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Current Trends

Field Evaluations of Pre-Exposure Use of Human Diploid Cell Rabies Vaccine

Following a case of human rabies in a Peace Corps volunteer (PCV) in Kenya in August 1983, (*1*) CDC, in cooperation with the Office of Medical Services, U.S. Peace Corps, conducted serosurveys of 333 PCVs in eight countries to assess the adequacy of rabies pre-exposure prophylaxis. Initial results indicate a lower-than-expected antibody response at several time periods following primary immunization.

All PCVs had been immunized outside the United States between 1979 and 1983 using a three-dose regimen (days 0, 7, and 28) of 0.1 ml intradermal (ID) doses of human diploid cell rabies vaccine (HDCV) produced by the Merieux Institute (*2*). Serum specimens were collected by either CDC or the Peace Corps medical staff, and the rapid fluorescent focus inhibition test (RFFIT) for rabies-neutralizing antibody was performed at CDC on all specimens. Time from the initial immunization to sera collection ranged from 42 days to 2 years.

PCVs serving in Kenya were most extensively studied. From September 1983 to October 1983, complete immunization histories and serum samples for rabies antibody determination were obtained from 90 of the approximately 250 PCVs in Kenya. Three cohorts were identified based on the time between primary immunization and collection of sera: (1) those immunized 45 days before phlebotomy; (2) those immunized 10-16 months before phlebotomy; (3) those immunized 2 years before phlebotomy. Serologic results for these groups were compared with results from previously published data at similar time periods after primary immunization (Table 1). Of the 25 specimens obtained 45 days after the beginning of primary immunization, only 17 (68%) were 0.50 or more international units (IU)/ml, and five (20%) were lower than 1:16.* One of this group of 25 had no detectable antibody (< 1:5 or < 0.05

*At present, CDC considers an antibody titer of 1:16 or higher an adequate response to vaccination in sera collected 14-21 days after the last injection (*3*). The World Health Organization considers 0.5 IU/ml an adequate response (*4*).

TABLE 1. Rabies antibody titers* at indicated times after primary intradermal immunization with human diploid cell rabies vaccine†

Kenya Peace Corps volunteers			Oklahoma veterinary students[5]		
Time after first dose	No. of sera	Geometric mean titer (range)	Time after first dose	No. of sera	Geometric mean titer (range)
45 days	25	0.4 (< 0.05-2.8)	49 days	26	7.4 (1.5-25.7)
307-481 days	31	0.1 (< 0.05-0.5)	365 days	24	1.6 (0.3-10.0)
652-695 days	28	0.3 (0.05-1.5)	730 days	11	1.7 (0.4-5.6)

*Expressed as IU/ml serum.

†Specimens from six PCVs did not fit into any of these cohorts and are therefore not shown in the table.

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IU/ml serum). An investigation in Kenya found no breaks in the vaccine cold chain; observations of vaccine administration revealed satisfactory ID technique.

In addition to the PCVs serving in Kenya, 83 PCVs from Malawi, Morocco, Nepal, Central African Republic, Senegal, and Sierra Leone were studied within 4 months of primary immunization; 36 (43%) had titers less than 0.5 IU/ml or lower than 1:50; one (1%) of these had no detectable antibody.

Initial surveys of groups immunized within the last 16 months with ID pre-exposure HDCV in the United States revealed different results. All 57 persons in a cohort from North Carolina had titers 1:50 or higher at 38 days after primary immunization. Forty-two days after primary immunization, all of 61 persons immunized ID and studied by the RFFIT in Wisconsin had antibody levels of 1:50 or higher. However, analysis of an adult cohort of 193 persons immunized in Maryland revealed 188 (97%) with titers of 1:50 or higher, four (2%) with titers 1:16-1:50, and one (1%) with no detectable antibody at 41-97 days after primary ID immunizations.

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Editorial Note: The use of HDCV administered ID has become widespread throughout the world because of the cost savings when using small doses for rabies pre-exposure prophylaxis. However, the U.S. Food and Drug Administration's (FDA) National Center for Drugs and Biologics has not approved the ID use of rabies vaccine; and an application for licensure of ID rabies vaccine is presently being considered. In May 1982, the Immunization Practices Advisory Commitee (ACIP) reviewed the data from 11 carefully conducted clinical studies in the United States and Europe, and at that time, found the ID route an acceptable alternative to the intramuscular (IM) route (*2*). The rabies antibody titers following ID immunization were lower than those after IM immunization and persisted for a shorter period of time. The data presented here indicate that HDCV administered ID to PCVs in multiple countries has not resulted in antibody titers as high as those demonstrated in vaccine trials conducted in the United States and Europe between 1978 and 1982 (*5,6*). All the above studies are based on the use of Merieux Institute's HDCV; there are no available data on response to ID vaccination with Wyeth Laboratories' HDCV.

Several factors might hypothetically contribute to the less satisfactory antibody responses seen in PCVs, including immunosuppressive effects of multiple vaccinations, immune serum globulin, or malaria chemoprophylaxis administered concurrently with the vaccine; a greater likelihood of cold-chain infractions; and perhaps a greater likelihood of receiving vaccine subcutaneously rather than ID. However, none of these factors appears at this time sufficient to explain the magnitude of the discrepancies in antibody responses described in the published trials and those observed in these recent field experiences. CDC and FDA are investigating other factors, including variations in vaccine potency.

Because the nature and extent of the problem are not completely delineated, certain precautions appear to be indicated. If ID pre-exposure rabies prophylaxis is given, routine serologic testing should be done 2-3 weeks after immunization. Any individual with a postimmunization titer of lower than 1:16 (approximately 0.16 IU/ml) should receive an additional dose of vaccine and have serum retested 2-3 weeks later. Persons whose only experience with rabies vaccine has been ID pre-exposure prophylaxis and whose antibody response is unknown should, if immunized within the past 12 months, have serum tested for rabies antibody; if immunized more than 12 months previously, such persons should receive a single booster

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dose of vaccine and have serum retested 2-3 weeks later. Serologic testing does not appear to be necessary for persons receiving IM rabies pre-exposure prophylaxis.

For postexposure prophylaxis, persons (1) who have had three 1.0 ml IM doses of HDCV or (2) who have received ID vaccine and who have a documented rabies titer of 1:16 or higher should continue to receive two 1.0 ml IM doses of HDCV—one dose each on days 0 and 3, as currently recommended. Any person who has received ID vaccine and who has not had a documented rabies antibody titer of 1:16 or higher should be treated with a single, 20 IU/kg dose of human rabies immune globulin (HRIG) and five 1 ml IM doses of HDCV—one each on days 0, 3, 7, 14, and 28.

It should be reemphasized that all persons who have received adequate pre-exposure prophylaxis with HDCV should, following a rabies exposure, receive two 1.0 ml IM postexposure booster doses of vaccine to ensure protection.

References

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Behavioral Risk-Factor Prevalence Surveys — United States, Third Quarter 1982

During the third quarter of 1982, seven states (Arizona, Iowa, Michigan, New Hampshire, New Mexico, Tennessee, and Texas) conducted prevalence surveys of major behavioral risk factors among their adult populations (Table 2). These surveys were conducted by random-digit-dialing telephone methods and used a standard questionnaire. The data have been adjusted for the age, race, and sex of each state's population and for the respondent's probability of selection from the household. The data presented are consistent with results from similar state-based behavioral risk-factor surveys conducted during the first and second quarters of 1982 (*1,2*).

As the number of states reporting this information in a comparable fashion increases, some apparent regional distinctions are emerging. From the data presented here and previously (*1,2*), the following regional distinctions appear: (1) uncontrolled hypertension is more prevalent in the Southeastern states surveyed; (2) alcohol misuse, in all its forms reported here, is at consistently lower levels in the Southeastern states, with the exception of Florida; and (3) obesity is more prevalent in the Eastern states than in the Western states surveyed, even after age adjustment. Other risk factors, such as smoking, seatbelt use, and sedentary lifestyle, do not have such clear geographic distinctions.

The new state data are consistent with some of the demographic distinctions reported earlier. Some of these distinctions are: (1) alcohol misuse, in all its forms reported here, is

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more prevalent among men than among women; (2) risk of hypertension increases with age; (3) more men than women smoke cigarettes; and (4) obesity prevalence increases up to middle age and declines thereafter.

Various potential confounding factors, such as seasonality and the use of different interviewers, impose some constraints when comparing one state to another. However, the differences in survey results between states are often large enough to conclude that these differences can be used to identify priorities for public health programs and that state-specific information is needed to monitor the prevalence of these health indices over time.

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1. CDC. Behavioral risk factor prevalence surveys—United States, first quarter 1982. MMWR 1983; 32:141-3.
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TABLE I. Summary—cases specified notifiable diseases, United States

Disease	46th Week Ending			Cumulative, 46th Week Ending		
	November 19, 1983	November 20, 1982	Median 1978-1982	November 19, 1983	November 20, 1982	Median 1978-1982
Aseptic meningitis	219	278	191	10,708	8,550	7,525
Encephalitis: Primary (arthropod-borne & unspec.)	35	37	25	1,546	1,405	1,074
Post-infectious	-	2	3	66	72	194
Gonorrhea: Civilian	16,891	20,196	19,762	796,286	849,153	890,063
Military	383	505	388	21,474	23,482	24,107
Hepatitis: Type A	388	540	603	19,331	20,274	25,085
Type B	399	523	421	20,134	19,225	16,019
Non A, Non B	75	65	N	2,966	2,146	N
Unspecified	120	195	195	6,918	7,660	9,173
Legionellosis	14	10	N	634	535	N
Leprosy	5	3	2	213	184	184
Malaria	16	20	20	711	951	951
Measles: Total*	4	34	35	1,377	1,545	12,765
Indigenous	3	N	N	1,108	N	N
Imported	1	N	N	269	N	N
Meningococcal infections: Total	48	62	55	2,441	2,694	2,380
Civilian	48	62	53	2,426	2,680	2,362
Military	-	-	-	15	14	18
Mumps	47	80	97	2,945	4,774	7,823
Pertussis	29	31	29	2,021	1,557	1,515
Rubella (German measles)	15	17	27	905	2,167	3,511
Syphilis (Primary & Secondary): Civilian	575	725	581	28,656	29,207	24,123
Military	5	4	4	347	391	280
Toxic-shock syndrome	7	N	N	341	N	N
Tuberculosis	406	525	541	20,631	22,502	24,068
Tularemia	10	3	3	284	236	199
Typhoid fever	5	5	7	399	350	468
Typhus fever, tick-borne (RMSF)	6	5	5	1,139	941	1,019
Rabies, animal	56	104	78	5,326	5,618	5,618

TABLE II. Notifiable diseases of low frequency, United States

	Cum. 1983		Cum. 1983
Anthrax	-	Plague	36
Botulism: Foodborne (Calif. 1)	18	Poliomyelitis: Total	5
Infant (Calif. 4)	57	Paralytic	5
Other (Md. 1)	3	Psittacosis (Calif. 2)	105
Brucellosis (Va. 1, Tex. 3)	163	Rabies, human	2
Cholera	1	Tetanus (Calif. 1)	66
Congenital rubella syndrome	20	Trichinosis	31
Diphtheria (Okla. 1)	4	Typhus fever, flea-borne (endemic, murine)	43
Leptospirosis	42		

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

TABLE III. Cases of specified notifiable diseases, United States, weeks ending November 19, 1983 and November 20, 1982 (46th week)

Reporting Area	Aseptic Menin-gitis	Encephalitis		Gonorrhea (Civilian)		Hepatitis (Viral), by type				Legionel-losis	Leprosy	Malaria
		Primary	Post-in-fectious			A	B	NA,NB	Unspeci-fied			
	1983	Cum. 1983	Cum. 1983	Cum. 1983	Cum. 1982	1983	1983	1983	1983	1983	Cum. 1983	Cum. 1983
UNITED STATES	219	1,546	66	796,286	849,153	388	399	75	120	14	213	711
NEW ENGLAND	12	60	-	20,868	20,492	12	29	3	18	1	3	37
Maine	1	-	-	1,007	1,050	-	-	-	1	-	-	1
N.H.	-	5	-	643	692	1	3	1	-	-	2	2
Vt.	1	1	-	393	384	-	4	1	-	-	-	1
Mass.	4	30	-	8,876	9,196	7	7	-	17	1	-	17
R.I.	3	1	-	1,136	1,385	2	4	-	-	-	-	4
Conn.	3	23	-	8,813	7,785	2	11	1	-	-	1	12
MID ATLANTIC	25	116	6	101,305	107,389	46	58	5	4	3	25	98
Upstate N.Y.	7	31	-	16,453	17,575	-	11	-	-	-	-	29
N.Y. City	4	10	-	40,305	44,300	29	4	-	4	3	24	26
N.J.	13	17	1	18,954	19,388	11	21	3	-	-	-	25
Pa.	1	58	5	25,593	26,126	6	22	2	-	-	1	18
E.N. CENTRAL	35	539	20	113,376	121,321	19	43	7	12	4	6	52
Ohio	8	183	9	30,757	32,625	7	14	1	1	3	1	9
Ind.	15	180	1	11,006	14,227	4	9	3	7	-	-	7
Ill.	-	17	7	30,479	34,673	3	9	2	1	1	2	16
Mich.	12	108	-	30,844	29,105	5	11	1	3	-	3	15
Wis.	-	51	3	10,290	10,691	-	-	-	-	-	-	5
W.N. CENTRAL	9	155	10	36,933	40,073	19	14	-	2	-	6	28
Minn.	4	58	1	5,235	5,806	3	4	-	1	-	4	8
Iowa	1	57	-	4,125	4,278	2	1	-	-	-	-	4
Mo.	3	29	-	17,658	18,945	-	6	-	-	-	1	5
N. Dak.	-	4	-	402	521	-	-	-	-	-	-	2
S. Dak.	-	1	2	932	1,042	-	-	-	-	-	-	1
Nebr.	-	4	-	2,490	2,377	-	2	-	1	-	-	2
Kans.	1	2	7	6,091	7,104	14	1	-	-	-	1	6
S. ATLANTIC	58	217	15	207,201	223,257	27	74	14	14	1	13	118
Del.	-	1	-	3,767	3,687	4	1	-	-	-	-	1
Md.	5	23	-	26,637	28,052	2	27	4	3	-	1	23
D.C.	1	-	-	14,203	13,551	-	1	-	-	-	-	16
Va.	23	53	2	18,948	17,846	4	6	2	3	1	1	29
W. Va.	1	45	-	2,298	2,484	-	2	-	-	-	-	3
N.C.	11	46	-	32,078	35,426	1	8	-	1	-	2	3
S.C.	5	5	-	19,189	21,623	-	3	-	-	-	-	6
Ga.	-	7	1	42,509	43,864	-	-	-	-	-	1	9
Fla.	12	37	12	47,572	56,724	16	26	8	7	-	8	28
E.S. CENTRAL	19	66	1	66,895	73,201	12	28	3	2	2	-	14
Ky.	4	16	-	7,954	9,962	5	4	-	-	2	-	2
Tenn.	4	18	-	27,314	28,956	3	13	2	2	-	-	-
Ala.	11	24	-	20,753	21,181	1	4	1	-	-	-	7
Miss.	-	8	1	10,874	13,102	3	7	-	-	-	-	5
W.S. CENTRAL	8	154	2	112,767	116,417	83	26	8	36	1	33	62
Ark.	-	9	-	8,819	9,585	4	1	-	2	1	-	1
La.	-	19	-	22,211	20,880	8	8	8	-	-	1	8
Okla.	2	30	1	12,931	12,795	26	6	-	8	-	-	10
Tex.	6	96	1	68,806	73,157	45	11	-	26	-	32	43
MOUNTAIN	8	74	4	25,535	28,698	29	24	9	11	1	12	25
Mont.	-	2	-	1,057	1,196	-	-	-	-	-	-	-
Idaho	-	1	-	1,132	1,341	2	-	-	-	-	-	2
Wyo.	-	2	-	675	860	-	1	1	1	-	-	1
Colo.	6	45	-	7,133	7,661	4	8	3	2	-	2	9
N. Mex.	1	2	-	3,139	3,954	9	1	1	-	-	-	5
Ariz.	-	11	4	7,296	7,512	8	5	3	6	1	9	5
Utah	1	11	-	1,220	1,418	3	-	1	1	-	1	3
Nev.	-	-	-	3,883	4,756	3	9	-	1	-	-	-
PACIFIC	45	165	8	111,406	118,305	141	103	26	21	1	115	277
Wash.	3	13	1	8,582	10,193	2	2	2	-	-	15	14
Oreg.	-	-	4	5,970	6,976	24	6	1	2	-	1	11
Calif.	35	143	3	91,858	95,791	115	91	23	19	1	65	250
Alaska	-	-	-	2,916	3,037	-	-	-	-	-	-	-
Hawaii	7	9	-	2,080	2,308	-	4	-	-	-	34	2
Guam	U	-	-	103	127	U	U	U	U	U	-	2
P.R.	-	1	1	2,365	2,367	1	4	-	5	-	-	2
V.I.	U	-	-	249	246	U	U	U	U	U	-	-
Pac. Trust Terr.	U	-	-	-	388	U	U	U	U	U	-	-

U: Unavailable

TABLE III. (Cont.'d). Cases of specified notifiable diseases, United States, weeks ending November 19, 1983 and November 20, 1982 (46th week)

Reporting Area	Measles (Rubeola)					Menin-gococcal Infections	Mumps			Pertussis			Rubella		
	Indigenous		Imported*		Total										
	1983	Cum. 1983	1983	Cum. 1983	Cum. 1982	Cum. 1983	1983	Cum. 1983	Cum. 1982	1983	Cum. 1983	Cum. 1982	1983	Cum. 1983	Cum. 1982
UNITED STATES	3	1,108	1	269	1,545	2,441	47	2,945	4,774	29	2,021	1,557	15	905	2,167
NEW ENGLAND	-	5	-	15	14	130	5	135	177	1	68	50	2	17	19
Maine	-	-	-	-	-	10	1	22	42	-	5	4	-	-	-
N.H.	-	-	-	3	3	6	-	24	18	1	10	4	-	4	11
Vt.	-	-	-	-	2	10	-	15	7	-	8	2	-	5	-
Mass.	-	4	-	4	3	41	2	40	72	-	35	24	-	6	2
R.I.	-	-	-	-	-	9	-	16	16	-	5	11	-	-	1
Conn.	-	1	-	8	6	54	2	18	22	-	5	5	2	2	5
MID ATLANTIC	2	76	-	42	165	409	3	252	311	3	352	423	-	145	103
Upstate N.Y.	2	7	-	11	112	127	1	97	84	3	117	247	-	30	49
N.Y. City	-	43	-	27	43	74	-	35	47	-	53	39	-	86	35
N.J.	-	26	-	1	6	72	1	46	51	-	19	22	-	3	18
Pa.	-	-	-	3	4	136	1	74	129	-	163	115	-	26	1
E.N. CENTRAL	1	649	-	58	77	439	6	1,308	2,445	1	417	330	2	123	198
Ohio	-	72	-	15	1	132	1	555	1,630	-	144	90	-	2	2
Ind.	-	402	-	4	2	54	-	46	42	-	55	22	-	25	29
Ill.	1	173	-	33	24	130	2	151	290	1	116	154	2	53	74
Mich.	-	2	-	5	50	77	3	476	361	-	39	26	-	17	49
Wis.	-	-	-	1	-	46	-	80	122	-	63	38	-	26	44
W.N. CENTRAL	-	1	-	7	49	147	1	160	608	-	122	80	1	42	60
Minn.	-	1	-	-	-	27	-	28	453	-	47	34	-	9	6
Iowa	-	-	-	-	-	17	-	41	45	-	6	9	-	-	-
Mo.	-	-	-	1	2	68	-	21	12	-	15	16	-	-	38
N. Dak.	-	-	-	-	-	4	-	1	-	-	2	-	-	-	-
S. Dak.	-	-	-	-	-	4	-	-	1	-	8	6	-	-	1
Nebr.	-	-	-	-	3	5	-	4	1	-	2	1	-	-	-
Kans.	-	-	-	6	44	22	1	65	96	-	42	14	1	33	15
S. ATLANTIC	-	173	-	31	156	503	1	214	284	1	228	259	-	97	93
Del.	-	-	-	-	-	11	-	8	12	-	5	6	-	-	1
Md.	-	6	-	4	4	50	-	43	30	-	17	69	-	3	34
D.C.	-	-	-	-	1	5	-	-	-	-	-	1	-	-	-
Va.	-	10	-	13	14	76	1	35	38	-	50	28	-	3	12
W. Va.	-	-	-	-	3	2	-	53	98	-	9	10	-	-	3
N.C.	-	-	-	1	1	101	-	13	20	-	28	45	-	10	2
S.C.	-	-	-	4	-	50	-	14	17	-	14	16	-	1	1
Ga.	-	8	-	-	-	77	-	48	23	-	61	40	-	13	17
Fla.	-	149	-	9	133	131	N	-	46	1	44	44	-	67	23
E.S. CENTRAL	-	1	-	5	9	143	-	56	62	-	34	50	-	19	47
Ky.	-	-	-	1	1	29	-	21	20	-	14	6	-	18	29
Tenn.	-	-	-	-	6	49	-	29	24	-	9	26	-	-	2
Ala.	-	1	-	4	2	43	-	2	9	-	5	5	-	1	-
Miss.	-	-	-	-	-	22	-	4	9	-	6	13	-	-	16
W.S. CENTRAL	-	40	-	35	158	256	6	250	217	10	445	101	4	128	119
Ark.	-	5	-	8	-	21	-	2	7	1	23	6	-	-	1
La.	-	1	-	25	2	48	-	45	6	-	12	21	-	13	1
Okla.	-	1	-	-	30	33	N	-	-	9	319	6	-	-	3
Tex.	-	33	-	2	126	154	6	203	204	-	91	68	4	115	114
MOUNTAIN	-	1	1	18	29	109	7	168	107	5	220	67	4	37	84
Mont.	-	-	1 §	4	-	26	1	7	5	-	1	1	-	6	5
Idaho	-	1	-	10	-	8	-	8	4	-	15	12	-	8	7
Wyo.	-	-	-	-	1	2	-	3	2	-	6	3	2	6	7
Colo.	-	-	-	3	8	34	3	50	18	-	133	19	-	1	6
N. Mex.	-	-	-	-	-	7	N	-	-	-	14	7	-	-	6
Ariz.	-	-	-	1	17	19	3	87	50	5	29	21	2	8	16
Utah	-	-	-	-	3	12	-	8	20	-	22	4	-	7	25
Nev.	-	-	-	-	-	1	-	5	8	-	-	-	-	1	12
PACIFIC	-	162	-	58	888	305	18	402	563	8	135	197	2	297	1,444
Wash.	-	1	-	27	42	44	2	45	79	-	16	31	-	12	40
Oreg.	-	8	-	2	17	53	N	-	-	-	9	27	-	14	6
Calif.	-	152	-	27	823	198	14	321	453	8	103	111	2	269	1,385
Alaska	-	-	-	2	1	3	1	16	11	-	4	-	-	1	5
Hawaii	-	1	-	-	5	7	1	20	20	-	3	28	-	1	8
Guam	U	1	U	1	6	1	U	1	5	U	-	-	U	-	2
P.R.	-	94	-	-	176	11	2	126	91	-	13	21	-	7	12
V.I.	U	-	U	5	-	-	U	-	4	U	-	-	U	2	2
Pac. Trust Terr.	U	-	U	-	1	-	U	-	6	U	-	-	U	-	-

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

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

TABLE III. (Cont.'d). Cases of specified notifiable diseases, United States, weeks ending November 19, 1983 and November 20, 1982 (46th week)

Reporting Area	Syphilis (Civilian) (Primary & Secondary)		Toxic-shock Syndrome	Tuberculosis		Tula-remia	Typhoid Fever	Typhus Fever (Tick-borne) (RMSF)	Rabies, Animal
	Cum. 1983	Cum. 1982	1983	1983	Cum. 1983	Cum. 1983	Cum. 1983	Cum. 1983	Cum. 1983
UNITED STATES	28,656	29,207	7	406	20,631	284	399	1,139	5,326
NEW ENGLAND	613	525	-	12	628	4	17	6	37
Maine	19	7	-	-	32	-	-	-	9
N.H.	21	5	-	-	31	-	-	1	5
Vt.	3	4	-	-	12	-	-	-	2
Mass.	393	358	-	9	336	3	13	2	14
R.I.	19	22	-	2	52	1	1	-	1
Conn.	158	129	-	1	165	-	3	3	6
MID ATLANTIC	3,658	3,938	-	71	3,710	1	69	27	235
Upstate N.Y.	270	412	-	7	626	1	10	7	72
N.Y. City	2,173	2,334	-	44	1,459	-	25	2	-
N.J.	731	572	-	16	773	-	28	8	24
Pa.	484	620	-	4	852	-	6	10	139
E.N. CENTRAL	1,473	1,714	2	62	2,806	4	61	81	450
Ohio	405	291	1	6	439	-	19	41	59
Ind.	107	182	-	16	323	-	4	14	30
Ill.	660	894	-	24	1,196	1	27	17	233
Mich.	221	257	1	14	701	1	10	7	19
Wis.	80	90	-	2	147	2	1	2	109
W.N. CENTRAL	345	498	-	5	620	84	11	61	740
Minn.	131	124	-	2	138	-	2	-	127
Iowa	21	30	-	-	53	-	-	-	181
Mo.	126	270	-	-	301	57	8	32	94
N. Dak.	2	7	-	-	6	-	-	1	80
S. Dak.	11	2	-	1	36	9	-	5	119
Nebr.	15	14	-	-	21	8	-	3	63
Kans.	39	51	-	2	65	10	1	20	76
S. ATLANTIC	7,857	7,999	1	96	4,166	13	56	474	1,926
Del.	31	24	-	1	56	-	-	4	5
Md.	528	439	-	13	336	5	8	40	708
D.C.	337	432	-	4	168	-	3	-	138
Va.	522	549	1	14	444	1	16	62	588
W. Va.	24	29	-	1	124	-	2	12	112
N.C.	772	650	-	33	644	6	4	205	26
S.C.	496	501	-	6	387	-	2	80	36
Ga.	1,390	1,665	-	-	729	1	2	65	194
Fla.	3,757	3,710	-	24	1,278	-	19	6	119
E.S. CENTRAL	1,936	2,029	-	44	1,860	18	10	106	350
Ky.	161	123	-	9	482	1	3	22	82
Tenn.	524	572	-	19	558	12	2	49	185
Ala.	756	764	-	9	468	-	2	24	83
Miss.	495	570	-	7	352	5	3	11	-
W.S. CENTRAL	7,417	7,654	-	47	2,475	115	56	369	959
Ark.	172	192	-	10	307	69	4	45	154
La.	1,546	1,670	-	-	341	6	4	1	34
Okla.	184	166	-	-	226	31	2	228	97
Tex.	5,515	5,626	-	37	1,601	9	46	95	674
MOUNTAIN	600	739	-	6	548	38	18	13	228
Mont.	7	5	-	-	42	5	1	6	66
Idaho	7	25	-	-	27	2	-	2	16
Wyo.	12	16	-	-	11	6	-	2	11
Colo.	144	198	-	-	77	14	1	-	32
N. Mex.	158	171	-	-	99	3	1	-	14
Ariz.	156	204	-	6	228	1	13	1	36
Utah	21	21	-	-	33	6	1	1	10
Nev.	95	99	-	-	31	1	1	1	43
PACIFIC	4,757	4,111	4	63	3,818	7	101	2	401
Wash.	163	153	-	1	216	2	4	-	2
Oreg.	132	101	-	2	165	3	3	-	1
Calif.	4,380	3,744	4	53	3,159	2	91	2	383
Alaska	12	15	-	-	65	-	-	-	15
Hawaii	70	98	-	7	213	-	3	-	-
Guam	-	1	U	U	5	-	-	-	-
P.R.	820	744	-	9	422	-	-	-	47
V.I.	17	28	U	U	2	-	-	-	-
Pac. Trust Terr.	-	-	U	U	-	-	-	-	-

U: Unavailable

TABLE IV. Deaths in 121 U.S. cities,* week ending November 19, 1983 (46th week)

Reporting Area	All Causes, By Age (Years)						P&I** Total
	All Ages	≥65	45-64	25-44	1-24	<1	
NEW ENGLAND	791	549	161	40	16	25	53
Boston, Mass.	224	135	53	18	9	9	25
Bridgeport, Conn.	45	36	3	-	1	5	2
Cambridge, Mass.	37	30	5	1	-	1	2
Fall River, Mass.	46	32	10	4	-	-	2
Hartford, Conn.	66	46	16	2	2	-	1
Lowell, Mass.	40	23	15	1	-	1	1
Lynn, Mass.	17	12	5	-	-	-	1
New Bedford, Mass.	33	25	7	-	1	-	1
New Haven, Conn.	65	58	3	4	-	-	3
Providence, R.I.	73	47	15	4	1	6	8
Somerville, Mass.	7	6	1	-	-	-	1
Springfield, Mass.	33	20	8	2	1	2	1
Waterbury, Conn.	45	38	6	-	1	-	3
Worcester, Mass.	60	41	14	4	-	1	2
MID. ATLANTIC	2,790	1,865	631	164	58	72	123
Albany, N.Y.	66	43	18	4	-	1	1
Allentown, Pa.	19	15	4	-	-	-	-
Buffalo, N.Y.	140	85	43	6	3	3	8
Camden, N.J.	38	28	7	-	-	3	2
Elizabeth, N.J.	26	21	4	-	1	-	-
Erie, Pa.†	50	40	8	2	-	-	8
Jersey City, N.J.	61	39	17	4	1	-	3
N.Y. City, N.Y.	1,476	969	321	110	35	41	52
Newark, N.J.	65	35	19	4	-	7	4
Paterson, N.J.	30	26	2	2	-	-	3
Philadelphia, Pa.†	305	195	76	14	10	10	20
Pittsburgh, Pa.†	88	59	24	4	-	1	4
Reading, Pa.	39	35	2	2	-	-	2
Rochester, N.Y.	146	108	26	5	4	3	8
Schenectady, N.Y.	17	13	2	-	1	1	-
Scranton, Pa.†	38	26	10	1	1	-	-
Syracuse, N.Y.	78	58	14	4	1	1	-
Trenton, N.J.	39	25	13	1	-	-	4
Utica, N.Y.	29	19	10	-	-	-	1
Yonkers, N.Y.	40	26	11	1	1	1	3
E.N. CENTRAL	2,461	1,570	612	136	70	73	84
Akron, Ohio	68	44	15	2	1	6	-
Canton, Ohio	50	33	15	2	-	-	1
Chicago, Ill.	559	333	149	45	15	17	11
Cincinnati, Ohio	158	116	29	6	3	4	16
Cleveland, Ohio	189	117	52	11	4	5	5
Columbus, Ohio	133	81	30	10	6	6	3
Dayton, Ohio	116	62	40	4	6	4	4
Detroit, Mich.	292	178	78	22	10	4	9
Evansville, Ind.	37	22	12	2	1	-	-
Fort Wayne, Ind.	65	53	7	2	3	-	4
Gary, Ind.	19	12	6	-	-	1	-
Grand Rapids, Mich.	55	38	9	2	4	2	1
Indianapolis, Ind.	174	119	43	5	4	3	1
Madison, Wis.	32	21	4	2	2	3	2
Milwaukee, Wis.	134	95	24	4	3	8	3
Peoria, Ill.	67	49	14	4	-	-	3
Rockford, Ill.	53	38	11	1	-	3	5
South Bend, Ind.	65	42	20	1	1	1	5
Toledo, Ohio	128	78	32	8	5	5	7
Youngstown, Ohio	67	39	22	3	2	1	4
W.N. CENTRAL	805	529	176	42	22	33	27
Des Moines, Iowa	95	63	24	2	4	2	3
Duluth, Minn.	22	17	2	2	-	1	2
Kansas City, Kans.	42	19	14	7	1	1	2
Kansas City, Mo.	140	96	29	5	5	2	7
Lincoln, Nebr.	44	27	10	5	1	1	2
Minneapolis, Minn.	97	70	15	5	1	6	3
Omaha, Nebr.	100	64	27	2	3	4	2
St. Louis, Mo.	128	83	28	8	3	6	6
St. Paul, Minn.	79	57	10	5	1	6	-
Wichita, Kans.	58	33	17	1	3	4	-
S. ATLANTIC	1,220	773	283	84	32	48	46
Atlanta, Ga.	143	88	34	12	2	7	4
Baltimore, Md.	251	139	75	17	10	10	4
Charlotte, N.C.	72	50	15	5	1	1	5
Jacksonville, Fla.	120	82	23	11	1	3	7
Miami, Fla.	43	27	10	5	1	-	2
Norfolk, Va.	63	34	21	4	4	-	3
Richmond, Va.	85	53	18	6	3	5	10
Savannah, Ga.	24	15	7	1	1	-	1
St. Petersburg, Fla.	140	123	12	-	2	3	4
Tampa, Fla.	57	39	7	6	2	3	3
Washington, D.C.	192	106	52	17	3	14	2
Wilmington, Del.	30	17	9	-	2	2	1
E.S. CENTRAL	687	425	171	34	13	44	48
Birmingham, Ala.	99	66	23	7	-	3	2
Chattanooga, Tenn.	55	28	20	6	-	1	6
Knoxville, Tenn.	83	62	13	3	2	3	8
Louisville, Ky.	126	80	27	7	4	8	9
Memphis, Tenn.	133	79	28	3	-	23	13
Mobile, Ala.	46	27	14	2	3	-	3
Montgomery, Ala.	49	23	16	3	2	5	1
Nashville, Tenn.	96	60	30	3	2	1	6
W.S. CENTRAL	1,201	698	290	91	58	63	45
Austin, Tex.	20	11	1	3	1	4	1
Baton Rouge, La.	41	28	5	3	1	4	4
Corpus Christi, Tex.	38	18	12	6	1	1	3
Dallas, Tex.	192	102	48	17	11	14	-
El Paso, Tex.	65	43	10	7	1	4	8
Fort Worth, Tex.	95	59	17	5	5	8	6
Houston, Tex.	198	97	62	17	12	10	3
Little Rock, Ark.	88	52	27	6	2	1	7
New Orleans, La.	147	95	36	8	6	2	1
San Antonio, Tex.	190	107	48	13	14	8	7
Shreveport, La.	54	39	9	2	1	3	-
Tulsa, Okla.	73	47	15	4	3	4	5
MOUNTAIN	709	476	141	49	22	21	42
Albuquerque, N.Mex.	86	58	16	8	4	-	4
Colo. Springs, Colo.	41	27	8	2	3	1	7
Denver, Colo.	128	87	28	6	3	4	3
Las Vegas, Nev.	86	54	24	3	2	3	8
Ogden, Utah	24	19	2	2	-	1	3
Phoenix, Ariz.	164	102	33	19	4	6	6
Pueblo, Colo.	18	14	3	-	-	1	-
Salt Lake City, Utah	50	39	7	1	1	2	-
Tucson, Ariz.	112	76	20	8	5	3	11
PACIFIC	1,875	1,258	378	119	57	61	121
Berkeley, Calif.	19	16	3	-	-	-	1
Fresno, Calif.	85	53	18	6	6	2	5
Glendale, Calif.	34	26	6	-	1	1	-
Honolulu, Hawaii	70	43	15	5	4	3	7
Long Beach, Calif.	77	56	13	5	1	2	9
Los Angeles, Calif.	588	405	109	35	24	15	29
Oakland, Calif.	72	53	9	7	1	2	10
Pasadena, Calif.	41	28	6	4	1	2	1
Portland, Oreg.	105	68	21	6	3	6	5
Sacramento, Calif.	70	43	12	8	2	5	4
San Diego, Calif.	104	58	29	11	3	2	15
San Francisco, Calif.	162	104	36	13	2	7	7
San Jose, Calif.	169	110	48	5	2	4	16
Seattle, Wash.	142	99	30	8	2	3	6
Spokane, Wash.	64	50	7	4	1	2	5
Tacoma, Wash.	73	46	16	2	4	5	1
TOTAL	12,539††	8,143	2,843	759	348	440	589

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

** Pneumonia and influenza

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

†† Total includes unknown ages.

Risk-Factor Surveys — Continued

TABLE 2. Behavioral risk-factor levels* in seven states, by age group and sex—third quarter 1982

Risk factor, by state	Age group (years), by sex								Total respondents	
	18-34		35-54		≥55		All ages			
	M	F	M	F	M	F	M	F	Number	Rate
1. Obesity†										
Arizona	12.3	6.9	22.2	18.7	25.0	28.0	18.6	16.8	1535	17.7
Iowa	11.3	9.2	27.2	27.9	35.8	30.2	22.5	21.3	675	21.9
Michigan	15.6	16.3	28.2	32.7	26.9	32.4	22.3	25.8	1448	24.2
New Hampshire	14.8	11.7	37.5	20.0	31.7	31.2	26.2	20.1	482	23.0
New Mexico	11.1	11.2	28.5	17.2	27.3	23.0	20.2	16.1	960	18.1
Tennessee	17.8	13.2	32.1	22.4	17.6	31.3	22.2	21.6	797	21.9
Texas	15.8	11.0	29.9	25.5	21.7	23.0	21.5	18.6	1840	20.0
2. Sedentary lifestyle§										
Arizona	4.6	6.4	14.0	9.3	14.4	10.5	10.0	8.5	1535	9.2
Iowa	2.0	3.9	6.4	4.7	4.9	12.4	4.2	6.2	675	5.3
Michigan	5.4	7.1	18.5	10.4	17.7	16.4	12.5	10.8	1448	11.6
New Hampshire	8.8	6.1	13.4	7.2	9.3	15.1	10.4	9.2	482	9.7
New Mexico	6.3	10.0	26.1	10.9	21.0	17.0	15.8	12.1	960	13.9
Tennessee	4.3	13.2	20.7	14.6	14.1	13.1	12.0	13.6	797	12.8
Texas	4.0	7.8	17.4	13.2	15.2	16.9	10.6	11.9	1840	11.3
3. Uncontrolled hypertension¶										
Arizona	2.0	1.3	3.6	2.0	5.5	7.4	3.4	3.4	1535	3.4
Iowa	1.8	0.3	3.2	3.1	1.2	2.4	2.1	1.9	675	2.0
Michigan	1.5	2.0	7.3	4.1	8.1	9.4	5.0	4.8	1448	4.9
New Hampshire	1.6	0.4	6.8	4.2	6.2	6.6	4.4	3.4	482	3.9
New Mexico	0.3	1.5	1.8	2.4	5.7	4.6	2.1	2.6	960	2.3
Tennessee	2.8	1.9	4.4	2.9	3.5	9.9	3.5	4.7	797	4.1
Texas	1.1	1.1	2.2	2.8	3.2	5.0	1.9	2.7	1840	2.3
4. Cigarette smoking**										
Arizona	28.3	33.3	36.6	33.5	36.1	26.7	32.8	31.3	1535	32.0
Iowa	39.1	27.4	31.2	30.9	27.3	16.1	33.6	26.0	675	29.6
Michigan	39.6	29.7	40.1	33.2	19.5	19.6	34.7	27.8	1448	31.1
New Hampshire	29.8	41.3	30.7	29.5	19.6	17.7	27.5	30.6	482	29.1
New Mexico	31.3	23.8	38.1	37.1	23.7	20.1	31.5	26.8	960	29.1
Tennessee	42.4	30.2	45.7	30.4	27.2	17.1	39.5	26.2	797	32.4
Texas	33.4	28.3	41.1	30.6	22.8	20.4	33.3	26.8	1840	29.9
5. Acute heavy drinking††										
Arizona	44.6	20.4	28.4	8.2	11.3	4.0	30.9	11.8	1535	21.1
Iowa	56.7	24.7	20.3	22.0	24.4	1.4	36.7	18.0	675	26.9
Michigan	60.5	27.3	38.9	16.4	26.8	5.1	45.4	17.6	1448	30.9
New Hampshire	54.2	28.3	27.2	3.2	9.6	7.9	34.4	14.8	482	24.2
New Mexico	42.7	15.6	32.2	12.1	14.1	1.3	32.8	10.7	960	21.4
Tennessee	34.3	7.1	21.5	2.0	6.1	0.3	23.0	3.5	797	12.7
Texas	47.9	20.9	33.6	9.0	11.7	3.7	35.1	12.6	1840	23.5
6. Chronic heavy drinking§§										
Arizona	15.8	2.8	16.0	3.2	19.8	5.9	16.9	3.8	1535	10.2
Iowa	16.5	7.9	6.8	5.2	15.1	0.0	12.9	5.0	675	8.7
Michigan	12.3	3.1	10.2	2.4	9.8	3.4	11.0	3.0	1448	6.8
New Hampshire	31.7	3.2	17.3	9.1	16.0	10.3	23.2	7.1	482	14.8
New Mexico	7.9	1.3	17.1	6.7	11.8	2.6	11.6	3.2	960	7.3
Tennessee	9.6	1.2	6.3	1.3	7.4	0.3	8.0	1.0	797	4.3
Texas	16.5	4.4	21.6	5.0	14.5	4.4	17.6	4.5	1840	10.9

Risk-Factor Surveys — Continued

TABLE 2. Behavioral risk-factor levels* in seven states, by age group and sex—third quarter 1982 (Continued)

Risk factor, by state	Age group (years), by sex								Total respondents	
	18-34		35-54		≥55		All ages			
	M	F	M	F	M	F	M	F	Number	Rate
7. Drinking & driving¶¶										
Arizona	11.6	4.8	5.3	1.2	1.1	0.7	6.9	2.5	1535	4.7
Iowa	22.8	5.9	3.7	6.0	9.6	0.0	13.2	4.5	675	8.6
Michigan	23.9	4.7	7.9	1.5	3.4	0.0	13.8	2.4	1448	7.8
New Hampshire	19.7	10.1	4.3	0.0	1.7	0.0	10.3	4.1	482	7.1
New Mexico	10.2	2.8	3.5	1.5	0.3	0.0	5.8	1.7	960	3.7
Tennessee	6.4	1.5	5.8	0.0	2.2	0.0	5.1	0.6	797	2.7
Texas	17.8	5.3	7.3	1.3	0.0	0.4	10.5	2.8	1840	6.5
8. Lack of seatbelt use***										
Arizona	54.7	54.4	58.9	56.7	52.2	40.7	55.2	50.8	1535	53.0
Iowa	79.3	66.6	73.6	71.8	59.3	53.4	72.6	65.3	675	68.8
Michigan	59.2	55.8	48.7	56.6	53.7	51.4	54.6	54.7	1448	54.7
New Hampshire	76.9	76.0	68.1	62.8	51.1	65.2	67.6	68.9	482	68.3
New Mexico	45.6	54.2	58.8	51.7	56.8	50.1	52.3	52.4	960	52.3
Tennessee	63.0	60.2	68.3	56.0	54.1	52.0	62.3	56.4	797	59.2
Texas	66.5	61.8	64.2	55.2	62.5	58.2	64.9	58.9	1840	61.8

*Percentages.

†120% of ideal weight (ideal weight defined as the mid-value of the medium-frame person on the 1959 Metropolitan Life Insurance Company height/weight tables).

§Combined low level of activity from exercise, work, and recreation.

¶Person who states having been told by medical professional he/she was hypertensive and who still has high blood pressure.

**Current cigarette smoker.

††Person who has drunk 5 or more drinks on an occasion, one or more times in past month.

§§Person whose average total alcoholic beverage intake exceeds 56 drinks per month.

¶¶Person who has driven after having too much to drink one or more times in past month.

***Person who states seldom or never using a seatbelt while riding in or driving a car.

International Notes

Acquired Immunodeficiency Syndrome (AIDS) — Europe

The following table (Table 3) summarizes the cases of AIDS reported by member countries of the European Region of the World Health Organization (WHO) as of October 1983 (*1,2*).

Reported by WHO Weekly Epidemiological Record, *1983;58:351.*

Editorial Note: As of November 21, 1983, 2,803 AIDS cases in the United States have been reported to CDC. The case definition used in other countries may differ slightly from that used by CDC.

References

1. WHO. Acquired immune deficiency syndrome (AIDS). Weekly Epidemiological Record 1983;58:227-8.
2. Based on data provided by the participants at the first meeting on AIDS organized by the WHO Regional Office for Europe (Aarhus, Denmark, October 19-20, 1983).

AIDS — Continued

TABLE 3. AIDS cases reported by member countries of the European Region of WHO— as of October 20, 1983*

Country	Year of diagnosis						
	Before 1979	1979	1980	1981	1982	1983	Total
Austria						7	7
Belgium			2	4	8	24	38
Czechoslovakia					1	1	2
Denmark			1	2	4	6	13
Finland						2	2
France	6	1	5	5	30	47	94
German Democratic Republic							0
Fed. Republic of Germany	1	1			7	33	42
Greece							0
Ireland						2	2
Italy					2		2
Luxembourg							0
Netherlands					3	9	12
Norway						2	2
Poland							0
Spain				1	1	4	6
Sweden					1	3	4
Switzerland			2	3	5	7	17
United Kingdom				2	5	17	24
U.S.S.R.							0
Yugoslavia							0
Total	7	2	10	17	67	164	267

*Newly reported cases or revisions of case status according to new clinical information or better understanding of the AIDS definition.

Epidemiologic Notes and Reports

Update: Enterovirus Surveillance — United States, 1983

Through October 1983, the pattern of U.S. enterovirus isolates reported to CDC remains similar to that reported through August (*1*). Coxsackievirus B5 remains the most commonly reported nonpolio enterovirus isolate (347/1,415, 25% of the total), followed by echovirus 11 (128 isolates), echovirus 24 (122), echovirus 30 (117), and echovirus 20 (109) (Table 4). Sufficient isolates were reported from six regions to examine temporal patterns of isolation. For four of these, the number of enterovirus isolates (including Coxsackievirus B5), were increasing through August. In the Mid-Atlantic region, the peak occurred in July, while in the West South Central region, enterovirus isolates peaked in June.

The distribution of ages and diagnoses reported for the patients from whom the isolates were taken has not changed substantially from the previous report.

Reference

1. CDC. Enterovirus surveillance—United States, 1983. MMWR 1983;32:535-41.

Enterovirus Surveillance — Continued

TABLE 4. The five most common enterovirus isolates, by region — United States, January-October 1983.

Rank	New England	Mid-Atlantic	East North Central	West North Central	South Atlantic	East South Central	West South Central	Mountain	Pacific
1	Cox B5	Cox B5	Cox B5	Echo 20	Echo 30	Cox B5	Cox B5	Cox B5	Echo 30
2	Echo 30	Echo 6	Echo 24	Cox B5	Cox B5		Echo 11	Echo 11	Echo 11
3	Echo 9	Cox A9	Echo 20	Echo 27	Echo 11		Echo 24	Cox A9*	Cox A9
4	Echo 11	Echo 9	Echo 30	Echo 11	Echo 20		Cox B2	Cox A16*	Cox B3*
5	Cox A9	Cox B1*	Echo 11*	Echo 24	Echo 6		Cox B3	Cox B3*	Cox B5*
		Cox B2*	Echo 5*					Echo 30*	Echo 6*
		Cox B3*							
Total no. of isolates per region	111	103	320	226	180	1	326	55	91

*These viruses were isolated in equal numbers in this reporting area.

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

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

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