CDC
CENTERS FOR DISEASE CONTROL

October 11, 1991 / Vol. 40 / No. 40

MMWR
MORBIDITY AND MORTALITY WEEKLY REPORT

Health Objectives for the Nation

Weapon-Carrying Among High School Students — United States, 1990

From 1980 through 1989, more than 11,000 persons died in the United States as a result of homicides committed by high school-aged youth using firearms, cutting instruments, or blunt objects (Federal Bureau of Investigation, Uniform Crime Reports, Supplementary Homicide Report Files, unpublished data, 1980–1989). Firearm-related homicides accounted for more than 65% of these fatalities. Immediate access to a potentially lethal weapon, especially a firearm, may increase the likelihood that a lethal event would result from a violent altercation (*1,2*). This article presents the prevalence and incidence of self-reported weapon-carrying among high school students in grades 9–12 in the United States during 1990.

The 1990 national school-based Youth Risk Behavior Survey (YRBS) is a component of the Youth Risk Behavior Surveillance System, which periodically measures the prevalence of priority health-risk behaviors among youth through comparable national, state, and local surveys (*3*). A three-stage sample design was used to obtain a representative sample of 11,631 students in grades 9–12 in the 50 states, the District of Columbia, Puerto Rico, and the Virgin Islands. Students were asked as part of the YRBS: "During the past 30 days, how many times have you carried a weapon, such as a gun, knife, or club, for self-protection or because you thought you might need it in a fight?" and "What kind of weapon did you usually carry?" In this report, incidence rates* describe the number of times, per 100 students, that weapons were carried during the 30-day period. Students were not asked if they carried weapons onto school grounds.

*The incidence rate was calculated by adding the number of times each student reported carrying a weapon during the 30 days preceding the survey and dividing this sum by the total number of students. The number of weapon-carrying episodes per student was then multiplied by 100 to determine the incidence rate per 100 students. Students who replied that they carried a weapon two or three times were assigned a weapon-carrying frequency of 2.5; four or five times, 4.5; and six or more times, 6.

Weapon-Carrying — Continued

Nearly 20% of all students in grades 9–12 reported they had carried a weapon at least once during the 30 days preceding the survey (Table 1). Male students (31.5%) were significantly more likely than female students (8.1%) to report having carried a weapon. Hispanic (41.1%) and black (39.4%) male students were significantly more likely to report having carried a weapon than were white (28.6%) male students. Of the students who reported having carried weapons during the 30 days preceding the survey, 25.0% said they did so only once; 32.2%, two or three times; 7.4%, four or five times; and 35.5%, six or more times.

An estimated 71 weapon-carrying incidents occurred per 100 students per month (Table 2). The incidence of weapon-carrying was approximately four times higher for male (116 incidents per 100 students) than for female (27 incidents per 100) students. The incidence was highest for Hispanic (162 incidents per 100) male, followed by black (154 incidents per 100) and white (100 incidents per 100) male students. Students who reported carrying weapons four or more times during the 30 days preceding the survey (8.7% of all students) accounted for nearly three fourths (70.9%) of weapon-carrying incidents.

Among students who carried a weapon, knives or razors (55.2%; 95% confidence interval [CI] = 51.3%–59.1%) were carried significantly more often than clubs (24.0%; 95% CI = 20.7%–27.3%) or firearms (20.8%; 95% CI = 17.0%–24.6%). Most students who reported carrying firearms carried handguns. Among black male students who carried a weapon, firearms (54.2%; 95% CI = 41.1%–67.3%) were the most frequently carried weapon. Among white and Hispanic male students who carried a weapon,

TABLE 1. Percentage of high school students who reported carrying a weapon at least once during the 30 days preceding the survey, by race/ethnicity and gender — United States, Youth Risk Behavior Survey, 1990*

Race/ Ethnicity	Male		Female		Total	
	%	(95% CI†)	%	(95% CI)	%	(95% CI)
White	28.6	(23.8–33.4)	5.3	(4.0– 6.6)	16.8	(13.9–19.7)
Black	39.4	(34.8–44.0)	16.7	(12.6–20.8)	27.2	(23.9–30.5)
Hispanic	41.1	(37.0–45.2)	12.2	(9.3–15.1)	25.8	(22.7–28.9)
Total	**31.5**	**(27.6–35.4)**	**8.1**	**(6.5– 9.7)**	**19.6**	**(17.1–22.1)**

*Unweighted sample size = 11,631 students.
†Confidence interval.

TABLE 2. Thirty-day incidence* of weapon-carrying per 100 students, by race/ethnicity and gender — United States, Youth Risk Behavior Survey, 1990†

Race/ Ethnicity	Male		Female		Total	
	Incidence	(95% CI§)	Incidence	(95% CI)	Incidence	(95% CI)
White	100	(73–127)	17	(12–22)	58	(43– 73)
Black	154	(105–203)	58	(38–78)	103	(72–134)
Hispanic	162	(118–206)	43	(26–60)	99	(74–124)
Total	**116**	**(95–137)**	**27**	**(22–32)**	**71**	**(59– 83)**

*Students who replied that they carried a weapon two or three times were assigned a weapon-carrying frequency of 2.5; four or five times, 4.5; and six or more times, 6.
†Unweighted sample size = 11,631 students.
§Confidence interval.

Weapon-Carrying — Continued

knives and razors were the most frequently carried weapons (54.7% [95% CI = 49.0%–60.4%] and 46.9% [95% CI = 38.9%–54.9%], respectively).

Reported by: Div of Injury Control, National Center for Environmental Health and Injury Control; Div of Adolescent and School Health, National Center for Chronic Disease Prevention and Health Promotion, CDC.

Editorial Note: Data from the 1990 YRBS indicate that approximately one of every five high school students carried a firearm, knife, or club at least one time during the 30 days preceding the survey. Approximately one of 20 students carried a firearm, usually a handgun. Black and Hispanic males—those students who were most likely to have carried potentially lethal weapons—have also been at highest risk for homicide victimization (*4*).

One of the national health objectives for the year 2000 is to "reduce by 20 percent the incidence of weapon-carrying by adolescents aged 14 through 17" (objective 7.10) (*5*). The 1990 YRBS baseline data indicate that 71 weapon-carrying episodes occurred per 100 students during the 30 days preceding the survey. To achieve the year 2000 objective, this incidence rate must be reduced to 57 episodes per 100 students per month.

Plans to achieve this national objective and prevent weapon-related deaths and injuries among youth should address the following considerations. First, because most weapon-carrying incidents are attributed to a relatively small proportion of adolescents, programs to reduce weapon-carrying should target frequent weapon carriers, as well as their peers and families. Second, because firearms, particularly handguns, are the weapon most highly associated with fatal events, weapon-related fatalities will be prevented most effectively by reductions in firearm-carrying. Third, because the risk for being assaulted is an important motivation for weapon-carrying (*6*), programs should attempt to reduce the perceived or actual risk for victimization that underlies the need many students feel to carry weapons for self-protection.

School systems have employed various strategies to confiscate weapons and deter students from bringing weapons onto school grounds (*7*) including random locker searches, walk-throughs with metal detectors, and policies requiring clear plastic or mesh book bags so that weapons cannot be hidden easily. Because weapon-carrying also occurs outside the school, however, these strategies should be combined with curricula and counseling programs that teach students nonviolent conflict resolution skills and discourage weapon-carrying (*8*). Complementary educational and legal strategies are also needed at the community level. For example, educational campaigns may help parents reduce their children's access to weapons (e.g., storing weapons and ammunition separately and under lock and key) and communicate to their children the potential consequences of weapon-carrying. Moreover, the apparent effectiveness of prohibiting public firearm-carrying for reducing firearm-related homicides (*9,10*) suggests that additional legal sanctions may also deter adolescents from firearm-carrying.

References

1. Zimring FE. Is gun control likely to reduce violent killings? University of Chicago Law Review 1968;35:721–37.
2. Cook PJ. The technology of personal violence. In: Tonry M, ed. Crime and justice: an annual review of research. 14th ed. Chicago: University of Chicago Press, 1991.
3. Kolbe LJ. An epidemiological surveillance system to monitor the prevalence of youth behaviors that most affect health. Health Education 1990;21:44–8.
4. CDC. Homicide surveillance: high-risk racial and ethnic groups—blacks and Hispanics, 1970 to 1983. Atlanta: US Department of Health and Human Services, Public Health Service, 1986.

Weapon-Carrying — Continued

5. Public Health Service. Healthy people 2000: national health promotion and disease prevention objectives—full report, with commentary. Washington, DC: US Department of Health and Human Services, Public Health Service, 1991:236; DHHS publication no. (PHS)91-50212.
6. Young RL, McDowell D, Loftin C. Collective security and the ownership of firearms for protection. Criminology 1987;25:47–62.
7. Office of Juvenile Justice and Delinquency Prevention. Weapons in schools. Washington, DC: US Department of Justice, Office of Juvenile Justice and Delinquency Prevention, 1989. (OJJDP Juvenile Justice Bulletin).
8. Prothrow-Stith D. Violence prevention curriculum for adolescents. Newton, Massachusetts: Education Development Center, 1987.
9. Deutsch SJ, Alt FB. The effect of Massachusetts' gun control law on gun-related crimes in the city of Boston. Evaluation Quarterly 1977;1:543–68.
10. O'Carroll PW, Loftin C, Waller JB, et al. Preventing homicide: an evaluation of the efficacy of a Detroit gun ordinance. Am J Public Health 1991;81:576–81.

Current Trends

Update: Nonhuman Primate Importation

Beginning in November 1989, a number of cynomolgus monkeys (*Macaca fascicularis*) imported into the United States were found to have been infected with a previously unrecognized Ebola-like filovirus (*1*). This report summarizes findings of surveillance and serologic testing of nonhuman primates imported under special permits from June 1990 through September 1991.

On January 19, 1990, CDC published interim guidelines for handling nonhuman primates during transit and quarantine (*2*). CDC notified all importers by letter on March 15, 1990, that compliance with these transit, isolation, and quarantine standards was mandatory for continued registration as an importer of nonhuman primates and that registered importers would be subject to unannounced inspections of nonhuman primate quarantine facilities. In April 1990, CDC implemented a special-permit procedure for importing cynomolgus (the species involved in the initial outbreak), African green, and rhesus monkeys because filovirus seroreactivity was detected in these species (*3*). To obtain the permit, applicants were required to submit an importation plan describing the steps that would be taken to minimize the risk for filovirus exposure of persons and animals during the entire importation and quarantine process. Serologic testing for filovirus and CDC review of results were required before release of animals from quarantine.

From June 1990 through September 1991, 19 nonhuman primate quarantine facilities in the United States received 130 shipments of cynomolgus, African green, and rhesus monkeys under the provisions of the 13 special permits issued by CDC. A total of 12,245 primates (10,881 cynomolgus, 882 rhesus, and 482 African green monkeys) were imported from eight countries: Barbados, Canada, China, Indonesia, Mauritius, Myanmar, the Philippines, and Saint Kitts. As of September 9, 106 shipments (9287 animals) had completed the 31-day quarantine period and satisfied the filovirus testing requirements for release.

Surveillance of 106 shipments that have completed quarantine and testing indicated that 167 (1.8%) primates died (79 during the first 7 days of quarantine and 88 during days 8–31). Mortality by shipment ranged from 0 to 14.9%. Clinical diagnoses included cold stress, pneumonia, enteritis, dehydration, tuberculosis, and adverse

Nonhuman Primate Importation — Continued

reactions to anesthetics. No hemorrhagic illness has been reported. Filovirus antigen capture or virus isolation was attempted on tissue from 80 of the 88 animals that died after 8 or more days in quarantine; all were negative.

Paired serum specimens were obtained from the 9287 primates completing quarantine (specimens obtained during days 1–7 and on or after day 31 of quarantine) and were tested by a single laboratory for seroreactivity to filovirus antigens using an indirect fluorescent antibody panel that includes both African and Asian filovirus antigens. Of the 9287 specimens obtained during days 1–7 of quarantine, 121 (1.3%) had antibody titers of ≥256, suggesting filovirus infection sometime before importation. Fifteen (0.2%) sets of paired specimens demonstrated a significant antibody response by seroconversion (i.e., a fourfold or greater increase in antibody titer to ≥256) during the 31-day quarantine period. The animals that seroconverted were from 12 different shipments originating in Indonesia, Mauritius, Myanmar, and the Philippines. Fourteen of the seroconversions occurred in cynomolgus monkeys; one occurred in a rhesus monkey. A total of 728 primates from the 12 shipments containing primates that seroconverted were quarantined for a second 31-day period, and additional serum specimens were obtained. These specimens were paired with those obtained on or after day 31 of the initial quarantine period. Three (0.4%) seroconversions occurred; the groups they represented (from three of these 12 shipments) were quarantined for a third 31-day period. None of the monkeys quarantined for a third time seroconverted.

Among seropositive animals that survived primary infection, no evidence has been found of persistence of filovirus. Monkeys that maintained positive filovirus antibody titers during the quarantine period appeared to be free of active or persistent filovirus infections upon release from quarantine. In addition, among 32 (16 cynomolgus and 16 African green) monkeys experimentally infected at CDC with African or Asian filoviruses, filovirus has been detected in the tissues or fluids of surviving animals no later than 19 days after infection. Filovirus seroconversion has not been associated with illness or death among imported nonhuman primates since the original reports of primate deaths in 1989 and 1990 in Pennsylvania, Texas, and Virginia (*1,2,4*).

Of 104 special-permit importations that CDC monitored, 43 (41.3%) did not comply with one or more parts of the approved special-permit importation plan, most commonly those parts designed to prevent human exposure to the primates during transit. CDC is continuing to work with importers to improve the level of compliance.

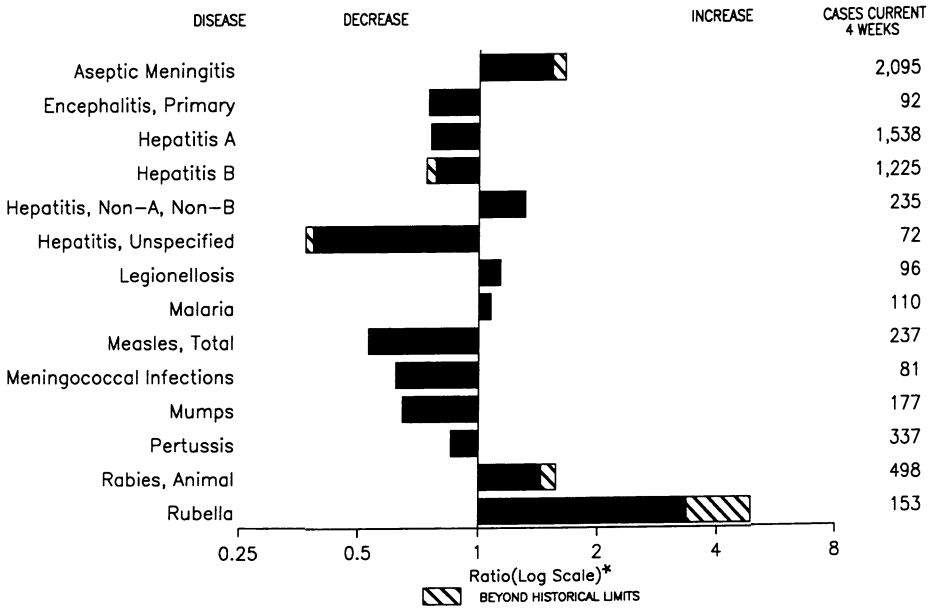
During 1989, the year before identification of filovirus in imported nonhuman primates, approximately 15,900 cynomolgus monkeys were imported; based on mortality at that time (10%–15%), approximately 14,300 animals survived the quarantine period. Of these, an estimated 15%, or 2200 animals, were re-exported. Since January 1991, importations of cynomolgus monkeys have averaged 1000 per month. Based on this rate, an estimated 12,000 of these monkeys will be imported during 1991. Assuming a 1.8% mortality during quarantine, approximately 11,800 animals will survive the quarantine period.

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

Editorial Note: Since the implementation of a special-permit procedure for importing cynomolgus (the primate species most frequently used in scientific research in the

(Continued on page 691)

FIGURE I. Notifiable disease reports, comparison of 4-week totals ending October 5, 1991, with historical data — United States



*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 October 5, 1991 (40th Week)

	Cum. 1991		Cum. 1991
AIDS	33,977	Measles: imported	180
Anthrax	-	indigenous	8,419
Botulism: Foodborne	12	Plague	8
Infant	60	Poliomyelitis, Paralytic*	-
Other	6	Psittacosis	66
Brucellosis	63	Rabies, human	2
Cholera	21	Syphilis, primary & secondary	31,456
Congenital rubella syndrome	15	Syphilis, congenital, age < 1 year	15
Diphtheria	2	Tetanus	39
Encephalitis, post-infectious	63	Toxic shock syndrome	224
Gonorrhea	456,213	Trichinosis	59
Haemophilus influenzae (invasive disease)	2,219	Tuberculosis	17,282
Hansen Disease	110	Tularemia	147
Leptospirosis	46	Typhoid fever	332
Lyme Disease	6,992	Typhus fever, tickborne (RMSF)	528

*Four suspected cases of poliomyelitis have been reported in 1991; none of the 8 suspected cases in 1990 have been confirmed to date. Five of 13 suspected cases in 1989 were confirmed and all were vaccine associated.

TABLE II. Cases of selected notifiable diseases, United States, weeks ending October 5, 1991, and October 6, 1990 (40th Week)

Reporting Area	AIDS	Aseptic Meningitis	Encephalitis		Gonorrhea		Hepatitis (Viral), by type				Legionellosis	Lyme Disease
			Primary	Post-infectious			A	B	NA,NB	Unspecified		
	Cum. 1991	Cum. 1991	Cum. 1991	Cum. 1991	Cum. 1991	Cum. 1990	Cum. 1991	Cum. 1991	Cum. 1991	Cum. 1991	Cum. 1991	Cum. 1991
UNITED STATES	33,977	10,873	699	63	456,213	521,483	18,184	12,923	2,322	964	913	6,992
NEW ENGLAND	1,334	1,288	25	1	11,244	14,223	451	660	55	27	61	1,260
Maine	46	134	3	-	125	168	18	18	2	-	2	-
N.H.	32	155	5	-	160	186	25	21	5	-	8	32
Vt.	17	217	4	-	42	44	23	13	6	-	4	7
Mass.	747	403	10	1	4,828	5,920	217	461	29	24	42	223
R.I.	71	372	1	-	946	900	84	21	11	3	5	117
Conn.	421	7	2	-	5,143	7,005	84	126	2	-	-	881
MID. ATLANTIC	9,192	2,027	52	11	54,011	68,385	1,825	1,236	265	16	262	4,309
Upstate N.Y.	1,211	1,065	25	7	10,220	11,159	694	474	148	10	92	2,865
N.Y. City	5,223	303	1	-	20,305	28,123	643	190	8	-	41	-
N.J.	1,842	-	-	-	8,850	11,385	204	280	67	-	24	700
Pa.	916	659	26	4	14,636	17,718	284	292	42	6	105	744
E.N. CENTRAL	2,490	2,099	217	7	85,253	98,689	2,312	1,493	368	55	191	209
Ohio	476	811	76	2	25,793	29,800	298	325	145	16	91	120
Ind.	231	151	20	1	9,188	8,858	304	168	1	1	16	10
Ill.	1,194	336	69	4	26,032	31,674	981	221	58	7	18	21
Mich.	417	702	48	-	19,162	21,436	240	484	105	31	38	58
Wis.	172	99	4	-	5,078	6,921	489	295	59	-	28	-
W.N. CENTRAL	886	530	50	7	22,423	26,821	1,813	540	236	21	46	262
Minn.	179	105	28	-	2,354	3,336	322	60	11	2	8	71
Iowa	84	113	-	4	1,547	1,882	44	36	8	3	11	15
Mo.	504	216	12	3	13,780	15,989	487	352	210	11	13	157
N. Dak.	4	8	2	-	49	107	37	4	4	1	1	1
S. Dak.	3	10	4	-	281	212	667	7	1	-	3	1
Nebr.	42	22	2	-	1,444	1,326	182	34	1	-	8	-
Kans.	70	56	2	-	2,968	3,969	74	47	1	4	2	17
S. ATLANTIC	8,187	1,913	135	28	136,551	149,047	1,392	2,717	301	201	139	521
Del.	58	60	2	-	2,200	2,418	7	42	5	2	2	50
Md.	768	230	21	1	15,055	18,240	231	316	44	14	28	202
D.C.	568	57	2	-	7,109	9,962	62	125	1	1	6	2
Va.	558	316	33	3	14,035	14,216	137	175	25	134	12	114
W. Va.	47	37	21	-	973	1,009	20	46	2	13	1	34
N.C.	423	265	28	-	27,375	23,150	136	423	99	-	15	67
S.C.	276	39	-	-	11,569	11,954	34	564	16	3	29	10
Ga.	1,159	250	8	2	30,626	32,659	180	418	53	-	13	26
Fla.	4,330	659	20	22	27,609	35,439	585	608	56	34	33	16
E.S. CENTRAL	800	697	30	-	44,162	45,302	198	1,072	315	3	45	90
Ky.	132	159	8	-	4,657	5,154	43	143	6	2	17	38
Tenn.	257	205	14	-	15,599	14,129	111	790	285	-	13	39
Ala.	255	263	8	-	12,782	14,956	34	128	20	1	14	13
Miss.	156	70	-	-	11,124	11,063	10	11	4	-	1	-
W.S. CENTRAL	3,308	1,162	82	2	52,041	57,119	2,533	1,725	103	187	39	63
Ark.	147	55	24	-	6,204	6,918	226	90	3	5	7	23
La.	561	114	15	-	11,848	10,644	108	238	6	6	7	2
Okla.	157	4	3	1	5,208	4,927	226	179	44	16	15	29
Tex.	2,443	989	40	1	28,781	34,630	1,973	1,218	50	160	10	9
MOUNTAIN	954	213	17	2	9,271	11,105	2,828	784	146	117	62	16
Mont.	24	18	1	-	75	150	71	62	4	5	4	-
Idaho	19	-	-	-	119	109	73	59	2	1	3	2
Wyo.	15	-	-	-	76	139	102	11	3	-	-	8
Colo.	339	84	7	1	2,655	3,202	474	111	75	23	14	-
N. Mex.	89	17	-	-	809	991	703	187	10	29	3	-
Ariz.	192	50	9	1	3,467	4,243	890	139	16	48	23	-
Utah	84	15	-	-	232	315	245	60	13	11	4	-
Nev.	192	29	-	-	1,838	1,956	270	155	23	-	11	6
PACIFIC	6,826	944	91	5	41,257	50,792	4,832	2,696	533	337	68	262
Wash.	416	-	8	1	3,475	4,420	440	349	115	19	7	2
Oreg.	210	-	-	-	1,580	1,957	315	241	97	8	2	-
Calif.	6,050	864	81	4	34,918	42,990	3,951	2,043	304	309	57	260
Alaska	16	37	2	-	687	932	86	27	13	1	-	-
Hawaii	134	43	-	-	597	493	40	36	4	-	2	-
Guam	2	-	-	-	-	237	-	-	-	-	-	-
P.R.	1,336	203	2	3	437	541	74	373	149	42	-	-
V.I.	13	-	-	-	309	338	1	9	-	-	-	-
Amer. Samoa	-	-	-	-	-	73	-	-	-	-	-	-
C.N.M.I.	-	-	-	-	-	162	-	-	-	-	-	-

N: Not notifiable U: Unavailable C.N.M.I.: Commonwealth of the Northern Mariana Islands

TABLE II. (Cont'd.) Cases of selected notifiable diseases, United States, weeks ending October 5, 1991, and October 6, 1990 (40th Week)

Reporting Area	Malaria	Measles (Rubeola)					Meningococcal Infections	Mumps		Pertussis			Rubella		
		Indigenous		Imported*		Total									
	Cum. 1991	1991	Cum. 1991	1991	Cum. 1991	Cum. 1990	Cum. 1991	1991	Cum. 1991	1991	Cum. 1991	Cum. 1990	1991	Cum. 1991	Cum. 1990
UNITED STATES	928	15	8,419	2	180	23,126	1,613	33	3,202	78	1,995	3,148	2	1,271	988
NEW ENGLAND	61	-	58	-	15	289	125	-	24	2	240	323	-	4	8
Maine	1	-	5	-	-	29	12	-	-	-	51	10	-	-	1
N.H.	2	-	-	-	-	8	12	-	4	-	18	47	-	1	1
Vt.	4	-	5	-	-	1	13	-	4	-	4	7	-	-	-
Mass.	29	-	25	-	10	29	68	-	1	2	144	231	-	2	2
R.I.	7	-	2	-	-	30	1	-	3	-	-	4	-	-	1
Conn.	18	-	21	-	5	192	19	-	12	-	23	24	-	1	3
MID. ATLANTIC	154	-	4,372	-	6	1,443	177	1	239	6	158	461	-	561	11
Upstate N.Y.	42	-	334	-	4	317	91	1	89	6	107	296	-	539	10
N.Y. City	61	-	1,710	-	-	388	12	-	-	-	-	-	-	-	-
N.J.	41	-	791	-	1	354	37	-	55	-	1	34	-	-	-
Pa.	10	-	1,537	-	1	384	37	-	95	-	50	131	-	22	1
E.N. CENTRAL	72	1	72	-	14	3,531	260	4	298	5	332	809	-	317	161
Ohio	16	-	1	-	2	537	82	-	69	-	87	139	-	283	131
Ind.	3	-	1	-	5	418	25	1	8	4	64	110	-	2	-
Ill.	28	-	26	-	-	1,351	74	-	110	-	54	330	-	6	18
Mich.	22	1	42	-	-	473	56	3	91	1	34	71	-	25	9
Wis.	3	-	2	-	7	752	23	-	20	-	93	159	-	1	3
W.N. CENTRAL	31	-	39	-	16	856	90	3	100	11	168	159	-	17	14
Minn.	8	-	12	-	15	372	19	1	19	2	65	21	-	6	9
Iowa	6	-	17	-	-	26	11	1	20	3	20	18	-	6	4
Mo.	7	-	-	-	1	99	31	1	28	-	56	91	-	5	-
N. Dak.	1	-	-	-	-	-	1	-	2	-	3	2	-	-	1
S. Dak.	2	-	-	-	-	23	2	-	1	-	4	1	-	-	-
Nebr.	1	-	1	-	-	106	6	-	6	1	9	7	-	-	-
Kans.	6	-	9	-	-	230	20	-	24	5	11	19	-	-	-
S. ATLANTIC	196	4	468	-	22	1,253	288	5	1,143	6	209	262	-	10	19
Del.	2	-	21	-	-	11	2	-	6	-	-	8	-	-	-
Md.	52	-	173	-	3	212	29	2	217	-	52	60	-	3	2
D.C.	12	-	-	-	-	22	13	-	23	-	1	14	-	1	1
Va.	44	-	25	-	5	86	31	-	53	-	18	17	-	-	1
W. Va.	3	-	-	-	-	6	12	-	18	-	9	23	-	-	-
N.C.	13	-	41	-	3	30	50	-	232	-	32	65	-	2	-
S.C.	9	-	13	-	-	4	28	-	375	-	11	5	-	-	-
Ga.	18	-	10	-	5	321	57	-	40	4	42	32	-	-	-
Fla.	43	4	185	-	6	561	66	3	179	2	44	38	-	4	15
E.S. CENTRAL	20	-	7	-	3	189	102	-	158	6	85	139	-	100	4
Ky.	2	-	1	-	1	43	36	-	-	-	-	-	-	-	1
Tenn.	11	-	6	-	1	94	32	-	128	5	35	68	-	100	3
Ala.	7	-	-	-	1	25	32	-	10	1	48	63	-	-	-
Miss.	-	-	-	-	-	27	2	-	20	-	2	8	-	-	-
W.S. CENTRAL	68	-	184	-	14	4,268	120	4	336	12	109	149	-	7	66
Ark.	7	-	-	-	5	42	18	1	43	-	7	17	-	1	3
La.	17	-	-	-	-	10	29	-	26	-	13	30	-	-	-
Okla.	7	-	-	-	-	174	13	-	14	5	34	43	-	-	1
Tex.	37	-	184	-	9	4,042	60	3	253	7	55	59	-	6	62
MOUNTAIN	34	9	1,191	-	19	929	62	4	264	9	265	272	-	22	109
Mont.	1	-	-	-	-	1	10	-	-	1	4	32	-	-	14
Idaho	2	U	432	U	2	26	7	U	8	U	26	48	U	-	49
Wyo.	-	U	1	U	2	15	1	U	4	U	3	-	U	-	-
Colo.	9	-	1	-	5	138	11	1	124	7	113	93	-	2	4
N. Mex.	6	-	117	-	5	93	8	N	N	1	36	17	-	2	-
Ariz.	13	9	402	-	-	303	19	3	102	-	57	49	-	2	32
Utah	2	-	220	-	4	128	-	-	13	-	24	29	-	11	2
Nev.	1	-	18	-	1	225	6	-	13	-	2	4	-	5	8
PACIFIC	292	1	2,028	2	71	10,368	389	12	640	21	429	574	2	233	596
Wash.	20	-	46	-	15	254	53	4	166	12	118	154	-	8	-
Oreg.	9	-	49	-	33	212	48	N	N	-	60	74	-	3	73
Calif.	259	-	1,926	-	13	9,800	278	7	440	3	197	292	1	216	510
Alaska	-	-	2	-	3	80	8	-	10	-	12	5	-	1	-
Hawaii	4	1	5	2†§	7	22	2	1	24	6	42	49	1	5	13
Guam	-	U	-	U	-	1	-	U	-	U	-	1	U	-	-
P.R.	1	-	93	-	1	1,653	16	1	10	1	47	10	-	1	-
V.I.	2	-	-	-	2	24	-	-	9	-	-	-	-	-	-
Amer. Samoa	-	U	-	U	-	566	-	U	-	U	-	-	U	-	-
C.N.M.I.	-	U	-	U	-	4	-	U	-	U	-	4	U	-	-

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

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

TABLE II. (Cont'd.) Cases of selected notifiable diseases, United States, weeks ending October 5, 1991, and October 6, 1990 (40th Week)

Reporting Area	Syphilis (Primary & Secondary)		Toxic-shock Syndrome	Tuberculosis		Tula-remia	Typhoid Fever	Typhus Fever (Tick-borne) (RMSF)	Rabies, Animal
	Cum. 1991	Cum. 1990	Cum. 1991	Cum. 1991	Cum. 1990	Cum. 1991	Cum. 1991	Cum. 1991	Cum. 1991
UNITED STATES	31,456	37,734	224	17,282	17,894	147	332	528	4,925
NEW ENGLAND	810	1,324	12	490	431	4	32	7	92
Maine	1	7	4	30	7	-	1	-	-
N.H.	12	46	1	5	3	-	1	-	2
Vt.	1	1	-	7	8	-	-	-	-
Mass.	383	524	7	252	223	4	27	6	14
R.I.	44	17	-	69	56	-	-	-	-
Conn.	369	729	-	127	134	-	3	1	76
MID. ATLANTIC	4,947	7,236	36	3,917	4,252	1	73	20	1,678
Upstate N.Y.	103	707	16	259	311	1	14	10	645
N.Y. City	2,535	3,440	2	2,431	2,664	-	40	-	-
N.J.	1,021	1,196	-	679	710	-	16	6	763
Pa.	1,288	1,893	18	548	567	-	3	4	270
E.N. CENTRAL	3,885	2,743	42	1,709	1,718	6	27	41	138
Ohio	507	413	20	260	309	1	3	24	15
Ind.	133	76	-	170	151	-	-	10	14
Ill.	1,842	1,127	14	884	877	3	10	4	31
Mich.	1,006	819	8	312	316	2	10	3	32
Wis.	397	308	-	83	65	-	4	-	46
W.N. CENTRAL	571	408	34	398	461	43	5	33	683
Minn.	53	71	7	75	84	1	2	-	246
Iowa	56	57	7	54	44	-	-	1	138
Mo.	413	218	11	178	239	34	1	21	17
N. Dak.	-	1	-	6	17	-	-	-	78
S. Dak.	1	2	1	28	10	5	-	1	143
Nebr.	12	9	1	15	16	1	2	5	14
Kans.	36	50	7	42	51	2	-	5	47
S. ATLANTIC	9,388	12,161	22	3,241	3,328	4	56	235	1,154
Del.	134	141	1	23	32	-	-	-	130
Md.	753	928	1	284	245	-	10	24	437
D.C.	577	881	1	144	123	-	2	-	11
Va.	690	691	5	271	282	-	8	14	196
W. Va.	22	18	-	53	53	-	1	4	44
N.C.	1,526	1,356	9	436	451	1	3	130	17
S.C.	1,194	807	2	328	370	1	4	31	82
Ga.	2,286	3,143	-	628	567	1	5	29	209
Fla.	2,206	4,196	3	1,074	1,205	1	23	3	28
E.S. CENTRAL	3,476	3,463	9	1,204	1,292	18	2	91	133
Ky.	80	76	4	271	296	4	2	24	40
Tenn.	1,163	1,439	5	388	360	13	-	51	29
Ala.	1,257	1,051	-	294	388	1	-	16	64
Miss.	976	897	-	251	248	-	-	-	-
W.S. CENTRAL	5,745	6,427	14	2,141	2,147	42	22	90	487
Ark.	478	447	3	178	273	30	-	21	36
La.	2,041	1,997	-	197	251	-	5	-	5
Okla.	150	199	4	137	153	11	3	68	141
Tex.	3,076	3,784	7	1,629	1,470	1	14	1	305
MOUNTAIN	486	696	28	440	430	24	10	8	196
Mont.	6	-	1	6	22	9	-	6	37
Idaho	4	6	-	5	10	-	-	-	4
Wyo.	9	3	-	4	5	1	-	-	71
Colo.	66	42	5	33	41	6	1	2	24
N. Mex.	26	35	6	58	81	2	2	-	4
Ariz.	289	498	5	239	188	2	6	-	35
Utah	6	11	11	40	32	4	-	-	13
Nev.	80	101	-	55	51	-	1	-	8
PACIFIC	2,148	3,276	27	3,742	3,835	5	105	3	364
Wash.	126	309	3	223	218	2	6	2	1
Oreg.	65	107	-	91	101	2	4	1	5
Calif.	1,948	2,829	24	3,230	3,338	1	91	-	354
Alaska	4	16	-	47	42	-	-	-	3
Hawaii	5	15	-	151	136	-	4	-	1
Guam	-	2	-	-	36	-	-	-	-
P.R.	332	246	-	176	66	-	9	-	52
V.I.	85	10	-	2	4	-	-	-	-
Amer. Samoa	-	-	-	-	15	-	-	-	-
C.N.M.I.	-	3	-	-	47	-	-	-	-

TABLE III. Deaths in 121 U.S. cities,* week ending October 5, 1991 (40th Week)

Reporting Area	All Causes, By Age (Years)						P&I†
	All Ages	≥65	45-64	25-44	1-24	<1	Total
NEW ENGLAND	611	427	96	63	15	10	43
Boston, Mass.	195	117	42	26	3	7	21
Bridgeport, Conn.	51	35	11	4	1	-	5
Cambridge, Mass.	27	18	7	1	1	-	-
Fall River, Mass.	22	17	3	1	1	-	-
Hartford, Conn.	45	35	5	4	1	-	2
Lowell, Mass.	24	21	1	1	1	-	-
Lynn, Mass.	21	18	2	1	-	-	1
New Bedford, Mass.	22	18	1	3	-	-	1
New Haven, Conn.	47	33	2	8	3	1	3
Providence, R.I.	29	23	3	2	1	-	1
Somerville, Mass.	4	4	-	-	-	-	-
Springfield, Mass.	43	29	9	5	-	-	4
Waterbury, Conn.	25	14	5	5	1	-	3
Worcester, Mass.	56	45	5	2	2	2	2
MID. ATLANTIC	1,191	772	252	106	23	38	63
Albany, N.Y.	46	29	14	2	1	-	3
Allentown, Pa.	24	20	2	2	-	-	1
Buffalo, N.Y.	100	70	20	6	1	3	4
Camden, N.J.	38	21	11	1	1	4	2
Elizabeth, N.J.	26	14	9	3	-	-	1
Erie, Pa.§	30	21	7	2	-	-	-
Jersey City, N.J.	52	35	8	8	-	1	2
New York City, N.Y.	U	U	U	U	U	U	U
Newark, N.J.	85	35	23	18	3	6	3
Paterson, N.J.	29	12	6	3	-	8	1
Philadelphia, Pa.	323	199	83	24	7	10	9
Pittsburgh, Pa.§	47	31	9	4	-	3	3
Reading, Pa.	47	29	9	7	2	-	9
Rochester, N.Y.	109	78	22	8	1	-	8
Schenectady, N.Y.	28	22	4	1	1	-	3
Scranton, Pa.§	38	35	1	1	1	-	1
Syracuse, N.Y.	75	51	12	6	4	2	1
Trenton, N.J.	34	21	6	6	1	-	7
Utica, N.Y.	27	22	3	1	-	1	2
Yonkers, N.Y.	33	27	3	3	-	-	3
E.N. CENTRAL	2,035	1,323	392	188	92	40	81
Akron, Ohio	61	48	10	2	1	-	6
Canton, Ohio	34	26	8	-	-	-	2
Chicago, Ill.	337	145	60	69	57	6	8
Cincinnati, Ohio	112	70	29	6	5	2	12
Cleveland, Ohio	165	96	41	20	1	7	3
Columbus, Ohio	199	135	34	19	8	3	3
Dayton, Ohio	112	87	16	5	2	2	7
Detroit, Mich.	196	121	48	19	7	1	2
Evansville, Ind.	42	30	7	4	-	1	1
Fort Wayne, Ind.	59	40	13	4	-	2	5
Gary, Ind.	18	6	2	7	2	1	1
Grand Rapids, Mich.	63	42	11	7	1	2	3
Indianapolis, Ind.	169	126	30	8	2	3	3
Madison, Wis.	53	35	12	4	1	1	2
Milwaukee, Wis.	122	102	14	5	-	1	10
Peoria, Ill.	48	36	9	-	-	3	1
Rockford, Ill.	48	34	10	1	2	1	3
South Bend, Ind.	44	33	5	3	1	2	4
Toledo, Ohio	91	62	22	3	2	2	3
Youngstown, Ohio	62	49	11	2	-	-	2
W.N. CENTRAL	770	535	132	63	20	20	25
Des Moines, Iowa	70	54	11	4	-	1	2
Duluth, Minn.	26	24	2	-	-	-	-
Kansas City, Kans.	30	20	5	1	3	1	-
Kansas City, Mo.	121	91	21	7	2	-	4
Lincoln, Nebr.	28	18	6	4	-	-	1
Minneapolis, Minn.	184	131	31	16	2	4	11
Omaha, Nebr.	72	45	13	7	3	4	4
St. Louis, Mo.	111	63	23	10	8	7	-
St. Paul, Minn.	62	42	9	7	1	3	2
Wichita, Kans.	66	47	11	7	1	-	1
S. ATLANTIC	1,268	777	252	162	49	27	52
Atlanta, Ga.	148	86	36	21	4	1	3
Baltimore, Md.	183	106	38	27	5	7	9
Charlotte, N.C.	99	62	20	11	4	2	5
Jacksonville, Fla.	118	83	20	11	3	-	9
Miami, Fla.	110	56	24	19	7	4	-
Norfolk, Va.	65	39	8	10	5	3	5
Richmond, Va.	65	39	20	1	4	1	3
Savannah, Ga.	46	23	12	7	1	3	3
St. Petersburg, Fla.	76	63	3	6	2	2	2
Tampa, Fla.	140	97	25	14	4	-	10
Washington, D.C.	200	109	43	34	10	4	3
Wilmington, Del.	18	14	3	1	-	-	-
E.S. CENTRAL	716	446	163	59	24	24	31
Birmingham, Ala.	113	72	19	14	2	6	5
Chattanooga, Tenn.	56	38	13	3	2	-	6
Knoxville, Tenn.	98	68	22	4	2	2	7
Louisville, Ky.	100	57	24	11	3	5	5
Memphis, Tenn.	151	100	29	12	7	3	-
Mobile, Ala.	44	22	13	3	4	2	2
Montgomery, Ala.	27	15	6	2	2	2	1
Nashville, Tenn.	127	74	37	10	2	4	5
W.S. CENTRAL	1,292	802	246	137	63	42	58
Austin, Tex.	38	18	9	5	4	2	3
Baton Rouge, La.	49	34	10	1	2	2	2
Corpus Christi, Tex.	37	21	12	2	1	1	-
Dallas, Tex.	197	121	33	28	7	8	2
El Paso, Tex.	72	46	12	7	5	2	5
Ft. Worth, Tex.	90	51	23	11	2	2	2
Houston, Tex.	303	177	53	48	16	9	25
Little Rock, Ark.	55	44	5	2	3	-	3
New Orleans, La.	96	51	25	13	6	1	-
San Antonio, Tex.	173	113	30	12	13	5	5
Shreveport, La.	64	47	9	-	3	5	7
Tulsa, Okla.	118	79	25	8	1	5	4
MOUNTAIN	620	394	128	64	16	18	42
Albuquerque, N.M.	75	58	9	5	3	-	6
Colo. Springs, Colo.	46	24	10	8	3	1	2
Denver, Colo.	110	62	22	19	1	6	12
Las Vegas, Nev.	94	61	24	6	1	2	4
Ogden, Utah	19	13	3	3	-	-	3
Phoenix, Ariz.	140	86	31	13	4	6	3
Pueblo, Colo.	24	13	8	3	-	-	3
Salt Lake City, Utah	34	20	7	3	1	3	4
Tucson, Ariz.	78	57	14	4	3	-	5
PACIFIC	1,859	1,189	312	230	65	57	122
Berkeley, Calif.	30	19	3	1	-	7	1
Fresno, Calif.	63	43	9	3	3	5	17
Glendale, Calif.	43	33	7	2	1	-	1
Honolulu, Hawaii	76	53	9	11	2	1	13
Long Beach, Calif.	94	57	20	11	3	2	16
Los Angeles, Calif.	503	303	77	91	24	5	14
Oakland, Calif.	U	U	U	U	U	U	U
Pasadena, Calif.	28	21	4	2	1	-	3
Portland, Oreg.	131	101	19	2	3	6	3
Sacramento, Calif.	141	88	29	16	3	5	11
San Diego, Calif.	154	93	19	25	10	5	17
San Francisco, Calif.	151	78	28	39	6	-	1
San Jose, Calif.	167	104	41	12	2	8	17
Seattle, Wash.	131	86	22	11	4	8	3
Spokane, Wash.	53	43	6	2	1	1	2
Tacoma, Wash.	94	67	19	2	2	4	3
TOTAL	10,362¶	6,665	1,973	1,072	367	276	517

*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.

Nonhuman Primate Importation — Continued

United States), African green, and rhesus monkeys, mortality during quarantine has declined substantially from that reported by industry estimates in December 1989 (i.e., 10%–15%). Because of the increased survival of imported monkeys, the health of animals completing the 31-day quarantine, filovirus test results, and surveillance of nonhuman primate importations, CDC is modifying the special-permit requirements (see box). Compliance with the January 19, 1990, interim guidelines, which supplement existing regulations (42 CFR 71.53), continues to be mandatory for the importation of all nonhuman primate species. New regulations on importation and quarantine of nonhuman primates are being developed and will be published in the *Federal Register* to allow public comment. CDC will continue to monitor nonhuman primate importations and perform unannounced on-site inspections of registered importers' facilities.

References

1. CDC. Ebola virus infection in imported primates—Virginia, 1989. MMWR 1989;38:831–2, 837–8.
2. CDC. Update: Ebola-related filovirus infection in nonhuman primates and interim guidelines for handling nonhuman primates during transit and quarantine. MMWR 1990;39:22–4,29–30.
3. CDC. Requirement for a special permit to import cynomolgus, African green, or rhesus monkeys into the United States. Federal Register 1990;77:15210.
4. Jahrling PB, Geisbert TW, Dalgard DW, et al. Preliminary report: isolation of Ebola virus from monkeys imported into the USA. Lancet 1990;335:502–5.

Modified Special-Permit Requirements for Importation and Quarantine of Nonhuman Primates

1. Transit, isolation, and quarantine requirements will remain in effect (*2*).
2. Routine testing for filovirus antibody will no longer be required. Instead, serum samples drawn during the first week following arrival of the animals at the holding facility should be stored frozen. If the 31-day quarantine period is completed without incident (i.e., death or illnesses), the serum samples may be discarded.
3. If a death occurs following the first week of the initial quarantine period, tissue must be tested for filovirus antigen; if positive, the protocol for filovirus testing and release of the entire shipment described in the importer's approved special-permit application must be followed.
4. If any illness occurs during the initial quarantine period, the entire shipment must be held in quarantine until a second blood sample is drawn from all animals (upon completion of the 31-day quarantine period) and the paired serum specimens from the ill animals tested for filovirus antibodies. If any of the animals tested demonstrate a significant filovirus antibody response (i.e., fourfold or greater titer increase to $\geq$256), the protocol for filovirus testing and release of the entire shipment described in the importer's approved special-permit application must be followed.
5. Existing regulations (42 CFR 71.53) require that any animal suspected of having yellow fever, monkeypox, or hemorrhagic fever during the 31-day quarantine period must be reported to CDC within 24 hours; telephone (404) 639-1437 or voice mail (404) 330-2705. In addition, if mortality for a shipment exceeds 5%, the importer must immediately report the circumstances, including cause of death, to CDC.

Interpretive Criteria Used to Report Western Blot Results for HIV-1–Antibody Testing — United States

The Association of State and Territorial Public Health Laboratory Directors (ASTPHLD), CDC, and other organizations (e.g., American Red Cross [ARC] and Consortium for Retrovirus Serology Standardization [CRSS]) have recommended for antibody testing to human immunodeficiency virus type 1 (HIV-1) that duplicate repeat reactive enzyme immunoassay (EIA) screening results be confirmed by a supplemental test (*1–6*). This report examines the variation in Western blot (WB) interpretive criteria reported by laboratories enrolled in CDC's Model Performance Evaluation Program (MPEP) for HIV-1–antibody testing.

In a December 1990 questionnaire survey, 1218 participants in the MPEP were asked to identify the WB interpretive criteria they used. Laboratories were also provided descriptions of the various WB band pattern combinations that were representative of each organization's set of WB interpretive criteria (Table 1) and were asked to choose which WB patterns their laboratory would use to classify a specimen as HIV-1–antibody reactive.

Of 201 laboratories that performed WB and responded, 44 (21.9%) indicated that they used more than one set of WB interpretive criteria; the remaining 157 (78.1%) laboratories indicated that they used only a single set of criteria to interpret WB results. However, discrepancies in WB interpretive practices occurred even among this latter group; when survey analysts compared the interpretive criteria that the laboratory reported using (e.g., ARC, ASTPHLD/CDC, CRSS, and Du Pont*) with the band pattern that same laboratory used to classify a specimen as reactive, only 138 (87.9%) of 157 laboratories indicated a WB band pattern that was representative of the interpretive criteria used in their laboratory.

Participating laboratories submitted results to the MPEP after testing the performance evaluation samples sent to them in August and November 1989 and in February, May, and September 1990; the sets of WB interpretive criteria they used were grouped by laboratory type (Table 2). During this period, use of the WB interpretive criteria recommended by ASTPHLD/CDC increased (*4,5*), and use of the

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

TABLE 1. Interpretive criteria for Western blot tests

Organization	Minimum band requirements for Western blot "reactive" pattern
American Red Cross (*7*)	At least one band from each gene product group: *gag* AND *pol* AND *env*
ASTPHLD/CDC*	Any two of p24, gp41, or gp120/160
Consortium for Retrovirus Serology Standardization (*3*)	p24 OR p31 AND one of gp41 or gp120/160
Du Pont†§	p24 AND p31 AND gp41 or gp120/160

*Association of State and Territorial Public Health Laboratory Directors/CDC (*5*).
†Food and Drug Administration-licensed Du Pont Western blot test (*6*).
§Use of trade names is for identification only and does not imply endorsement by the Public Health Service or the U.S. Department of Health and Human Services.

Western Blot — Continued

Du Pont and ARC interpretive criteria decreased. Additionally, laboratories of the same type did not use the same WB interpretive criteria (e.g., some health department laboratories used interpretive criteria other than those recommended by ASTPHLD/CDC). Approximately 5% of the laboratories participating in the MPEP program did not indicate which set of WB interpretive criteria they used.

Reported by: Laboratory Practice Br, Div of Laboratory Systems, Public Health Practice Program Office, CDC.

TABLE 2. Western blot (WB) interpretive criteria used by CDC's Model Performance Evaluation Program candidate reference and participant laboratories for interpretation of performance evaluation sample results

Type of laboratory/ WB interpretative criteria	% of use by shipment date				
	Aug. 1989	Nov. 1989	Feb. 1990	May 1990	Sept. 1990
Hospital nonblood bank					
American Red Cross (ARC) (*7*)	3.6	3.1	1.6	3.1	1.8
ASTPHLD/CDC*	25.0	53.8	66.7	67.7	64.9
Consortium for Retrovirus Serology Standardization (CRSS) (*3*)	12.5	3.1	3.2	3.1	3.5
Du Pont†§	42.9	29.2	19.0	15.4	17.5
Other¶	16.0	10.7	9.5	10.7	12.3
Hospital blood bank					
ARC	13.0	8.7	12.5	20.0	16.7
ASTPHLD/CDC	4.3	34.8	25.0	24.0	37.5
CRSS	4.3	0	0	4.0	0
Du Pont	60.9	52.2	54.2	44.0	37.5
Other	17.3	4.3	8.3	8.0	8.3
Health department					
ARC	5.6	2.6	1.3	1.4	1.3
ASTPHLD/CDC	59.2	66.7	76.3	79.7	74.4
CRSS	4.2	2.6	5.3	5.4	3.8
Du Pont	19.7	15.4	7.9	8.1	11.5
Other	11.3	12.7	9.2	5.4	9.0
Nonhospital blood bank					
ARC	13.0	8.7	12.5	20.0	16.7
ASTPHLD/CDC	4.3	34.8	25.0	24.0	37.5
CRSS	4.3	0	0	4.0	0
Du Pont	60.9	52.2	54.2	44.0	37.5
Other	17.3	4.3	8.3	8.0	8.3
Independent					
ARC	2.2	2.0	2.2	2.2	2.0
ASTPHLD/CDC	21.7	51.1	60.9	58.7	62.5
CRSS	26.1	23.4	15.2	17.4	18.7
Du Pont	32.6	19.1	19.6	17.4	10.4
Other	17.4	4.3	2.1	4.3	6.2

*Association of State and Territorial Public Health Laboratory Directors/CDC (*5*).
†Food and Drug Administration-licensed Du Pont Western blot test (*6*).
§Use of trade names is for identification only and does not imply endorsement by the Public Health Service or the U.S. Department of Health and Human Services.
¶Includes criteria from the National Institutes of Health and laboratories that have developed their own WB interpretive criteria.

Western Blot — Continued

Editorial Note: The WB test is a more specific supplemental test (*1,3,4,8*) and is used by more than 90% of the laboratories participating in the MPEP that perform supplemental testing (*9,10*). Although all WB interpretations are based on detecting antibodies against specific viral proteins (Table 3), different organizations have promoted the use of different sets of criteria for interpreting HIV-1 band patterns in the WB test (Table 1). Consequently, different sets of WB interpretive criteria, depending on organizational requirements or varying reasons for testing, have evolved. As a result, interpretation of a given WB pattern may depend on which criteria are used by the testing laboratory.

All sets of WB interpretive criteria (Table 1) consider a WB test that has no bands as nonreactive for HIV antibody. WB band patterns that do not meet the specific criteria for reactive are termed "indeterminate." When the four sets of WB interpretive criteria are applied to a specific WB band pattern, a WB interpretation considered reactive using one set of criteria will, in most cases, also be reactive using another set of criteria. In the early and late stages of HIV-1 infection, however, antibody titers to specific proteins may vary considerably, and the use of different sets of WB criteria may result in an incomparable interpretation (e.g., an interpretation of a WB band pattern classified as reactive using one set of WB interpretive criteria may be indeterminate using another set of criteria).

The consistent use of the ASTPHLD/CDC WB interpretive criteria would have substantially reduced the number of indeterminate interpretations reported for these performance evaluation samples. A reduction in indeterminate interpretations for clinical and public health specimens may decrease error and misinterpretation of HIV-1–testing reports (*11*), cost and difficulty of counseling persons with indeterminate test results, and cost of specimen retesting. Therefore, CDC recommends that laboratories use the ASTPHLD/CDC interpretive criteria to interpret WB results (*5*).

TABLE 3. Major genes and gene products of HIV-1

Genes	Gene products*
Group-specific antigen/core (*gag*)	p18, p24, p55
Polymerase (*pol*)	p31, p51, p66
Envelope (*env*)	gp41, gp120, gp160

*p = protein; gp = glycoprotein. Numbers indicate the approximate molecular weights of the antigens in kilodaltons.

References

1. CDC. Update: serologic testing for antibody to human immunodeficiency virus. MMWR 1988;36:833–40,845.
2. Dodd RY, Fang CT. Western immunoblot procedure for HIV antibodies and its interpretation. Arch Pathol Lab Med 1990;114:240–5.
3. Consortium for Retrovirus Serology Standardization. Serological diagnosis of human immunodeficiency virus infection by Western blot testing. JAMA 1988;260:674–9.
4. Committee on Human Retrovirus Testing. Report of the Fourth Consensus Conference on HIV Testing sponsored by the Association of State and Territorial Public Health Laboratory Directors (ASTPHLD). Infect Control Hosp Epidemiol 1989;10:357–67.
5. CDC. Interpretation and use of the Western blot assay for serodiagnosis of human immunodeficiency virus type 1 infections. MMWR 1989;38(no. S-7).
6. Du Pont Diagnostics. Human immunodeficiency virus (HIV): Biotech/Du Pont HIV Western blot kit for detection of antibodies to HIV. Wilmington, Delaware: Du Pont Diagnostics, 1987.

Western Blot — Continued

7. Sandler SG, Dodd RY, Fang CT. Diagnostic tests for HIV infection. In: DeVita VT, Hellman S, Rosenberg SA, eds. AIDS: etiology, diagnosis, treatment, and prevention. Philadelphia: JP Lippincott, 1988:121–36.
8. O'Gorman MRG, Weber D, Landis SE, Schoenbach VJ, Mittal M, Folds JD. Interpretive criteria of the Western blot assay for serodiagnosis of human immunodeficiency virus type 1 infection. Arch Pathol Lab Med 1991;115:26–30.
9. CDC. Update: serologic testing for HIV-1 antibody—United States, 1988 and 1989. MMWR 1990;39:380–3.
10. Valdiserri RO, Taylor RN, Hearn TL, Schalla WO, Muir HW. CDC perspective on quality assurance for human immunodeficiency virus type 1 antibody testing. Arch Pathol Lab Med 1990;114:263–7.
11. Benenson AS, Peddecord KM, Hofherr LK, Ascher MS, Taylor RN, Hearn TL. Reporting the results of human immunodeficiency virus testing. JAMA 1989;262:3435–8.

Notice to Readers

Statement on Preventing Childhood Lead Poisoning

On October 7, 1991, CDC released an updated statement on the prevention of childhood lead poisoning. The statement provides guidelines to pediatric health-care providers, public health programs, and others about childhood lead screening, case management for lead-poisoned children, and primary prevention of childhood lead poisoning.

Copies of the statement, *Preventing Lead Poisoning in Young Children, 1991* (*1*), are available free of charge from Publication Activities, Office of the Director, National Center for Environmental Health and Injury Control, Mailstop F-29, CDC, 1600 Clifton Road, NE, Atlanta, GA 30333.

Reference

1. CDC. Preventing lead poisoning in young children, 1991. Atlanta: US Department of Health and Human Services, Public Health Service, 1991.

The *Morbidity and Mortality Weekly Report* (*MMWR*) Series is prepared by the Centers for Disease Control and is available on a paid subscription basis from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402; telephone (202) 783-3238.

The data in the weekly *MMWR* 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. Inquiries about the *MMWR* Series, including material to be considered for publication, should be directed to: Editor, *MMWR* Series, Mailstop C-08, Centers for Disease Control, Atlanta, GA 30333; telephone (404) 332-4555.

☆U.S. Government Printing Office: 1992-631-123/42037 Region IV

HHS Publication No. (CDC) 92-8017