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MORBIDITY AND MORTALITY WEEKLY REPORT

Heat-Related Illnesses and Deaths — United States, 1994–1995

Although heat-related illness and death are readily preventable, exposure to extreme temperatures causes at least 240 deaths* during years with no heat wave. A heat wave is defined by the National Weather Service as ≥3 consecutive days of temperatures ≥90.0 F (≥32.2 C). In 1980, 1983, and 1988 (recent years with prolonged heat waves), 1700, 556, and 454 deaths, respectively, were attributed to heat. This report describes four instances of heat-related illness and death that occurred in the United States during 1994 and 1995 and summarizes risk factors for heat-related illness and death.

Case 1. On June 13, 1994, in Houston, Texas, a 29-year-old mentally impaired women was found lying on the floor of her garage. She was unresponsive when admitted to a local hospital and had a rectal temperature of 107.9 F (41.9 C). She died within 2 days of arrival at the hospital. The outdoor temperature and humidity had reached 92.0 F (33.3 C) and 91%, respectively. Her underlying cause of death was listed as hyperthermia†.

Case 2. On June 18, 1994, in St. Louis, Missouri, a 68-year-old woman who weighed approximately 350 pounds complained of "feeling ill" at 11 p.m. Her spouse phoned paramedics, who found her unresponsive; cardiac rhythm was undetectable after she was placed in the ambulance. At 11:38 p.m., she was pronounced dead on arrival at the emergency department with a rectal temperature of 108.9 F (42.7 C). Her home air conditioning system was operational but had not been used. The outdoor temperature and humidity that day had reached 95.0 F (35.6 C) and 45%, respectively. Her cause of death was listed as hyperthermia, with morbid obesity listed as an "other condition."

Case 3. On July 1, 1994, in Tucson, Arizona, a 44-year-old woman, her 53-year-old brother (both mentally retarded), and their 72-year-old mother were found dead in

*During 1979–1992, a total of 5379 deaths in the United States were attributed to excessive heat, classified according to the *International Classification of Diseases, Ninth Revision* (ICD-9), as E900.0, "due to weather conditions"; E900.1, "of man-made origin"; or E900.9, "of unspecified origin." These data were obtained from CDC's Compressed Mortality File (CMF), which contains information from death certificates filed in the 50 states and the District of Columbia that have been prepared in accordance with external cause codes. CDC's Wide-ranging ONline Data for Epidemiologic Research computerized information system was used to access CMF data.

†Hyperthermia is the diagnostic term used for deaths resulting from core body temperature ≥105 F (≥40.6 C).

Heat-Related Deaths — Continued

their home by neighbors after they had not been seen for several days. The coroner's report indicated that the mother died first, and the children had remained in the house until they also died. There was no air conditioner in the house, and all windows were closed. The outdoor temperature and humidity had reached 106.0 F (41.1 C) and 36%, respectively. The cause of death for all three was listed as hyperthermia due to heat exposure.

Case 4. On June 26, 1995, in College Park, Georgia, a grocery store customer found a 6-year-old boy, a 4-year-old girl, and a 2-year-old boy in a locked car with the windows closed in the store parking lot. After unsuccessfully attempting to attract the children's attention, the customer called 911. Police and paramedics were able to get the 6-year-old to unlock the car door. Paramedics reported the children were unresponsive, disoriented, flushed, and profusely sweating and had delayed reflexes. The children were placed in the shade under a tree and given juice and water for rehydration; they regained alertness and began talking within 30 minutes. The children had been in the car for approximately 10–20 minutes. The outdoor temperature and humidity were 84.0 F (28.9 C) and 60%, respectively, and the estimated temperature inside the car was ≥110.0 F (≥43.3 C). Paramedics reported that the children had classic signs of the onset of heatstroke that would have been life-threatening within 5–10 minutes.

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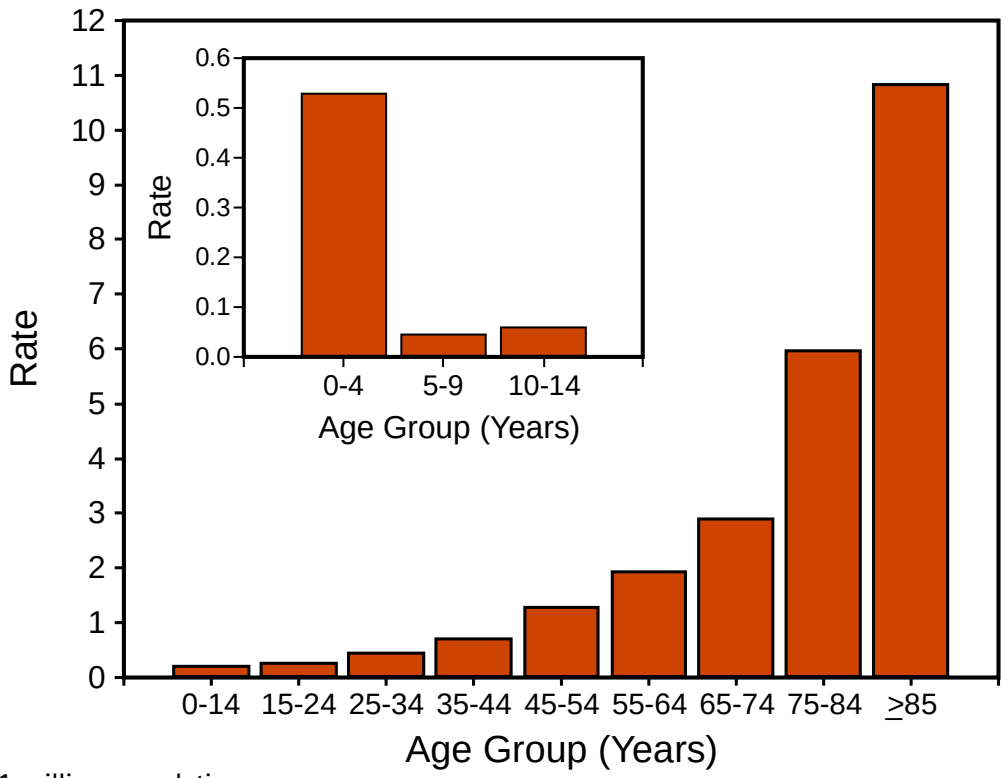
Editorial Note: Each year 148–1700 persons die in the United States because of excessive exposure to high temperatures. The highest age-adjusted death rates for heat-related illness have occurred in Alabama, Arkansas, Arizona, Georgia, Kansas, Mississippi, Missouri, Oklahoma, and South Carolina (from one to six per 1 million persons per year during 1979–1992). However, deaths listed with an underlying cause of hyperthermia represent only a portion of heat-related excess mortality because increased mortality from cardiovascular, cerebrovascular, and respiratory causes also occurs during heat waves (*1–4*).

Heatstroke, the most serious heat-related illness, is a medical emergency characterized by a body temperature ≥105.0 F (≥40.6 C) and may include symptoms such as disorientation, delirium, and coma. Onset of heatstroke can be rapid with progression to life-threatening illness within minutes. Heat exhaustion is a milder form of heat-related illness that can develop following exposure for several days to high ambient temperatures and inadequate or unbalanced replacement of fluids and electrolytes. Heat exhaustion is characterized by dizziness, weakness, and fatigue and may be sufficiently severe to require hospitalization.

The cases described in this report underscore the increased risk for heat-related illness and death among the very young (particularly infants), the elderly (i.e., persons aged ≥65 years) (Figure 1), and persons with impaired mobility (*5*). In addition, persons with chronic illness (e.g., cardiovascular disease) are at increased risk. Persons in these groups may be unable to obtain adequate fluids or to remove themselves from hot environments (e.g., closed automobiles). In extremely hot environments, the body is unable to cool itself through sweating.

Heat-Related Deaths — Continued

FIGURE 1. Average annual rate* of heat-related deaths†, by age group — United States, 1979–1992



*Per 1 million population.
† Underlying cause of death attributed to excess heat exposure, code E900.0, "due to weather conditions," *International Classification of Diseases, Ninth Revision*.

The risk for heat-related illness and death also may be higher among persons who use certain drugs (*1*), including neuroleptics (e.g., haloperidol or chlorpromazine), which impair thermoregulatory function; medications with anticholinergic effects (e.g., medication for Parkinson disease), which inhibit perspiration; and major tranquilizers (e.g., phenothiazines, butyrophenones, and thiozanthenes). In addition, excessive alcohol consumption can cause dehydration and may be a predisposing factor in heat-related illness (*5*). Salt tablets are not recommended and are potentially dangerous (*1*). Persons whose fluid consumption is restricted for medical reasons or who use diuretic medications should not alter their fluid intake patterns without the advice of their physicians. The risk for illness and death also may be increased in persons who are unacclimatized to the heat and who work or exercise vigorously outdoors, fail to rest frequently, or do not drink sufficient quantities of fluids; acclimatization to warm environments may require gradual exposure to high temperatures for 10–14 days (*6*).

The use of an artificially cooled environment (e.g., air-conditioning or evaporative cooling units), even for a few hours each day, will reduce the risk for heat-related illness (*5*). Fans can be a source of relief in areas with low humidity. However, because increased air movement (e.g., fans) has been associated with increased heat stress when the ambient temperature exceeds approximately 100 F (37.8 C) and because fans are not protective at temperatures >90 F (>32.2 C) with humidity > 35% (the exact

Heat-Related Deaths — Continued

temperature varies with the humidity), fans should not be used for preventing heat-related illness in areas of high humidity (*5,7*). Persons without home air conditioners should be assisted in taking advantage of such environments in private or in public places, such as shopping malls. Immersion in cool water (59.0 F– 61.0 F [15.0 C–16.1 C]) also can be used for maintaining acceptable body temperature.

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Update: Outbreak of Ebola Viral Hemorrhagic Fever — Zaire, 1995

As of June 25, public health authorities have identified 296 persons with viral hemorrhagic fever (VHF) attributable to documented or suspected Ebola virus infection in an outbreak in the city of Kikwit and the surrounding Bandundu region of Zaire (*1,2*); 79% of the cases have been fatal, and 90 (32%) of 283 cases in persons for whom occupation was known occurred in health-care workers. This report summarizes characteristics of persons with VHF from an initial description of cases and preliminary findings of an assessment of risk factors for transmission.

A case was defined as confirmed or suspected VHF in a resident of Kikwit or the surrounding Bandundu region identified since January 1. The median age of persons with VHF was 37 years (range: 1 month–71 years); 52% were female. Based on preliminary analysis of 66 cases for which data were available, the most frequent symptoms at onset were fever (94%), diarrhea (80%), and severe weakness (74%); other symptoms included dysphagia (41%) and hiccups (15%). Clinical signs of bleeding occurred in 38% of cases.

Potential risk factors for intrafamilial transmission were evaluated for secondary cases within households of 27 primary household cases identified through May 10. A primary household case was defined as the first case of VHF in a household; household was defined as persons who shared a cooking fire at the onset of illness in the primary household case. Among 173 household members of the 27 primary household cases, there were 28 (16%) secondary case-patients. The risk for developing VHF was higher for spouses of the primary household case-patients than for other household members (10 [45%] of 22 compared with 18 [14%] of 151; rate ratio [RR]=3.8;

Update: Ebola Virus — Continued

95% confidence interval [CI]=2.0–7.2) and for adults (aged ≥18 years) than for children (24 [30%] of 81 compared with four [4%] of 92; RR=6.7; 95% CI=2.4–18.4).

Needle sticks or surgical procedures during the 2 weeks before illness were reported for two of the 27 primary household case-patients and none of 28 secondary case-patients. Of the 28 secondary case-patients, 12 had direct contact with blood, vomitus, or stool of the ill person during hospitalization (i.e., later stages of illness), and 17 simultaneously shared the same hospital bed. Of 78 household members who had no direct physical contact with the person with the primary household case-patient during their clinical illness, none developed VHF (95% CI=0–4).

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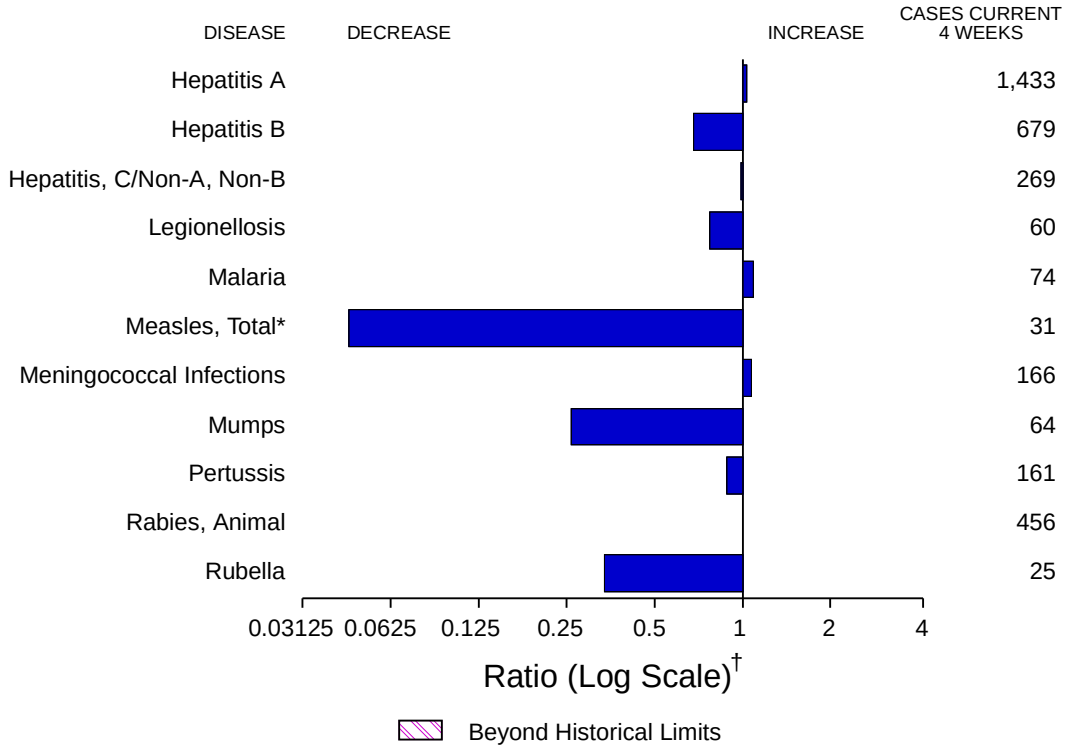
Editorial Note: The incidence of VHF related to Ebola virus in Kikwit has diminished following the institution of interventions including 1) training of medical and relief personnel on the proper use of protective equipment, 2) initiation of aggressive case-finding; and 3) educational measures in the community (e.g., pamphlets and public announcements) (*1,2*). However, cases continue to occur, and each case has the potential to be a source for additional infections. Therefore, ongoing measures including continued intensive surveillance, training activities, and public education are necessary to contain the epidemic.

To maximize prevention and control measures, prompt laboratory diagnosis is an important component of surveillance. An enzyme-linked immunosorbent assay (ELISA) detected Ebola antigen in specimens initially submitted to CDC from 11 of 13 acutely infected persons (*1*). Ongoing testing of additional specimens will assess the utility of this ELISA as a rapid diagnostic test that could be used locally. In addition, Ebola antigen was detected in multiple formalin-fixed tissue samples (liver, lung, and skin) of seven case-patients by immunohistochemical (IHC) staining using a specific polyclonal antibody. These findings suggest that IHC staining of fixed tissue may assist in surveillance for hemorrhagic fevers in Africa and other countries. Other activities include ecologic studies to identify the natural reservoir of the virus; these studies are focusing especially on mammals, nonmammalian vertebrates, and arthropods.

Transmission associated with health-care providers and caregivers has been a prominent feature of the current and previous VHF outbreaks in Africa attributable to Lassa, Marburg, Ebola, or Crimean-Congo hemorrhagic fever viruses (*3*). In some outbreaks, transmission from patient to patient within hospitals has been associated with the reuse of unsterile needles and syringes. As in previous outbreaks, high rates of transmission in this outbreak have occurred from patients to health-care workers and to family members who provided nursing care without appropriate barrier precautions to prevent exposure to blood, other body fluids, vomitus, urine, and stool. Based on findings in this report, the risk for transmitting infection from patients appears to be highest during the later stages of illness, which is characterized by vomiting, diarrhea, shock, and often hemorrhage. However, a small number of cases of VHF in Zaire

(Continued on page 475)

FIGURE I. Notifiable disease reports, comparison of 4-week totals ending June 24, 1995, with historical data — United States



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

†Ratio of current 4-week total to mean of 15 4-week totals (from previous, comparable, and subsequent 4-week periods for the past 5 years). The point where the hatched area begins is based on the mean and two standard deviations of these 4-week totals.

TABLE I. Summary — cases of specified notifiable diseases, United States, cumulative, week ending June 24, 1995 (25th Week)

	Cum. 1995		Cum. 1995
Anthrax	-	Psittacosis	31
Brucellosis	44	Rabies, human	1
Cholera	7	Rocky Mountain Spotted Fever	119
Congenital rubella syndrome	4	Syphilis, congenital, age < 1 year§	-
Diphtheria*	-	Tetanus	12
Haemophilus influenzae†	610	Toxic shock syndrome	98
Hansen Disease	66	Trichinosis	21
Plague	2	Typhoid fever	145
Poliomyelitis, Paralytic	-		

*The case previously reported in 1995 had onset of illness in October 1994. It will now be included in 1994 data.
†Of 596 cases of known age, 147 (25%) were reported among children less than 5 years of age.
§Updated quarterly from reports to the Division of Sexually Transmitted Diseases and HIV Prevention, National Center for Prevention Services. First quarter data not yet available.
-: no reported cases

TABLE II. Cases of selected notifiable diseases, United States, weeks ending June 24, 1995, and June 25, 1994 (25th Week)

Reporting Area	AIDS*	Gonorrhea		Hepatitis (Viral), by type						Legionellosis	
				A		B		C/NA,NB			
	Cum. 1995	Cum. 1995	Cum. 1994	Cum. 1995	Cum. 1994	Cum. 1995	Cum. 1994	Cum. 1995	Cum. 1994	Cum. 1995	Cum. 1994
UNITED STATES	29,887	167,147	183,830	11,801	10,640	4,611	5,502	2,072	2,005	612	665
NEW ENGLAND	1,471	2,274	3,925	118	158	88	199	53	75	12	12
Maine	26	36	48	16	14	6	9	-	-	3	-
N.H.	49	60	36	5	8	11	16	7	5	1	-
Vt.	14	21	12	3	2	1	6	1	6	-	-
Mass.	652	1,332	1,382	45	68	36	122	44	52	7	6
R.I.	122	245	226	14	13	8	3	1	12	1	6
Conn.	608	580	2,221	35	53	26	43	-	-	N	N
MID. ATLANTIC	7,605	17,229	20,475	717	751	559	714	193	249	69	87
Upstate N.Y.	836	2,612	4,450	191	269	181	192	102	111	22	19
N.Y. City	3,952	6,128	7,812	348	252	154	152	1	1	1	-
N.J.	1,794	1,704	2,605	96	153	135	197	75	112	14	17
Pa.	1,023	6,785	5,608	82	77	89	173	15	25	32	51
E.N. CENTRAL	2,492	36,756	37,344	1,504	1,020	481	590	142	182	172	190
Ohio	544	11,941	11,074	941	322	62	92	5	13	81	85
Ind.	200	3,667	3,799	77	171	115	108	-	4	41	23
Ill.	1,105	9,732	11,111	217	292	94	158	33	49	13	20
Mich.	502	8,820	8,003	184	130	187	192	104	116	19	38
Wis.	141	2,596	3,357	85	105	23	40	-	-	18	24
W.N. CENTRAL	697	8,852	9,937	745	511	246	307	52	43	61	48
Minn.	148	1,383	1,583	88	103	26	38	2	9	-	-
Iowa	40	697	631	38	27	19	16	3	7	12	21
Mo.	280	5,323	5,238	511	222	162	220	33	8	35	15
N. Dak.	2	13	20	14	1	3	-	3	1	3	4
S. Dak.	7	78	94	18	17	2	-	1	-	-	-
Nebr.	61	-	671	25	77	16	16	5	8	7	6
Kans.	159	1,358	1,700	51	64	18	17	5	10	4	2
S. ATLANTIC	7,773	49,907	48,398	581	542	672	1,099	150	266	100	167
Del.	154	961	872	7	14	2	8	1	1	-	-
Md.	1,133	5,971	9,221	93	82	111	172	5	15	18	39
D.C.	464	2,240	3,504	8	10	12	17	-	-	3	5
Va.	552	5,133	5,977	95	72	46	60	5	18	7	4
W. Va.	36	373	340	11	6	29	13	25	19	3	1
N.C.	405	11,665	11,527	58	57	153	129	27	34	18	12
S.C.	398	5,795	5,859	20	20	27	22	11	3	20	9
Ga.	935	7,928	U	47	23	58	466	15	148	11	75
Fla.	3,696	9,841	11,098	242	258	234	212	61	28	20	22
E.S. CENTRAL	961	20,684	21,348	537	228	439	549	577	419	16	58
Ky.	116	2,174	2,130	24	94	35	54	11	15	2	5
Tenn.	380	6,096	6,745	432	76	342	459	564	396	9	31
Ala.	263	8,769	7,569	50	34	62	36	2	8	4	7
Miss.	202	3,645	4,904	31	24	-	-	-	-	1	15
W.S. CENTRAL	2,513	15,120	21,840	1,435	1,345	679	501	290	123	7	16
Ark.	108	1,821	3,350	131	28	23	11	2	4	-	4
La.	366	5,724	5,790	43	70	97	83	78	62	2	1
Okla.	131	1,303	2,137	316	119	222	59	195	27	3	8
Tex.	1,908	6,272	10,563	945	1,128	337	348	15	30	2	3
MOUNTAIN	975	3,693	4,615	1,922	2,044	405	292	240	220	104	50
Mont.	8	38	38	39	14	10	10	9	4	4	14
Idaho	24	61	41	189	166	45	45	29	48	1	1
Wyo.	5	25	37	73	13	12	12	108	66	5	3
Colo.	339	1,456	1,574	246	243	60	52	32	39	30	11
N. Mex.	81	421	499	368	521	149	97	28	33	3	1
Ariz.	268	1,377	1,464	554	761	71	27	21	11	44	3
Utah	58	83	154	397	194	43	23	5	9	4	3
Nev.	192	232	808	56	132	15	26	8	10	13	14
PACIFIC	5,400	12,632	15,948	4,242	4,041	1,042	1,251	375	428	71	37
Wash.	463	1,190	1,435	345	541	86	111	108	126	7	8
Oreg.	184	202	446	772	431	43	77	23	21	-	-
Calif.	4,587	10,634	13,278	3,014	2,925	898	1,033	234	277	59	27
Alaska	45	351	424	19	113	5	7	1	-	-	-
Hawaii	121	255	365	92	31	10	23	9	4	5	2
Guam	-	42	67	2	12	-	4	-	-	-	1
P.R.	1,099	267	260	52	32	351	157	201	74	-	-
V.I.	19	4	11	-	2	2	4	-	1	-	-
Amer. Samoa	-	8	18	5	5	-	-	-	-	-	-
C.N.M.I.	-	13	25	15	3	7	-	-	-	-	-

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

*Updated monthly to the Division of HIV/AIDS Prevention, National Center for Prevention Services, last update May 25, 1995.

TABLE II. (Cont'd.) Cases of selected notifiable diseases, United States, weeks ending June 24, 1995, and June 25, 1994 (25th Week)

Reporting Area	Lyme Disease		Malaria		Measles (Rubeola)						Meningococcal Infections		Mumps	
					Indigenous		Imported*		Total					
	Cum. 1995	Cum. 1994	Cum. 1995	Cum. 1994	1995	Cum. 1995	1995	Cum. 1995	Cum. 1995	Cum. 1994	Cum. 1995	Cum. 1994	Cum. 1995	Cum. 1994
UNITED STATES	2,134	2,817	468	450	3	197	-	8	205	744	1,660	1,569	438	704
NEW ENGLAND	312	366	19	28	-	4	-	-	4	22	85	64	7	14
Maine	3	2	1	2	-	-	-	-	-	4	6	13	4	3
N.H.	12	10	1	3	-	-	-	-	-	1	17	6	-	4
Vt.	5	3	-	1	-	-	-	-	-	2	6	2	-	-
Mass.	53	43	6	11	-	2	-	-	2	6	29	27	1	-
R.I.	64	40	2	5	-	2	-	-	2	6	-	-	-	1
Conn.	175	268	9	6	-	-	-	-	-	3	27	16	2	6
MID. ATLANTIC	1,464	1,836	111	73	-	3	-	2	5	202	210	162	64	68
Upstate N.Y.	876	1,433	23	20	-	-	-	-	-	15	70	53	16	18
N.Y. City	47	3	51	24	-	1	-	2	3	12	22	22	5	-
N.J.	147	239	25	17	-	2	-	-	2	168	60	36	6	13
Pa.	394	161	12	12	-	-	-	-	-	7	58	51	37	37
E.N. CENTRAL	32	218	58	49	-	6	-	1	7	95	228	216	72	134
Ohio	23	13	4	7	-	1	-	-	1	15	70	62	22	39
Ind.	5	8	9	9	-	-	-	-	-	1	35	24	1	6
Ill.	3	10	31	19	-	-	-	-	-	56	70	78	23	55
Mich.	1	1	9	12	-	3	-	1	4	20	44	28	26	29
Wis.	-	186	5	2	-	2	-	-	2	3	9	24	-	5
W.N. CENTRAL	28	42	9	24	-	1	-	-	1	168	96	105	29	39
Minn.	-	-	3	7	-	-	-	-	-	-	16	9	2	3
Iowa	1	1	1	4	-	-	-	-	-	7	16	13	8	10
Mo.	10	36	3	9	-	1	-	-	1	159	36	51	15	23
N. Dak.	-	-	-	1	-	-	-	-	-	-	1	1	-	2
S. Dak.	-	-	-	-	-	-	-	-	-	-	4	6	-	-
Nebr.	1	2	2	2	-	-	-	-	-	1	9	8	4	1
Kans.	16	3	-	1	-	-	-	-	-	1	14	17	-	-
S. ATLANTIC	204	258	103	90	1	6	-	-	6	12	287	233	46	107
Del.	7	34	1	3	-	-	-	-	-	-	3	2	-	-
Md.	134	83	24	39	-	-	-	-	-	2	20	16	-	28
D.C.	-	2	9	8	-	-	-	-	-	-	1	2	-	-
Va.	16	28	21	9	-	-	-	-	-	2	33	42	14	24
W. Va.	12	9	1	-	-	-	-	-	-	1	5	10	-	3
N.C.	20	33	8	2	-	-	-	-	-	-	49	39	16	24
S.C.	7	4	-	2	-	-	-	-	-	-	36	11	7	6
Ga.	5	59	11	14	1	3	-	-	3	2	60	53	-	7
Fla.	3	6	28	13	-	3	-	-	3	5	80	58	9	15
E.S. CENTRAL	11	19	9	13	-	-	-	-	-	28	100	123	15	15
Ky.	1	12	-	4	-	-	-	-	-	-	32	25	-	-
Tenn.	7	5	3	6	-	-	-	-	-	28	27	24	4	5
Ala.	1	2	5	2	-	-	-	-	-	-	25	48	4	3
Miss.	2	-	1	1	-	-	-	-	-	-	16	26	7	7
W.S. CENTRAL	45	38	9	19	2	19	-	-	19	12	195	185	30	153
Ark.	2	3	2	1	-	2	-	-	2	1	19	31	2	4
La.	1	-	1	3	2	17	-	-	17	1	30	23	7	18
Okla.	18	19	-	2	-	-	-	-	-	-	21	18	-	22
Tex.	24	16	6	13	-	-	-	-	-	10	125	113	21	109
MOUNTAIN	4	2	29	20	-	47	-	1	48	154	129	116	27	23
Mont.	-	-	2	-	-	-	-	-	-	-	2	3	1	-
Idaho	-	1	1	2	-	-	-	-	-	-	5	14	2	5
Wyo.	2	1	-	1	-	-	-	-	-	-	5	5	-	1
Colo.	1	-	15	8	-	8	-	-	8	19	33	22	1	2
N. Mex.	-	-	3	3	-	28	-	-	28	-	28	11	N	N
Ariz.	-	-	5	1	-	10	-	-	10	-	42	40	6	2
Utah	-	-	2	4	-	-	-	1	1	126	7	15	10	7
Nev.	1	-	1	1	-	1	-	-	1	9	7	6	6	6
PACIFIC	34	38	121	134	-	111	-	4	115	51	330	365	148	151
Wash.	2	-	11	14	-	13	-	2	15	3	57	55	10	8
Oreg.	2	5	4	10	-	1	-	-	1	-	54	80	N	N
Calif.	30	33	98	102	-	97	-	1	98	46	211	224	125	132
Alaska	-	-	1	-	-	-	-	-	-	-	6	2	9	2
Hawaii	-	-	7	8	-	-	-	1	1	2	2	4	4	9
Guam	-	-	-	-	U	-	U	-	-	227	3	-	3	4
P.R.	-	-	1	2	-	9	-	-	9	11	12	5	-	2
V.I.	-	-	-	-	U	-	U	-	-	-	-	-	2	3
Amer. Samoa	-	-	-	-	U	-	U	-	-	-	-	-	-	2
C.N.M.I.	-	-	1	1	U	-	U	-	-	29	-	-	-	2

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

TABLE II. (Cont'd.) Cases of selected notifiable diseases, United States, weeks ending June 24, 1995, and June 25, 1994 (25th Week)

Reporting Area	Pertussis			Rubella			Syphilis (Primary & Secondary)		Tuberculosis		Rabies, Animal	
	1995	Cum. 1995	Cum. 1994	1995	Cum. 1995	Cum. 1994	Cum. 1995	Cum. 1994	Cum. 1995	Cum. 1994	Cum. 1995	Cum. 1994
UNITED STATES	50	1,386	1,690	2	62	171	7,215	10,343	8,553	10,018	3,064	3,385
NEW ENGLAND	6	175	177	-	14	119	87	107	171	195	811	884
Maine	2	20	2	-	1	-	2	4	-	-	-	-
N.H.	1	15	39	-	1	-	1	1	5	10	93	96
Vt.	-	5	27	-	-	-	-	-	2	3	109	78
Mass.	3	125	89	-	2	118	34	42	95	92	288	339
R.I.	-	-	3	-	-	1	1	9	18	18	137	5
Conn.	-	10	17	-	10	-	49	51	51	72	184	366
MID. ATLANTIC	3	124	300	2	6	6	434	636	1,812	1,946	691	824
Upstate N.Y.	3	65	114	1	3	5	24	86	185	259	261	587
N.Y. City	-	22	62	1	3	-	217	295	990	1,184	-	-
N.J.	-	5	9	-	-	1	87	108	333	346	183	147
Pa.	-	32	115	-	-	-	106	147	304	157	247	90
E.N. CENTRAL	3	135	263	-	-	6	1,230	1,464	885	955	20	20
Ohio	1	46	70	-	-	-	430	526	141	149	2	-
Ind.	-	13	35	-	-	-	118	116	21	86	3	3
Ill.	2	24	54	-	-	1	471	515	503	472	3	4
Mich.	-	40	23	-	-	5	130	149	190	217	11	7
Wis.	-	12	81	-	-	-	81	158	30	31	1	6
W.N. CENTRAL	-	63	73	-	-	2	378	611	274	255	157	104
Minn.	-	28	39	-	-	-	22	25	58	52	6	13
Iowa	-	2	6	-	-	-	28	25	38	17	54	41
Mo.	-	5	15	-	-	2	319	521	109	122	17	10
N. Dak.	-	6	3	-	-	-	-	1	1	4	18	6
S. Dak.	-	7	-	-	-	-	-	1	10	14	35	14
Nebr.	-	4	4	-	-	-	-	8	10	8	-	-
Kans.	-	11	6	-	-	-	9	30	48	38	27	20
S. ATLANTIC	16	134	171	-	16	10	1,738	2,670	1,613	1,908	1,034	906
Del.	1	6	-	-	-	-	8	14	12	18	33	21
Md.	-	15	54	-	-	-	42	114	205	152	213	296
D.C.	-	2	4	-	-	-	60	124	51	52	10	2
Va.	-	8	15	-	-	-	305	372	105	176	199	191
W. Va.	-	-	2	-	-	-	2	8	47	41	51	37
N.C.	5	55	44	-	-	-	564	860	180	230	211	88
S.C.	2	14	10	-	-	-	306	343	160	197	67	85
Ga.	-	1	13	-	-	-	257	422	271	365	143	184
Fla.	8	33	29	-	16	10	194	413	582	677	107	2
E.S. CENTRAL	3	32	91	-	-	-	1,979	1,816	465	694	86	98
Ky.	-	-	53	-	-	-	103	106	53	156	9	6
Tenn.	3	7	16	-	-	-	411	485	162	215	11	34
Ala.	-	25	14	-	-	-	313	343	185	209	66	58
Miss.	-	-	8	-	-	-	1,152	882	65	114	-	-
W.S. CENTRAL	-	67	51	-	2	7	1,002	2,407	1,087	1,146	61	363
Ark.	-	-	10	-	-	-	173	257	90	105	16	15
La.	-	4	5	-	-	-	524	881	-	7	23	43
Okla.	-	14	20	-	-	4	42	84	103	120	22	19
Tex.	-	49	16	-	2	3	263	1,185	894	914	-	286
MOUNTAIN	1	444	204	-	5	3	111	156	298	251	64	40
Mont.	-	3	3	-	-	-	3	1	3	9	23	8
Idaho	-	74	23	-	-	-	-	1	6	6	-	-
Wyo.	-	1	-	-	-	-	2	-	2	2	18	11
Colo.	1	14	112	-	-	-	70	76	22	26	-	6
N. Mex.	-	32	9	-	-	-	7	9	44	37	3	2
Ariz.	-	305	43	-	4	-	19	36	147	95	18	11
Utah	-	10	12	-	1	2	3	7	19	16	1	-
Nev.	-	5	2	-	-	1	7	26	55	60	1	2
PACIFIC	18	212	360	-	19	18	256	476	1,948	2,668	140	146
Wash.	4	41	46	-	1	-	7	21	133	126	-	4
Oreg.	-	8	43	-	1	-	6	18	23	67	-	-
Calif.	12	144	265	-	15	16	242	434	1,671	2,314	136	111
Alaska	-	-	-	-	-	-	1	2	42	33	4	31
Hawaii	2	19	6	-	2	2	-	1	79	128	-	-
Guam	U	-	2	U	-	1	1	3	5	37	-	-
P.R.	-	6	2	-	-	-	138	165	89	62	19	45
V.I.	U	-	-	U	-	-	1	22	-	-	-	-
Amer. Samoa	U	-	-	U	-	-	-	1	3	3	-	-
C.N.M.I.	U	-	-	U	-	-	3	-	13	16	-	-

U: Unavailable -: no reported cases

TABLE III. Deaths in 121 U.S. cities,* week ending June 24, 1995 (25th Week)

Reporting Area	All Causes, By Age (Years)						P&I† Total
	All Ages	≥65	45-64	25-44	1-24	<1	
NEW ENGLAND	609	421	106	59	16	7	35
Boston, Mass.	155	97	33	19	3	3	3
Bridgeport, Conn.	47	33	10	2	1	1	-
Cambridge, Mass.	16	12	2	2	-	-	-
Fall River, Mass.	30	24	4	2	-	-	2
Hartford, Conn.	58	33	12	9	3	1	2
Lowell, Mass.	25	19	5	1	-	-	2
Lynn, Mass.	11	10	1	-	-	-	2
New Bedford, Mass.	29	27	2	-	-	-	3
New Haven, Conn.	55	37	8	4	4	2	2
Providence, R.I.	38	31	5	2	-	-	-
Somerville, Mass.	5	1	2	2	-	-	-
Springfield, Mass.	52	38	7	6	1	-	5
Waterbury, Conn.	24	16	4	2	2	-	3
Worcester, Mass.	64	43	11	8	2	-	11
MID. ATLANTIC	2,367	1,545	420	296	58	48	110
Albany, N.Y.	45	36	6	3	-	-	4
Allentown, Pa.	28	21	6	1	-	-	-
Buffalo, N.Y.	97	70	12	11	3	1	3
Camden, N.J.	34	18	7	4	3	2	2
Elizabeth, N.J.	17	14	1	2	-	-	3
Erie, Pa.§	28	21	3	4	-	-	1
Jersey City, N.J.	32	18	5	5	1	3	-
New York City, N.Y.	1,266	796	245	163	38	24	35
Newark, N.J.	93	38	21	25	2	7	8
Paterson, N.J.	26	19	-	6	1	-	-
Philadelphia, Pa.	289	201	54	34	-	-	28
Pittsburgh, Pa.§	54	32	10	6	-	6	3
Reading, Pa.	9	7	-	2	-	-	1
Rochester, N.Y.	123	90	15	14	2	2	10
Schenectady, N.Y.	28	22	3	1	1	1	-
Scranton, Pa.§	28	22	4	1	1	-	2
Syracuse, N.Y.	95	63	19	7	4	2	6
Trenton, N.J.	34	24	5	4	1	-	1
Utica, N.Y.	14	11	3	-	-	-	1
Yonkers, N.Y.	27	22	1	3	1	-	2
E.N. CENTRAL	2,063	1,331	414	185	79	54	127
Akron, Ohio	54	38	12	4	-	-	-
Canton, Ohio	34	22	8	3	-	1	3
Chicago, Ill.	389	228	90	46	14	11	30
Cincinnati, Ohio	110	66	26	8	3	7	3
Cleveland, Ohio	156	83	36	25	7	5	4
Columbus, Ohio	164	101	39	14	7	3	11
Dayton, Ohio	109	74	24	4	3	4	5
Detroit, Mich.	186	110	39	20	13	4	3
Evansville, Ind.	68	53	12	3	-	-	5
Fort Wayne, Ind.	66	52	11	2	1	-	5
Gary, Ind.	26	15	2	4	5	-	-
Grand Rapids, Mich.	66	50	4	5	4	3	12
Indianapolis, Ind.	198	126	46	17	5	4	14
Madison, Wis.	42	29	6	3	4	-	4
Milwaukee, Wis.	112	80	16	6	2	8	5
Peoria, Ill.	43	30	9	1	2	1	7
Rockford, Ill.	48	33	9	5	1	-	6
South Bend, Ind.	34	26	6	1	1	-	1
Toledo, Ohio	97	70	12	9	4	2	8
Youngstown, Ohio	61	45	7	5	3	1	1
W.N. CENTRAL	677	467	117	40	18	26	37
Des Moines, Iowa	62	44	13	1	1	3	10
Duluth, Minn.	25	20	5	-	-	-	1
Kansas City, Kans.	U	U	U	U	U	U	U
Kansas City, Mo.	107	67	22	8	-	1	5
Lincoln, Nebr.	43	35	7	1	-	-	1
Minneapolis, Minn.	151	99	29	9	9	5	9
Omaha, Nebr.	88	64	16	3	2	3	7
St. Louis, Mo.	126	81	19	12	5	9	-
St. Paul, Minn.	75	57	6	6	1	5	4
Wichita, Kans.	U	U	U	U	U	U	U
S. ATLANTIC	1,185	734	249	143	40	18	82
Atlanta, Ga.	163	89	39	27	4	4	5
Baltimore, Md.	161	100	32	22	2	5	23
Charlotte, N.C.	124	78	28	13	4	1	7
Jacksonville, Fla.	126	81	22	17	3	3	10
Miami, Fla.	102	66	19	15	1	1	-
Norfolk, Va.	40	22	9	4	4	1	3
Richmond, Va.	61	33	24	2	2	-	3
Savannah, Ga.	29	20	5	3	1	-	2
St. Petersburg, Fla.	69	54	7	6	1	1	3
Tampa, Fla.	195	136	35	16	7	-	23
Washington, D.C.	108	50	29	16	11	2	3
Wilmington, Del.	7	5	-	2	-	-	-
E.S. CENTRAL	813	496	191	80	29	17	81
Birmingham, Ala.	112	69	26	13	3	1	4
Chattanooga, Tenn.	53	39	9	1	3	1	2
Knoxville, Tenn.	79	47	17	9	5	1	9
Lexington, Ky.	71	49	15	5	2	-	6
Memphis, Tenn.	233	134	58	25	9	7	27
Mobile, Ala.	67	43	11	9	1	3	2
Montgomery, Ala.	66	38	22	4	1	1	11
Nashville, Tenn.	132	77	33	14	5	3	20
W.S. CENTRAL	1,402	890	274	155	42	41	64
Austin, Tex.	70	40	15	11	4	-	6
Baton Rouge, La.	34	16	6	9	-	3	-
Corpus Christi, Tex.	59	40	14	4	-	1	2
Dallas, Tex.	191	108	38	31	8	6	5
El Paso, Tex.	56	44	8	2	1	1	5
Ft. Worth, Tex.	98	63	11	13	4	7	1
Houston, Tex.	334	217	71	35	4	7	20
Little Rock, Ark.	65	51	10	3	-	1	3
New Orleans, La.	141	81	24	23	8	5	-
San Antonio, Tex.	173	99	47	14	5	8	10
Shreveport, La.	69	49	7	5	6	2	6
Tulsa, Okla.	112	82	23	5	2	-	6
MOUNTAIN	927	641	152	94	23	17	60
Albuquerque, N.M.	103	64	21	9	4	5	4
Colo. Springs, Colo.	36	26	5	3	1	1	6
Denver, Colo.	133	78	23	24	3	5	8
Las Vegas, Nev.	181	136	28	16	1	-	9
Ogden, Utah	28	19	6	3	-	-	1
Phoenix, Ariz.	180	117	30	21	11	1	13
Pueblo, Colo.	31	19	6	6	-	-	2
Salt Lake City, Utah	98	75	16	5	1	1	9
Tucson, Ariz.	137	107	17	7	2	4	8
PACIFIC	1,816	1,224	291	183	48	43	142
Berkeley, Calif.	15	12	-	3	-	-	4
Fresno, Calif.	103	67	18	10	3	5	8
Glendale, Calif.	25	21	2	2	-	-	3
Honolulu, Hawaii	53	36	10	2	3	2	5
Long Beach, Calif.	72	48	12	9	1	2	9
Los Angeles, Calif.	525	350	90	50	22	9	26
Pasadena, Calif.	26	19	2	1	-	4	1
Portland, Oreg.	98	70	13	9	2	4	2
Sacramento, Calif.	166	115	26	18	5	2	22
San Diego, Calif.	129	85	24	15	2	3	17
San Francisco, Calif.	128	65	19	17	2	3	15
San Jose, Calif.	179	130	27	18	2	2	13
Santa Cruz, Calif.	36	25	7	4	-	-	6
Seattle, Wash.	129	87	19	15	3	5	4
Spokane, Wash.	53	39	8	3	1	1	4
Tacoma, Wash.	79	55	14	7	2	1	3
TOTAL	11,859¶	7,749	2,214	1,235	353	271	738

*Mortality data in this table are voluntarily reported from 121 cities in the United States, most of which have populations of 100,000 or more. A death is reported by the place of its occurrence and by the week that the death certificate was filed. Fetal deaths are not included.
†Pneumonia and influenza.
§Because of changes in reporting methods in these 3 Pennsylvania cities, these numbers are partial counts for the current week. Complete counts will be available in 4 to 6 weeks.
¶Total includes unknown ages.
U: Unavailable -: no reported cases

Update: Ebola Virus — Continued

have been reported in family members whose only contact with an infected person was in the domestic setting within a few days after onset of illness.

Updated recommendations for the management of VHFs attributable to these viruses in the United States are presented in a Notice to Readers in this issue (*4*).

References

1. CDC. Outbreak of Ebola viral hemorrhagic fever—Zaire, 1995. MMWR 1995;44:381–2.
2. CDC. Update: outbreak of Ebola viral hemorrhagic fever—Zaire, 1995. MMWR 1995;44:399.
3. CDC. Management of patients with suspected viral hemorrhagic fever. MMWR 1988;37(no. S-3):1–15.
4. CDC. Update: management of patients with suspected viral hemorrhagic fever—United States. MMWR 1995;44:475–79.

Notice to Readers

Update: Management of Patients with Suspected Viral Hemorrhagic Fever — United States

In 1988, CDC published guidelines for managing patients with suspected viral hemorrhagic fever (VHF) (*1*). Pending a comprehensive review of the 1988 guidelines, this notice provides interim recommendations that update the 1988 guidelines for healthcare settings in the United States. This update applies to four viruses that cause syndromes of VHF: Lassa, Marburg, Ebola, and Congo-Crimean hemorrhagic fever viruses; although the risk and/or mode of nosocomial transmission differs for each of these viruses, the limited data do not permit clear distinctions.

Background

In Africa, transmission of VHF has been associated with reuse of unsterile needles and syringes and with provision of patient care without appropriate barrier precautions to prevent exposure to virus-containing blood and other body fluids (including vomitus, urine, and stool). The risks associated with various body fluids have not been well defined as most caregivers who acquired infection had multiple contacts with multiple fluids. Epidemiologic studies of VHF in humans indicate that infection is not readily transmitted from person to person by the airborne route (*1,2*). Airborne transmission involving humans has never been documented and is considered a possibility only in rare instances from persons with advanced stages of disease (e.g., one patient with Lassa fever who had extensive pulmonary involvement may have transmitted infection by the airborne route) (*3*). In contrast, investigation of VHF in nonhuman primates (i.e., monkeys) has suggested possible airborne spread among these species (*4–7*). Despite uncertainties regarding the applicability to humans of data regarding airborne transmission in nonhuman primates, such information must be considered in the development of infection-control precautions because information regarding exposure and transmission in humans is limited.

The risk for person-to-person transmission of hemorrhagic fever viruses is highest during the latter stages of illness, which are characterized by vomiting, diarrhea, shock, and often hemorrhage. VHF infection has not been reported in persons whose contact with an infected patient occurred only during the incubation period (i.e., be-

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fore the patient became febrile; the incubation period ranges from 2 days to 3 weeks, depending on the etiology of the VHF [*1*]). In the 1995 Zaire outbreak, some instances of Ebola virus transmission within a few days after onset of fever were reported; however, other symptoms in the source patients and the level of exposure to body fluids among these secondary cases were unknown (CDC, unpublished data, 1995). In studies involving three monkeys experimentally infected with Ebola virus (Reston strain), fever and other systemic signs of illness preceded detection of infectious virus in the pharynx by 2–4 days, in the nares by 5–10 days, in the conjunctivae by 5–6 days, and on anal swabs by 5–6 days (P. Jahrling, U.S. Army Medical Research Institute of Infectious Diseases, unpublished data, 1995).

Reporting

All suspected cases of infection with Ebola virus and other hemorrhagic fever viruses should be reported immediately to local and state health departments and to CDC (telephone [404] 639-1511; from 4:30 p.m. to 8 a.m., telephone [404] 639-2888). Specimens for virus-specific diagnostic tests should be sent to CDC as rapidly as possible according to instructions provided when contact is made. General information regarding Ebola virus infection is available through the CDC Ebola Hotline (telephone [800] 900-0681).

Recommendations

The following recommendations apply to patients who, within 3 weeks before onset of fever, have either 1) traveled in the specific local area of a country where VHF has recently occurred; 2) had direct contact with blood, other body fluids, secretions, or excretions of a person or animal with VHF; or 3) worked in a laboratory or animal facility that handles hemorrhagic fever viruses. **The likelihood of acquiring VHF is considered extremely low in persons who do not meet any of these criteria.** The cause of fever in persons who have traveled in areas where VHF is endemic is more likely to be a different infectious disease (e.g., malaria or typhoid fever); evaluation for and treatment of these other potentially serious infections should not be delayed.

1. Because most ill persons undergoing prehospital evaluation and transport are in the early stages of disease and would not be expected to have symptoms that increase the likelihood of contact with infectious body fluids (e.g., vomiting, diarrhea, or hemorrhage), universal precautions are generally sufficient (*8*). If a patient has respiratory symptoms (e.g., cough or rhinitis), face shields or surgical masks and eye protection (e.g., goggles or eyeglasses with side shields) should be worn by caregivers to prevent droplet contact (*8*). Blood, urine, feces, or vomitus, if present, should be handled as described in the following recommendations for hospitalized patients.
2. Patients in a hospital outpatient or inpatient setting should be placed in a private room. A negative pressure room is not required during the early stages of illness, but should be considered at the time of hospitalization to avoid the need for subsequent transfer of the patient. Nonessential staff and visitors should be restricted from entering the room. Caretakers should use barrier precautions to prevent skin or mucous membrane exposure to blood and other body fluids, secretions, and excretions. All persons entering the patient's room should wear gloves and gowns to prevent contact with items or environmental surfaces that may be soiled. In addition, face shields or surgical masks and eye protection

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(e.g., goggles or eyeglasses with side shields) should be worn by persons coming within approximately 3 feet of the patient to prevent contact with blood, other body fluids, secretions (including respiratory droplets), or excretions. The need for additional barriers depends on the potential for fluid contact, as determined by the procedure performed and the presence of clinical symptoms that increase the likelihood of contact with body fluids from the patient (*8*). For example, if copious amounts of blood, other body fluids, vomit, or feces are present in the environment, leg and shoe coverings also may be needed. Before entering the hallway, all protective barriers should be removed and shoes that are soiled with body fluids should be cleaned and disinfected as described below (see recommendation 6). An anteroom for putting on and removing protective barriers and for storing supplies would be useful, if available (*1*).

3. For patients with suspected VHF who have a prominent cough, vomiting, diarrhea, or hemorrhage, additional precautions are indicated to prevent possible exposure to airborne particles that may contain virus. Patients with these symptoms should be placed in a negative-pressure room (*9*). Persons entering the room should wear personal protective respirators as recommended for care of patients with active tuberculosis (high efficiency particulate air [HEPA] respirators or more protective respirators) (*9*).
4. Measures to prevent percutaneous injuries associated with the use and disposal of needles and other sharp instruments should be undertaken as outlined in recommendations for universal precautions (*8*). If surgical or obstetric procedures are necessary, the state health department and CDC's National Center for Infectious Diseases, Hospital Infections Program (telephone [404] 639-6425) and Division of Viral and Rickettsial Diseases (telephone [404] 639-1511; from 4:30 p.m. to 8 a.m., telephone [404] 639-2888) should be consulted regarding appropriate precautions for these procedures.
5. Because of the potential risks associated with handling infectious materials, laboratory testing should be the minimum necessary for diagnostic evaluation and patient care. Clinical laboratory specimens should be obtained using precautions outlined above (see recommendations 1–4 above), placed in plastic bags that are sealed, then transported in clearly labeled, durable, leakproof containers directly to the specimen handling area of the laboratory. Care should be taken not to contaminate the external surfaces of the container. Laboratory staff should be alerted to the nature of the specimens, which should remain in the custody of a designated person until testing is done. Specimens in clinical laboratories should be handled in a class II biological safety cabinet following biosafety level 3 practices (*10*). Serum used in laboratory tests should be pretreated with polyethylene glycol p-tert-octylphenyl ether (Triton® X-100)*; treatment with 10 μL of 10% Triton® X-100 per 1 mL of serum for 1 hour reduces the titer of hemorrhagic fever viruses in serum, although 100% efficacy in inactivating these viruses should not be assumed. Blood smears (e.g., for malaria) are not infectious after fixation in solvents. Routine procedures can be used for automated analyzers; analyzers should be disinfected as recommended by the

*Use of trade names and commercial sources is for identification only and does not imply endorsement by the Public Health Service or the U.S. Department of Health and Human Services.

Notice to Readers — Continued

manufacturer or with a 500 parts per million solution of sodium hypochlorite (1:100 dilution of household bleach: ¼ cup to 1 gallon water) after use. Virus isolation or cultivation must be done at biosafety level 4 (*10*). The CDC mobile isolation laboratory is no longer available (*1*).

6. Environmental surfaces or inanimate objects contaminated with blood, other body fluids, secretions, or excretions should be cleaned and disinfected using standard procedures (*8*). Disinfection can be accomplished using a U.S. Environmental Protection Agency (EPA)-registered hospital disinfectant or a 1:100 dilution of household bleach.
7. Soiled linens should be placed in clearly labeled leak-proof bags at the site of use and transported directly to the decontamination area. Linens can be decontaminated in a gravity displacement autoclave or incinerated. Alternatively, linens can be laundered using a normal hot water cycle with bleach if universal precautions to prevent exposures are precisely followed (*8*) and linens are placed directly into washing machines without sorting.
8. There is no evidence for transmission of hemorrhagic fever viruses to humans or animals through exposure to contaminated sewage; the risk of such transmission would be expected to be extremely low with sewage treatment procedures in use in the United States. As an added precaution, however, measures should be taken to eliminate or reduce the infectivity of bulk blood, suctioned fluids, secretions, and excretions before disposal. These fluids should be either autoclaved, processed in a chemical toilet, or treated with several ounces of household bleach for ≥5 minutes (e.g., in a bedpan or commode) before flushing or disposal in a drain connected to a sanitary sewer. Care should be taken to avoid splashing when disposing of these materials. Potentially infectious solid medical waste (e.g., contaminated needles, syringes, and tubing) should either be incinerated or be decontaminated by autoclaving or immersion in a suitable chemical germicide (i.e., an EPA-registered hospital disinfectant or a 1:100 dilution of household bleach), then handled according to existing local and state regulations for waste management.
9. If the patient dies, handling of the body should be minimal. The corpse should be wrapped in sealed leakproof material, not embalmed, and cremated or buried promptly in a sealed casket. If an autopsy is necessary, the state health department and CDC should be consulted regarding appropriate precautions (*1*).
10. Persons with percutaneous or mucocutaneous exposures to blood, body fluids, secretions, or excretions from a patient with suspected VHF should immediately wash the affected skin surfaces with soap and water. Application of an antiseptic solution or handwashing product may be considered also, although the efficacy of this supplemental measure is unknown. Mucous membranes (e.g., conjunctiva) should be irrigated with copious amounts of water or eyewash solution. Exposed persons should receive medical evaluation and follow-up management (*1*).

Reported by: Hospital Infections Program, Div of Viral and Rickettsial Diseases, and Div of Quarantine, National Center for Infectious Diseases; Office of the Director, National Institute for Occupational Safety and Health; Office of Health and Safety, CDC.

Notice to Readers — Continued

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Notice to Readers

Prevention 96 Conference: Prevention for All — Challenges, Opportunities, and Strategies

Prevention 96, the 13th annual national preventive medicine meeting, will be sponsored by the American College of Preventive Medicine and the Association of Teachers of Preventive Medicine in collaboration with CDC and other national health agencies in Dallas, Texas, March 23–26, 1996. The conference will explore challenges, opportunities, and strategies for preventive medicine in the health-care system. Information on registration and submission of abstracts is available from the Meetings Manager, Prevention 96, 1660 L Street, N.W., Suite 206, Washington, DC, 20036-5603; telephone (202) 466-2569.

Erratum: Vol. 44, No. SS-2

In the *CDC Surveillance Summaries*, on page 29 of the report titled "Abortion Surveillance—United States, 1991," the ninth footnote to Table 3 should read: ***>100 abortions per 1,000 women 15–44 years of age.

Erratum: Vol. 44, No. 23

In the article "Implementation of Health Initiatives During a Cease Fire—Sudan, 1995" one of the areas in Figures 1 (page 434) and 2 (page 435) was mislabeled. In Figure 1, the area labeled "Red Sea" should have been labeled Red Sea state. In Figure 2, the area labeled "Red Sea" should not have been labeled.

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