 44 12 4 20	64 54 244 12 108 74 6 53 9 5 30 1 2 3	- - 5 - 4 -			29 7 - 2 1 4 48 21 11 11
E.N. CENTRAL Ohio Ind. III. Mich. Wis. W.N. CENTRAL Minn. Iowa Mo. N. Dak. S. Dak. S. Dak. N. Dak. S. Jak. Nebr. Kans. S. ATLANTIC Del. Md. DC. Va. Va. Va. Va. S. CENTRAL Ky. Fla. E.S. CENTRAL Ky. S. CENTRAL Miss. W.S. CENTRAL Ark. Ark. Okla.	94 5 14 27 2 17 2 2 7 1 2 3 1,380 19	118 9 6 81 12 10 16 4 3 9 - - - - - - - - - - - - - - - - - -	1 - - - - - - - - - - - - - - - - - - -	255 51 17 96 82 9 44 12 4 20	244 44 12 108 74 6 53 9 5 30 1 2 3	- - 5 - 4 -	-	- - - - - - - - - - - - -	7 - 2 1 4 48 21 11 1
Ohio Ind. Ind. Mich. Wis. W.N. CENTRAL Minn. Iowa Mo. N. Dak. S. Dak. Nebr. Kans. S. ATLANTIC Del. Md. DC. Va. Va. Va. Va. S.C. S.C. Ga. Fla. E.S. CENTRAL Ky. Ky. S. CENTRAL Ais. Miss. W.S. CENTRAL Ark. La. Okla.	5 14 27 2 17 2 2 7 - 1 2 3 1,380 19	9 6 81 12 10 16 4 3 9 - - - - - - - - - - - - - - - - - -	- 1 - - - - - - - - - - - - - - - - - -	51 17 96 82 9 44 12 4 20	44 12 108 74 6 53 9 5 30 1 2 3	- - 5 - 4 -			- 2 1 4 48 21 11 1
Ind. Ind. Mich. Wis. Wis. W.N. CENTRAL Minn. Iowa Mo. N. Dak. S. Dak. S. Dak. S. Dak. S. Dak. S. Dak. S. Dak. S. CATLANTIC Del. Md. D.C. Va. MC. S.C. Ga. Fla. E.S. CENTRAL Ky. Tenn. Ala. Miss. W.S. CENTRAL Ark. La. Okla. Okla. Okla.	14 46 27 2 17 2 2 7 - 1 2 3 1,380 19	6 81 12 10 16 4 3 9 - - - - 1 2 1,328	1 - 5 - 1 2 - 1 1	17 96 82 9 44 12 4 20	12 108 74 6 53 9 5 30 1 2 3	1 - 5 - 4 -	-		1 4 48 21 11 1
III. Mich. Wis. Wis. W.N. CENTRAL Minn. Iowa Mo. N. Dak. S. Dak. Nebr. Kans. S. ATLANTIC Del. Md. DC. Va. NC. S.C. S.C. S.C. Fla. E.S. CENTRAL Ky. Tenn. Ala. Miss. W.S. CENTRAL Ark. La. Okla. Okla.	46 27 2 17 2 7 7 - 1 2 3 1,380 19	81 12 10 16 4 3 9 - - - - - - - - - - - - - - - - - -	1 - 5 - 1 2 - 1 1	96 82 9 44 12 4 20	108 74 6 53 9 5 30 1 2 3	1 - 5 - 4 -	-		1 4 48 21 11 1
Wis. Wi.N. CENTRAL Minn. Iowa Mo. N. Dak. S. Dak. S. Dak. S. Dak. Nebr. Kans. S. S. ATLANTIC Del. Md. DC. DC. Va. W. Va. N.C. S.C. Ga. Fla. E.S. CENTRAL Ky. Tenn. Ala. Miss. W.S. CENTRAL Ark. Dala. Okla. Okla. Okla.	27 2 17 2 2 7 1 2 3 1,380 19	12 10 16 4 3 9 - - - - - - - - - - - - - - - - - -	5 - 1 2 - 1 1	82 9 44 12 4 20	74 6 53 9 5 30 1 2 3	5 - - 4 -	-	-	1 4 48 21 11 1
W.N. CENTRAL Minn. Iowa Mo. N. Dak. S. Dak. Nebr. Kans. S. ATLANTIC Del. Md. DC. Va. DC. Va. Va. V. Va. S.C. S.C. S.C. Ga. Fla. E.S. CENTRAL Ky. W.S. CENTRAL Ala. Miss. W.S. CENTRAL Ark. La. Okla.	17 2 7 1 2 3 1,380 19	16 4 3 9 - - - - - 1,328	1 2 - 1 1	9 44 12 4 20	53 9 5 30 1 2 3	4	-		4 48 21 11 1
Minn. lowa Mo. N. Dak. S. Dak. Nebr. Kans. S. ATLANTIC Del. Md. DC. DC. Va. Va. V. Va. N.C. S.C. Ga. Fla. E.S. CENTRAL Ky. Tenn. Ala. Miss. W.S. CENTRAL Ark. La. Okla.	2 2 7 1 2 3 1,380 19	4 3 9 - - - 1,328	1 2 - 1 1	12 4 20	9 5 30 1 2 3	4		- - - - -	21 11 1
lowa Mo. N. Dak. S. Dak. S. Dak. Nebr. Kans. S. ATLANTIC Del. D.C. D.C. Va. W. Va. D.C. Va. W. Va. N.C. S.C. Ga. Fla. E.S. CENTRAL Ky. Tenn. Ala. Miss. W.S. CENTRAL Ark. La. Okla.	2 7 - 2 3 1,380 19	4 3 9 - - - 1,328	1 2 - 1 1	12 4 20	5 30 1 2 3	4	-		21 11 1
Mo, N: Dak, S: Dak, Nebr. Kans. S: ATLANTIC Del. Md. DC. Va. W. Va. N.C. S.C. Ga. Fla. E.S. CENTRAL Ky. Tenn. Ala. Miss. W.S. CENTRAL Ark. La. Okla.	7 - 2 3 1,380 19	9 - - 1,328	2 - 1 1	20	30 1 2 3	-	-		1
N. Dak. S. Dak. Nebr. Kans. S. ATLANTIC Del. Md. DC. Va. Va. Va. N.C. S.C. Ga. Fla. E.S. CENTRAL Ky. Ky. Ky. Ky. Ky. Ky. Ky. CENTRAL Ais. Miss. W.S. CENTRAL Ark. Ja. Okla.	1 2 3 1,380 19	1,328	- - 1 1	-	1 2 3	-	-	-	
S. Dak. Nebr. Kans. S. ATLANTIC Del. Md. D.C. Va. W. Va. N.C. S.C. Ga. Fla. E.S. CENTRAL Ky. Tenn. Ala. Miss. W.S. CENTRAL Ark. La. Okla.	2 3 1,380 19		1	8	2 3	1	-	-	
Kans. S. ATLANTIC Del. Md. D.C. Va. W. Va. N.C. S.C. Ga. Fla. E.S. CENTRAL Ky. Tenn. Ala. Miss. W.S. CENTRAL Ark. La. Okla.	3 1,380 19		1	-		1	-		6
S. ATLANTIC Del. Md. D.C. Va. N.C. S.C. Ga. Fla. E.S. CENTRAL Ky. Tenn. Ala. Miss. WS.S. CENTRAL Ark. La. Okla.	1,380 19			-			-	-	1
Del. Md. D.C. Va. N.C. S.C. Ga. Fla. E.S. CENTRAL Ky. Tenn. Ala. Miss. W.S. CENTRAL Ark. La. Okla.	19		2			-	-	-	4
Md. DC. Va. N.C. S.C. Ga. Fla. E.S. CENTRAL Ky. Tenn. Ala. Miss. W.S. CENTRAL Ark. La. Okla.			3	378	377	1	6	6	83
Va. W. Va. N.C. S.C. Ga. E.S. CENTRAL Ky. Tenn. Ala. Miss. W.S. CENTRAL Ark. La. Okla.	56	11 54	-	3 32	2 33	1	-	-	35
W. Va. N.C. S.C. Ga. Fla. E.S. CENTRAL Ky. Tenn. Ala. Miss. W.S. CENTRAL Ark. La. Okla.	65	34	-	12	14	-	-		-
N.C. S.C. Ga. Fla. E.S. CENTRAL Ky. Tenn. Ala. Miss. W.S. CENTRAL Ark. La. Okla.	46	36	-	47	41	-	3	-	20 5
Ga. Fla. E.S. CENTRAL Ky. Tenn. Ala. Miss. W.S. CENTRAL Ark. La. Okla.	1 86	80	2	9 25	13 44		1	6	5
Fla. E.S. CENTRAL Ky. Tenn. Ala. Miss. W.S. CENTRAL Ark. La. Okla.	50	88	-	44	48		-	-	3
E.S. CENTRAL Ky. Tenn. Ala. Miss. W.S. CENTRAL Ark. La. Okla.	225	205	-	38	34		2	-	20
ny. Ala. Miss. W.S. CENTRAL Ark. La. Okla.	832	820	1	168	148	•	-	-	
Tenn. Ala. Miss. W.S. CENTRAL Ark. La. Okla.	205	214	4	124	219	3 3	-	-	13 8
Miss. W.S. CENTRAL Ark. La. Okla.	3 51	1 75	2 1	40 18	44 59	3	-	-	•
W.S. CENTRAL Ark. La. Okla.	83	59	i	52	63		-		5
Ark. La. Okla.	68	79	-	14	53	-	-	-	-
La. Okla.	456	524	-	118	144	-	-	-	41
Okla.	7	24	-	7	10	-	-	-	9
Tow	74 20	70 19	•	19 22	25 17		-		4
	355	411	-	70	92	-	-	-	28
MOUNTAIN	70	82	1	24	43	2	2	1	29
Mont. Idaho	2	3	-		2	-	1	:	25
Wyo.	-	1	1	-	6	•	-	1	2
Colo.	13	12	-	4	4	2	1	-	-
N. Mex. Ariz.	7	7	-	10	8	-	-	-	1
Utah	12	39	-	8	20	-	-	-	1
Nev.	4 32	20	-	2	3		-	-	-
PACIFIC			-		403		19	-	30
Wash	662	989 17	3	276 17	403		2	-	-
Oreg. Calif.	31	19	-	14	13	-	3	- 1	-
Alaska	627	952	3	224	343	•	12	-	28 2
Hawaii	4	1	-	3 18	9 28		2	-	-
Guam	-	'	-	10			-	-	-
P.R.	85	109	-	- 21	2 15		-	-	6
V.I. Amer Saw	1	2	-		1	-	-	-	-
Amer. Samoa C.N.M.I.		3	-	-	13	-	-	-	-

# TABLE III. (Cont'd.) Cases of specified notifiable diseases, United States, weeks ending February 13, 1988 and February 14, 1987 (6th Week)

U: Unavailable

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1

Reporting Area         Name         Formalization         Reporting Area         Age         Formalization         Reporting Area         Age         Formalization         Formalizat			All Ca	uses, B	y Age	Years)		1	·		All Car	ises. R	v Aae	(Years)		
New ENGLAND         604         43         97         36         10         17         60         S.ATLANTC         1.457         97         323         138         34         67         72           Botton, Mass.         139         131         29         19         4         5         24         Atlantin, Ga.         113         24         Batimore, M.G.         288         513         23         138         34         67         72         94         4         71         14         34         Batimore, M.G.         288         52         21         8         16         4         71         13         Ghatton, M.G.         288         52         21         8         16         4         71         71         71         71         71         71         71         71         71         71         71         71         73         71         71         71         71         71         71         73         71 </th <th>Reporting Area</th> <th>All</th> <th><u> </u></th> <th>1</th> <th>1</th> <th></th> <th>&lt;1</th> <th></th> <th>Reporting Area</th> <th>All</th> <th>r</th> <th>r</th> <th><u> </u></th> <th></th> <th></th> <th></th>	Reporting Area	All	<u> </u>	1	1		<1		Reporting Area	All	r	r	<u> </u>			
Boston, Mass.         189         131         29         19         4         5         24         Animin Gau         "Age         603         42         133         24         16           Gambridge, Mass.         32         24         6         -         1         3         Charlotte, N.C.         88         55         21         8         1         6         4           Cambridge, Mass.         31         26         4         -         1         3         Charlotte, F.B.         141         131         66         32         7         6         7         1         Mass.         131         26         4         7         7         7         6         7         1         131         136         17         4         7         5         7         7         8         7         7         7         7         7         7         7         7         7         7         7         7         7         1         7         2         7         7         8         7         7         4         2         7         7         4         8         7         4         2         7         7         4         4<		Ages								Ages	- 05		23-44	1.2.4	`'	
Bridgeport, Conn. 35 27 4 2 1 1 4 2 1 1 4 2 1 1 4 2 1 1 4 2 1 2 1																
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### TABLE IV. Deaths in 121 U.S. cities,\* week ending February 13, 1988 (6th Week)

\*\*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.

TBecause 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.

t†Total includes unknown ages.

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

### Hemorrhagic Fever – Continued

epidemica is typically the least severe disease and causes very few deaths, although some patients may require dialysis. Some severe cases with hemorrhagic tendency have occurred in some European countries, particularly France (12). A severe disease caused by the local *Apodemus* species has been recently reported from Greece (13).

Hemorrhagic fever with renal syndrome has classically been divided into five stages: febrile, shock, oliguric, polyuric, and convalescent (2). In practice these stages frequently overlap, particularly the shock and oliguric phases. The initial symptoms are usually fever, flushed face, periorbital edema, and palatal and axillary petechiae. Conjunctivitis, headache, eye pain, lumbar pain, and tenderness are also common. Principal laboratory findings are proteinuria, hemoconcentration, and thrombocytopenia. Most patients recover spontaneously from this stage. A few progress to a phase of oliguria or anuria that is short and usually self-limiting. Shock can be managed by careful fluid replacement; the greatest danger to the patient is inadvertent fluid overload. Although petechiae, thrombocytopenia, and platelet functional abnormalities are very common, overt bleeding is not. In hospitals in some endemic areas of the People's Republic of China, the infection is most often self-limiting and without a severe phase, and the few deaths are usually due to intracranial hemorrhage or generalized uncontrollable bleeding.

The outbreak being reported is typical of endemic *Apodemus*-associated HFRS in Asia. There were no asymptomatic seropositives among those at risk for the disease. There was no evidence for a point source. The cases occurred sporadically during the fall season and were localized in an area presumably infested with infected *A. agrarius.* The experience mirrors those of the Japanese during their occupation of China and of the United Nations forces during the Korean conflict. The attack rate of the outbreak in this report is higher than that usually reported in civilian populations and probably reflects the relatively intense exposure to the virus encountered during the military operation.

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# Perspectives in Disease Prevention and Health Promotion

# Injuries and Amputations Resulting From Work With Mechanical Power Presses

On May 22, 1987, the National Institute for Occupational Safety and Health, CDC, released *Current Intelligence Bulletin #49: Injuries and Amputations Resulting from Work with Mechanical Power Presses.* This publication is one of a series of bulletins providing new information or updating existing data on chemical substances, physical agents, or safety hazards found in the workplace. A summary of the document, which is now available to the public,\* follows.

In 1980, there were an estimated 151,000 operators of mechanical power presses in the United States. The existing standard promulgated by the Occupational Safety and Health Administration (OSHA) for mechanical power presses provides requirements for press construction and operation (1). However, power press operators continue to be at risk of injury. Data from the U.S. Bureau of Labor Statistics indicate that about 20,000 amputations occur each year. Approximately 10% (1,600-2,000) of these amputations occur among power press operators (2). In addition, recent statistics compiled by OSHA indicate that approximately 49% of the injuries caused by mechanical power presses result in amputations (U.S. Department of Labor, Occupational Safety and Health Administration, unpublished data). Furthermore, an analysis of data on injury frequency and severity, operator hand speeds, payment of compensation, and the extent of worker exposure indicates that young male operators are at greater risk than other operators and that mechanical power presses are the metalworking machines most in need of research to improve safety. Current Intelligence Bulletin #49 provides recommendations for the safe use of mechanical power presses, specifically those operated by foot or dual palm-button controls. Adherence to these recommendations should reduce the risk of injury among mechanical power press operators.

Reported by: Div of Standards Development and Technology Transfer, National Institute for Occupational Safety and Health, CDC.

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<sup>\*</sup>Copies of Current Intelligence Bulletin #49 can be obtained without charge from the Publications Dissemination Section, Division of Standards Development and Technology Transfer, National Institute for Occupational Safety and Health, 4676 Columbia Parkway, Cincinnati, Ohio 45226; telephone, (513) 841-4287.

# Epidemiologic Notes and Reports

# Influenza Update - United States

The following are indicators of influenza activity in the United States for the weeks ending January 23 and 30 and February 6 and 13. Figures are provisional and may change as additional reports are received for the given weeks.

	Re	eport We	ek Endir	ng
	Jan 23 1988	Jan 30 1988	Feb 6 1988	Feb 13 1988
Influenza-associated morbidity levels reported by state and territorial epidemiologists				
Number of states reporting sporadic activity*	29	31	24	21
Number of states reporting regional activity <sup>†</sup>	10	11	17	21
Number of states reporting widespread activity <sup>§</sup>	2	4	6	5
Reports from sentinel physicians <sup>®</sup>				
Patients seen with influenza-like illness, expressed as percentage of total patient visits	4.3	6.1	6.0	5.2
Sentinel physicians reporting outbreaks, expressed as percentage of total number of reports received for week	18	19	39	39
Pneumonia and influenza (P&I) mortality from 121 U.S. cities**				
Percentage P&I deaths, upper limit of epidemic threshold	6.1	6.1	6.1	6.1
Percentage P&I deaths, observed value	5.8	5.8	6.0	5.9
Isolates reported by WHO Collaborating Laboratories and other laboratories				
Cumulative number of states reporting isolates of influenza A(H3N2) <sup>++</sup>	23	26	31	38
Cumulative number of states reporting isolates of influenza A(H1N1) <sup>§§</sup>	0	0	0	3
Cumulative number of states reporting isolates of influenza B <sup>¶¶</sup>	6	6	9	12
*Sporadically occurring cases, no known outbreaks.				

<sup>†</sup>Outbreaks in counties in which total population comprises less than 50% of total state population.

<sup>§</sup>Outbreaks in counties in which total population comprises 50% or more of total state population.

Members of the American Academy of Family Physicians who submit weekly influenza surveillance reports based on their patient population.

All deaths for which pneumonia or influenza is listed as a primary or underlying cause on death certificates. The epidemic threshold was calculated as 1.645 standard deviations above projected values using a periodic regression model applied to observed P&I deaths for the preceding 5-year period, excluding observations during influenza outbreaks. <sup>11</sup>Additional states reporting isolates of influenza A(H3N2) to date: Alaska, Illinois, Indiana,

Maryland, Nebraska, and Pennsylvania.

<sup>\$\$</sup>States reporting isolates of influenza A(H1N1) to date: Arkansas, New York, Texas.

"States reporting isolates of influenza B to date: Arizona, California, Hawaii, Michigan, Montana, Nevada, New York, Ohio, Tennessee, Virginia, Washington, and Wisconsin.

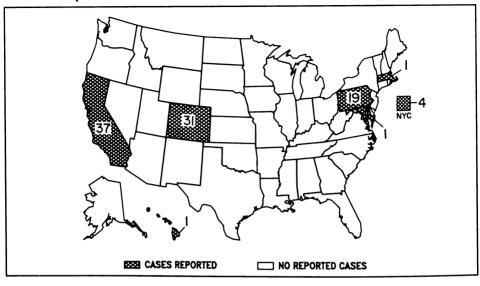
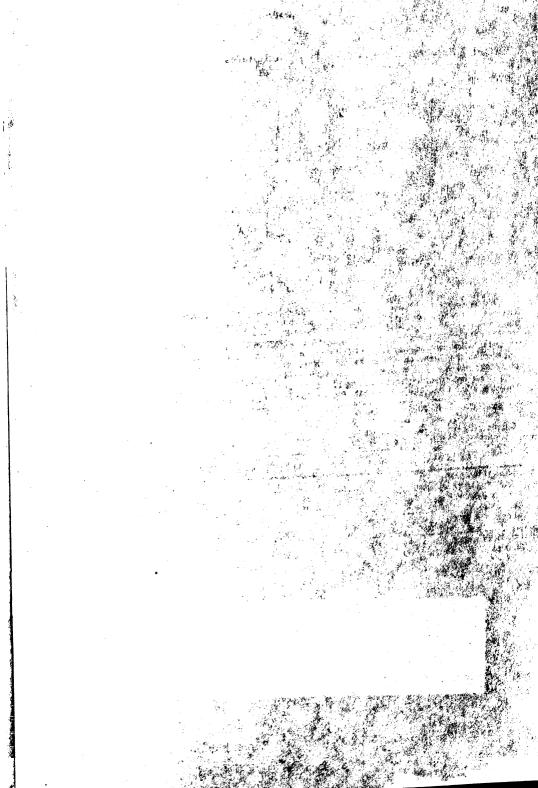


FIGURE I. Reported measles cases - United States, Weeks 2-5, 1988



The Morbidity and Mortality 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: Editor, *Morbidity and Mortality Weekly Report*, Centers for Disease Control, Atlanta, Georgia 30333.

Director, Centers for Disease Control James O. Mason, M.D., Dr.P.H. Director, Epidemiology Program Office Carl W. Tyler, Jr., M.D. Editor Michael B. Gregg, M.D. Managing Editor Gwendolyn A. Ingraham

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