

HIV/AIDS

SURVEILLANCE

U.S. AIDS cases reported through April 1990

Issued May 1990

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Acquired immunodeficiency syndrome (AIDS) is a specific group of diseases or conditions which are indicative of severe immunosuppression related to infection with the human immunodeficiency virus (HIV).

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Centers for Disease Control.....William L. Roper, M.D., M.P.H.
Director
Gary R. Noble, M.D., M.P.H.
Deputy Director (HIV)

Center for Infectious DiseasesFrederick A. Murphy, D.V.M., Ph.D.
Director

Division of HIV/AIDS.....James W. Curran, M.D., M.P.H.
Director

Surveillance Branch.....Ruth L. Berkelman, M.D.
Chief

Reporting and Analysis Section.....Jeanette K. Stehr-Green, M.D.
Chief

Statistics and Data Management Branch.....W. Meade Morgan, Ph.D.
Chief
Xenophon M. Santas
Computer Specialist

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Figure 1. AIDS annual rates per 100,000 population, for cases reported May 1989 through April 1990, United States

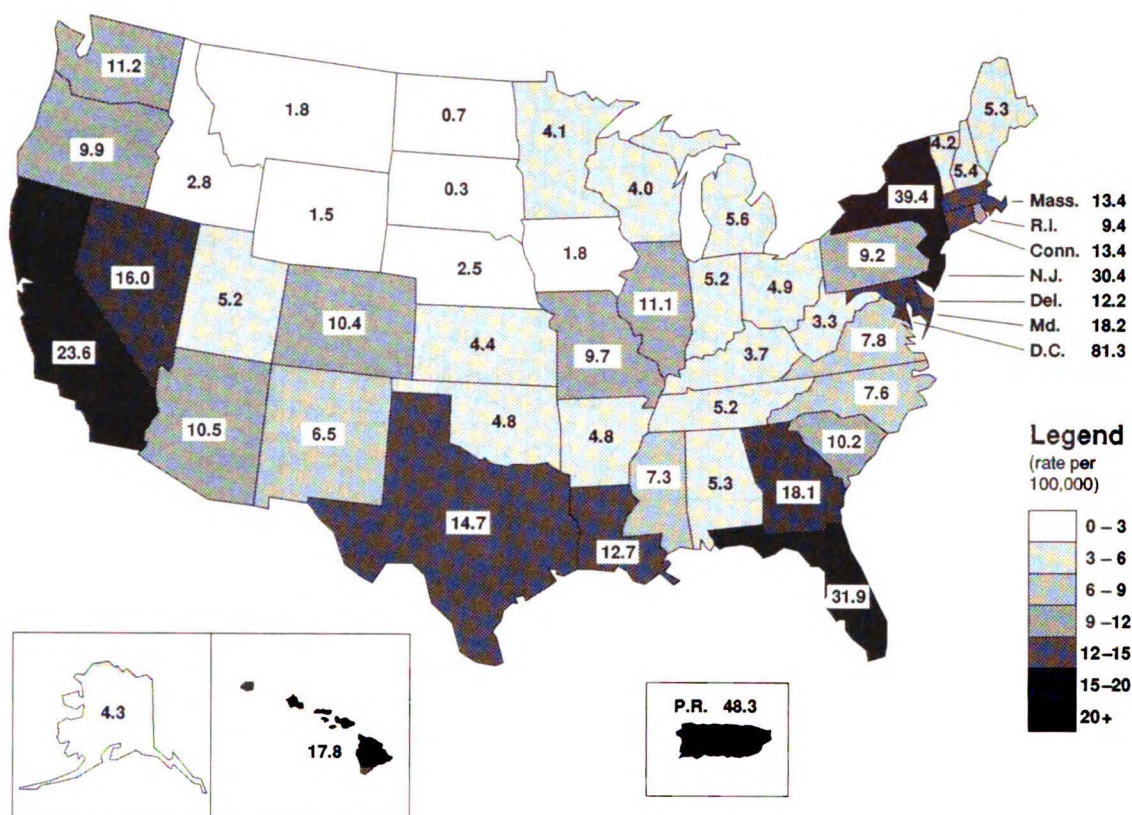


Figure 2. Adult/adolescent and pediatric AIDS cases, reported May 1989 through April 1990, United States

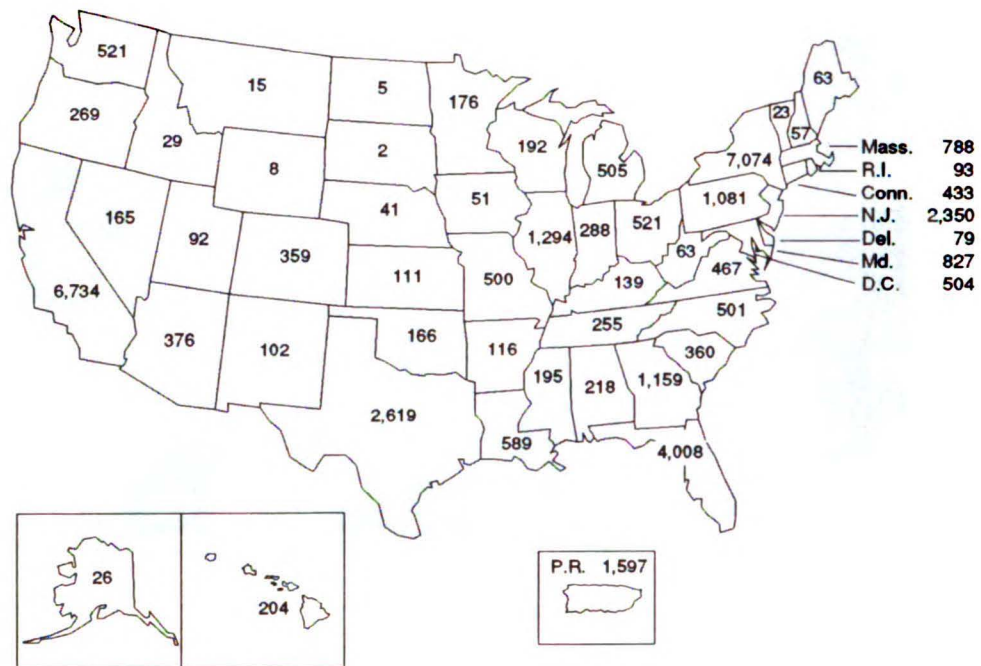


Figure 3. Pediatric AIDS cases, reported May 1989 through April 1990, United States

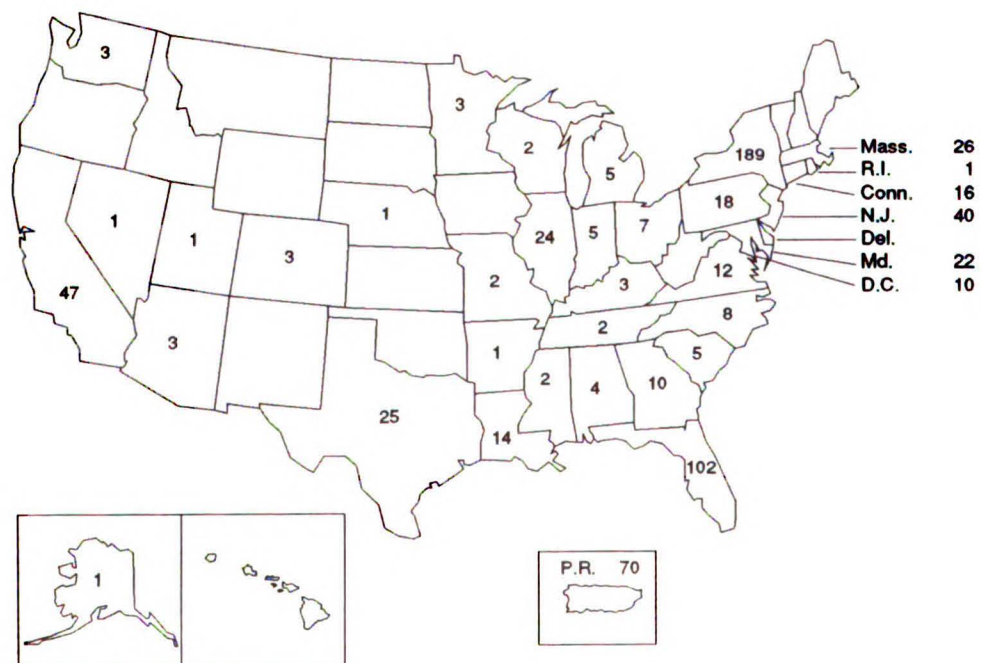


Table 1. AIDS cases and annual rates per 100,000 population, by state, reported May 1988 through April 1989, May 1989 through April 1990; and cumulative totals, by state and age group, through April 1990¹

State of residence	May 1988- Apr. 1989		May 1989- Apr. 1990		Cumulative totals		
	No.	Rate	No.	Rate	Adults/ adolescents	Children < 13 years old	Total
Alabama	221	5.4	218	5.3	715	17	732
Alaska	16	2.7	26	4.3	85	2	87
Arizona	259	7.4	376	10.5	1,117	7	1,124
Arkansas	77	3.2	116	4.8	306	4	310
California	5,811	20.7	6,734	23.6	25,375	174	25,549
Colorado	342	10.1	359	10.4	1,331	8	1,339
Connecticut	426	13.2	433	13.4	1,541	53	1,594
Delaware	82	12.8	79	12.2	249	4	253
District of Columbia	527	84.7	504	81.3	2,150	29	2,179
Florida	2,964	24.2	4,008	31.9	11,137	302	11,439
Georgia	977	15.5	1,159	18.1	3,388	41	3,429
Hawaii	93	8.3	204	17.8	522	2	524
Idaho	16	1.6	29	2.8	63	2	65
Illinois	986	8.5	1,294	11.1	3,863	59	3,922
Indiana	197	3.6	288	5.2	787	9	796
Iowa	56	2.0	51	1.8	179	3	182
Kansas	91	3.6	111	4.4	338	3	341
Kentucky	99	2.6	139	3.7	375	5	380
Louisiana	412	9.0	589	12.7	1,780	32	1,812
Maine	37	3.1	63	5.3	173	2	175
Maryland	625	13.9	827	18.2	2,425	58	2,483
Massachusetts	767	13.0	788	13.4	2,731	59	2,790
Michigan	476	5.2	505	5.6	1,560	24	1,584
Minnesota	180	4.2	176	4.1	675	7	682
Mississippi	153	5.7	195	7.3	469	7	476
Missouri	404	7.9	500	9.7	1,430	10	1,440
Montana	12	1.4	15	1.8	42	—	42
Nebraska	46	2.8	41	2.5	146	2	148
Nevada	135	13.4	165	16.0	490	4	494
New Hampshire	39	3.7	57	5.4	156	4	160
New Jersey	2,427	31.6	2,350	30.4	8,558	232	8,790
New Mexico	67	4.4	102	6.5	269	1	270
New York	6,594	36.8	7,074	39.4	28,672	663	29,335
North Carolina	350	5.4	501	7.6	1,300	26	1,326
North Dakota	6	0.9	5	0.7	18	—	18
Ohio	512	4.8	521	4.9	1,802	27	1,829
Oklahoma	173	5.1	166	4.8	556	9	565
Oregon	182	6.7	269	9.9	799	3	802
Pennsylvania	964	8.2	1,081	9.2	3,577	63	3,640
Rhode Island	94	9.6	93	9.4	314	7	321
South Carolina	197	5.6	360	10.2	796	19	815
South Dakota	7	1.0	2	0.3	17	—	17
Tennessee	302	6.2	255	5.2	835	12	847
Texas	2,343	13.4	2,619	14.7	8,982	76	9,058
Utah	77	4.5	92	5.2	275	6	281
Vermont	12	2.2	23	4.2	62	1	63
Virginia	417	7.0	467	7.8	1,556	32	1,588
Washington	453	9.9	521	11.2	1,741	11	1,752
West Virginia	27	1.4	63	3.3	135	2	137
Wisconsin	114	2.4	192	4.0	509	3	512
Wyoming	13	2.5	8	1.5	31	—	31
U.S. total	31,857	13.0	36,813	14.8	126,402	2,126	128,528
Guam	1	0.8	2	1.5	7	—	7
Pacific Islands, U.S.	1	0.7	—	—	1	—	1
Puerto Rico	1,390	42.2	1,597	48.3	3,772	128	3,900
Virgin Islands, U.S.	39	34.5	19	16.5	70	4	74
Total	33,288	13.3	38,431	15.3	130,252	2,258	132,510

¹ During April 1990, 4,125 cases and 2,429 deaths among adults/adolescents and 66 cases and 29 deaths among children were reported to CDC.

Table 2. AIDS cases and annual rates per 100,000 population, by metropolitan area with 500,000 or more population, reported May 1988 through April 1989, May 1989 through April 1990; and cumulative totals, by area and age group, through April 1990

Metropolitan area of residence	May 1988- Apr. 1989		May 1989- Apr. 1990		Cumulative totals		
	No.	Rate	No.	Rate	Adults/ adolescents	Children <13 years old	Total
Akron, Ohio	32	5.0	19	3.0	86	—	86
Albany-Schenectady, N.Y.	65	7.7	83	9.8	270	3	273
Allentown, Pa.	35	5.3	45	6.8	123	4	127
Anaheim, Calif.	252	11.3	289	12.7	1,012	7	1,019
Atlanta, Ga.	744	27.6	876	31.7	2,562	23	2,585
Austin, Tex.	105	13.0	247	29.5	557	5	562
Bakersfield, Calif.	19	3.6	36	6.6	86	—	86
Baltimore, Md.	381	16.7	515	22.4	1,381	43	1,424
Baton Rouge, La.	41	7.2	57	9.8	158	—	158
Bergen-Passaic, N.J.	268	20.6	253	19.4	1,089	25	1,114
Birmingham, Ala.	75	8.2	74	8.0	230	6	236
Boston, Mass.	622	16.6	600	16.0	2,157	45	2,202
Bridgeport, Conn.	135	16.2	122	14.6	443	17	460
Buffalo, N.Y.	51	5.4	82	8.7	210	1	211
Charleston, S.C.	39	7.6	79	15.0	180	—	180
Charlotte, N.C.	80	7.3	98	8.8	271	5	276
Chicago, Ill.	831	13.3	1,072	17.1	3,263	44	3,307
Cincinnati, Ohio	66	4.6	82	5.8	258	3	261
Cleveland, Ohio	116	6.3	137	7.5	477	7	484
Columbus, Ohio	132	10.0	109	8.2	403	3	406
Dallas, Tex.	571	22.5	585	22.5	2,178	8	2,186
Dayton, Ohio	54	5.8	59	6.4	183	3	186
Denver, Colo.	283	16.6	285	16.4	1,082	5	1,087
Detroit, Mich.	333	7.8	354	8.3	1,096	17	1,113
El Paso, Tex.	13	2.3	38	6.5	82	1	83
Fort Lauderdale, Fla.	398	33.5	902	74.6	2,065	39	2,104
Fort Worth, Tex.	151	11.3	130	9.4	468	6	474
Fresno, Calif.	45	7.3	62	9.8	158	2	160
Gary, Ind.	13	2.1	32	5.3	72	—	72
Grand Rapids, Mich.	29	4.4	20	3.0	74	1	75
Greensboro, N.C.	54	5.9	76	8.2	193	4	197
Greenville, S.C.	22	3.6	36	5.8	92	—	92
Harrisburg, Pa.	41	7.1	50	8.6	139	4	143
Hartford, Conn.	122	11.2	152	13.9	435	10	445
Honolulu, Hawaii	78	9.0	129	14.7	392	2	394
Houston, Tex.	885	25.9	992	28.4	3,818	31	3,849
Indianapolis, Ind.	96	7.8	150	12.2	362	3	365
Jacksonville, Fla.	131	14.7	250	27.5	568	12	580
Jersey City, N.J.	441	79.3	311	55.9	1,449	34	1,483
Kansas City, Mo.	229	14.9	267	17.2	781	3	784
Knoxville, Tenn.	29	4.8	20	3.3	88	—	88
Las Vegas, Nev.	91	15.0	122	19.6	353	4	357
Little Rock, Ark.	28	5.4	57	11.0	133	1	134
Los Angeles, Calif.	1,943	22.9	2,207	25.7	8,784	74	8,858
Louisville, Ky.	47	4.9	57	5.9	162	2	164
Memphis, Tenn.	97	10.1	80	8.2	268	4	272
Miami, Fla.	788	43.7	942	51.8	3,143	126	3,269
Middlesex, N.J.	211	22.0	185	19.1	682	23	705
Milwaukee, Wis.	1	0.1	35	2.6	42	—	42
Minneapolis-Saint Paul, Minn.	155	6.6	159	6.7	584	6	590
Monmouth-Ocean City, N.J.	160	16.5	187	19.0	522	19	541
Nashville, Tenn.	116	12.2	81	8.4	274	6	280
Nassau-Suffolk, N.Y.	371	13.9	374	14.0	1,376	37	1,413
New Haven, Conn.	125	15.9	120	15.2	482	26	508
New Orleans, La.	243	18.0	342	25.1	1,128	18	1,146
New York, N.Y.	5,594	65.4	5,962	69.4	24,890	600	25,490
Newark, N.J.	1,019	54.2	999	53.1	3,622	99	3,721
Norfolk, Va.	85	6.2	109	7.8	330	7	337

Table 2. AIDS cases and annual rates per 100,000 population, by metropolitan area with 500,000 or more population, reported May 1988 through April 1989, May 1989 through April 1990; and cumulative totals, by area and age group, through April 1990 — Continued

Metropolitan area of residence	May 1988- Apr. 1989		May 1989- Apr. 1990		Cumulative totals		
	No.	Rate	No.	Rate	Adults/ adolescents	Children <13 years old	Total
Oakland, Calif.	377	18.9	433	21.4	1,558	10	1,568
Oklahoma City, Okla.	18	1.8	18	1.7	152	—	152
Omaha, Neb.	32	5.1	33	5.2	105	1	106
Orlando, Fla.	190	19.6	185	18.5	546	7	553
Oxnard-Ventura, Calif.	45	7.0	37	5.7	125	—	125
Philadelphia, Pa.	738	15.3	739	15.3	2,680	41	2,721
Phoenix, Ariz.	183	8.8	284	13.3	821	4	825
Pittsburgh, Pa.	97	4.7	171	8.3	470	2	472
Portland, Oreg.	139	11.8	210	17.8	629	1	630
Providence, R.I.	86	9.6	88	9.8	292	6	298
Raleigh-Durham, N.C.	74	10.8	122	17.5	292	8	300
Richmond, Va.	87	10.5	107	12.8	310	7	317
Riverside-San Bernardino, Calif.	175	8.2	241	10.9	750	14	764
Rochester, N.Y.	86	8.7	81	8.2	309	1	310
Sacramento, Calif.	186	13.7	138	10.0	531	5	536
Saint Louis, Mo.	178	7.3	193	7.9	597	6	603
Salt Lake City, Utah	64	5.9	77	7.0	238	4	242
San Antonio, Tex.	300	22.6	204	15.0	635	9	644
San Diego, Calif.	442	19.2	667	28.3	1,902	16	1,918
San Francisco, Calif.	1,689	102.6	1,904	114.3	8,101	15	8,116
San Jose, Calif.	145	9.9	138	9.3	575	6	581
San Juan, P.R.	910	58.5	990	63.4	2,351	87	2,438
Scranton, Pa.	19	2.6	35	4.9	96	3	99
Seattle, Wash.	332	18.4	398	21.8	1,320	9	1,329
Springfield, Mass.	38	6.5	61	10.4	142	7	149
Syracuse, N.Y.	24	3.6	48	7.3	135	4	139
Tacoma, Wash.	28	5.1	40	7.3	117	1	118
Tampa, Fla.	460	22.9	376	18.3	1,247	21	1,268
Toledo, Ohio	23	3.8	27	4.5	84	1	85
Tucson, Ariz.	49	7.9	56	8.9	204	2	206
Tulsa, Okla.	60	7.9	50	6.4	161	2	163
Washington, D.C.	885	24.3	898	24.4	3,628	53	3,681
West Palm Beach, Fla.	312	38.7	345	41.4	1,115	46	1,161
Wilmington, Del.	69	12.4	66	11.7	206	3	209
Worcester, Mass.	40	6.0	30	4.5	128	3	131
Metropolitan area subtotal¹	27,761	19.4	31,283	21.7	110,318	1,883	112,201
All other areas	5,527	5.2	7,148	6.7	19,934	375	20,309
Total	33,288	13.3	38,431	15.3	130,252	2,258	132,510

¹ Only includes data from metropolitan areas which have populations of 500,000 or more.

Table 3. AIDS cases by age group, exposure category, and sex, reported May 1988 through April 1989, May 1989 through April 1990; and cumulative totals, by age group and exposure category, through April 1990, United States

Adult/adolescent exposure category	Males		Females		Totals		
	May 1988-Apr. 1989	May 1989-Apr. 1990	May 1988-Apr. 1989	May 1989-Apr. 1990	May 1988-Apr. 1989	May 1989-Apr. 1990	Cumulative total ¹
	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)
Male homosexual/bisexual contact	18,804 (64)	21,256 (63)	—	—	18,804 (58)	21,256 (56)	78,212 (60)
Intravenous (IV) drug use (female and heterosexual male)	5,963 (20)	6,868 (20)	1,789 (53)	2,013 (49)	7,752 (24)	8,881 (24)	27,842 (21)
Male homosexual/bisexual contact and IV drug use	2,161 (7)	2,227 (7)	—	—	2,161 (7)	2,227 (6)	8,948 (7)
Hemophilia/coagulation disorder	305 (1)	279 (1)	3 (0)	9 (0)	308 (1)	288 (1)	1,171 (1)
Heterosexual contact:	654 (2)	905 (3)	1,071 (32)	1,356 (33)	1,725 (5)	2,261 (6)	6,532 (5)
<i>Sex with IV drug user</i>	302	413	685	865	987	1,278	3,379
<i>Sex with bisexual male</i>	—	—	100	101	100	101	392
<i>Sex with person with hemophilia</i>	1	3	14	21	15	24	60
<i>Born in Pattern-II country</i>	238	318	125	144	363	462	1,821
<i>Sex with person born in Pattern-II country</i>	16	13	8	17	24	30	90
<i>Sex with transfusion recipient with HIV infection</i>	10	15	20	23	30	38	99
<i>Sex with HIV-infected person, risk not specified</i>	87	143	119	185	206	328	691
Receipt of blood transfusion, blood components, or tissue ³	486 (2)	478 (1)	344 (10)	321 (8)	830 (3)	799 (2)	3,119 (2)
Other/undetermined ⁴	933 (3)	1,636 (5)	180 (5)	393 (10)	1,113 (3)	2,029 (5)	4,428 (3)
Adult/adolescent subtotal	29,306 (100)	33,649 (100)	3,387 (100)	4,092 (100)	32,693 (100)	37,741 (100)	130,252 (100)
Pediatric (<13 years old) exposure category							
Hemophilia/coagulation disorder	32 (10)	28 (8)	1 (0)	—	33 (6)	28 (4)	114 (5)
Mother with/at risk for HIV infection:	244 (76)	305 (82)	250 (91)	292 (92)	494 (83)	597 (87)	1,863 (83)
<i>IV drug use</i>	128	148	119	132	247	280	
<i>Sex with IV drug user</i>	945	51	78	49	68	100	395
<i>Sex with bisexual male</i>	7	4	5	7	12	11	42
<i>Sex with person with hemophilia</i>	—	—	1	—	1	—	7
<i>Born in Pattern-II country</i>	25	26	24	22	49	48	191
<i>Sex with person born in Pattern-II country</i>	1	—	—	3	1	3	7
<i>Sex with transfusion recipient with HIV infection</i>	2	1	3	3	5	4	10
<i>Sex with HIV-infected person, risk not specified</i>	9	14	13	14	22	28	75
<i>Receipt of blood transfusion, blood components, or tissue</i>	1	6	8	6	9	12	38
<i>Has HIV infection, risk not specified</i>	20	28	28	37	48	65	153
Receipt of blood transfusion, blood components, or tissue	36 (11)	27 (7)	16 (6)	13 (4)	52 (9)	40 (6)	226 (10)
Undetermined	8 (3)	11 (3)	8 (3)	14 (4)	16 (3)	25 (4)	55 (2)
Pediatric subtotal	320 (100)	371 (100)	275 (100)	319 (100)	595 (100)	690 (100)	2,258 (100)
Total	29,626	34,020	3,662	4,411	33,288	38,431	132,510

¹ Includes 3 patients known to be infected with human immunodeficiency virus type 2 (HIV-2). See MMWR 1989;38:572-580

² See technical notes.

³ Includes 8 transfusion recipients who received blood screened for HIV antibody, and 1 tissue recipient.

⁴ "Other" refers to 2 health-care workers who seroconverted to HIV and developed AIDS after occupational exposure to HIV-infected blood. "Undetermined" refers to patients whose mode of exposure to HIV is unknown. This includes patients under investigation; patients who died, were lost to follow-up, or refused interview; and patients whose mode of exposure to HIV remains undetermined after investigation. See Figure 4.

Table 4. AIDS cases by age group, exposure category, and race/ethnicity, reported through April 1990, United States

Adult/adolescent exposure category	White, not Hispanic	Black, not Hispanic	Hispanic	Asian/Pacific Islander	American Indian/Alaskan Native	Total ⁴
	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)
Male homosexual/bisexual contact	56,169 (77)	12,927 (36)	8,257 (41)	600 (74)	90 (52)	78,212 (60)
Intravenous (IV) drug use (female and heterosexual male)	5,617 (8)	13,888 (39)	8,199 (41)	32 (4)	30 (17)	27,842 (21)
Male homosexual/bisexual contact and IV drug use	5,261 (7)	2,349 (7)	1,289 (6)	13 (2)	24 (14)	8,948 (7)
Hemophilia/coagulation disorder	980 (1)	78 (0)	88 (0)	15 (2)	6 (3)	1,171 (1)
Heterosexual contact:	1,339 (2)	4,036 (11)	1,106 (5)	31 (4)	8 (5)	6,532 (5)
<i>Sex with IV drug user</i>	750	1,713	894	12	4	3,379
<i>Sex with bisexual male</i>	210	126	48	6	1	392
<i>Sex with person with hemophilia</i>	52	6	1	1	—	60
<i>Born in Pattern-II¹ country</i>	3	1,800	10	4	—	1,821
<i>Sex with person born in Pattern-II country</i>	27	58	5	—	—	90
<i>Sex with transfusion recipient with HIV infection</i>	70	17	10	1	—	99
<i>Sex with HIV-infected person, risk not specified</i>	227	316	138	7	3	691
Receipt of blood transfusion, blood components, or tissue ²	2,236 (3)	514 (1)	296 (1)	65 (8)	3 (2)	3,119 (2)
Other/undetermined ³	1,645 (2)	1,722 (5)	960 (5)	51 (6)	12 (7)	4,428 (3)
Adult/adolescent subtotal	73,247(100)	35,514 (100)	20,195(100)	807(100)	173(100)	130,252(100)
Pediatric (<13 years old) exposure category						
Hemophilia/coagulation disorder	79 (16)	15 (1)	16 (3)	3 (27)	—	114 (5)
Mother with/at risk for HIV infection:	286 (57)	1,075 (92)	489 (86)	4 (36)	5(100)	1,863 (83)
<i>IV drug use</i>	139	545	257	1	2	945
<i>Sex with IV drug user</i>	62	173	158	1	—	395
<i>Sex with bisexual male</i>	16	18	8	—	—	42
<i>Sex with person with hemophilia</i>	5	1	1	—	—	7
<i>Born in Pattern-II country</i>	2	188	1	—	—	191
<i>Sex with person born in Pattern-II country</i>	—	6	—	—	—	7
<i>Sex with transfusion recipient with HIV infection</i>	5	3	2	—	—	10
<i>Sex with HIV-infected person, risk not specified</i>	14	32	26	1	1	75
<i>Receipt of blood transfusion, blood components, or tissue</i>	14	14	10	—	—	38
<i>Has HIV infection, risk not specified</i>	29	95	26	1	2	153
Receipt of blood transfusion, blood components, or tissue	125 (25)	50 (4)	47 (8)	4 (36)	—	226 (10)
Undetermined	9 (2)	28 (2)	18 (3)	—	—	55 (2)
Pediatric subtotal	499(100)	1,168 (100)	570(100)	11(100)	5(100)	2,258(100)
Total	73,746	36,682	20,765	818	178	132,510

¹ See technical notes.

² Includes 8 transfusion recipients who received blood screened for HIV antibody, and 1 tissue recipient.

³ "Other" refers to 2 health-care workers who seroconverted to HIV and developed AIDS after occupational exposure to HIV-infected blood. "Undetermined" refers to patients whose mode of exposure to HIV is unknown. This includes patients under investigation; patients who died, were lost to follow-up, or refused interview; and patients whose mode of exposure to HIV remains undetermined after investigation. See Figure 4.

⁴ Includes 321 persons whose race/ethnicity is unknown.

Table 5. Adult/adolescent AIDS cases by sex, exposure category, and race/ethnicity, reported through April 1990, United States

Male exposure category	White, not Hispanic	Black, not Hispanic	Hispanic	Asian/Pacific Islander	American Indian/ Alaskan Native	Total ⁴
	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)
Male homosexual/bisexual contact	56,169 (80)	12,927 (44)	8,257 (47)	600 (81)	90 (62)	78,212 (66)
Intravenous (IV) drug use (heterosexual)	4,268 (6)	10,242 (35)	6,921 (39)	21 (3)	15 (10)	21,530 (18)
Male homosexual/bisexual contact and IV drug use	5,261 (8)	2,349 (8)	1,289 (7)	13 (2)	24 (16)	8,948 (8)
Hemophilia/coagulation disorder	957 (1)	74 (0)	87 (0)	15 (2)	6 (4)	1,143 (1)
Heterosexual contact:	420 (1)	2,030 (7)	217 (1)	6 (1)	1 (1)	2,678 (2)
<i>Sex with IV drug user</i>	270	545	147	1	1	964
<i>Sex with person with hemophilia</i>	4	1	—	—	—	5
<i>Born in Pattern-II¹ country</i>	2	1,318	7	3	—	1,333
<i>Sex with person born in Pattern-II country</i>	24	24	4	—	—	52
<i>Sex with transfusion recipient with HIV infection</i>	19	9	1	—	—	30
<i>Sex with HIV-infected person, risk not specified</i>	101	133	58	2	—	294
Receipt of blood transfusion, blood components, or tissue ²	1,449 (2)	273 (1)	156 (1)	42 (6)	1 (1)	1,925 (2)
Other/undetermined ³	1,411 (2)	1,262 (4)	824 (5)	44 (6)	9 (6)	3,580 (3)
Male subtotal	69,935 (100)	29,157 (100)	17,751 (100)	741 (100)	146 (100)	118,016 (100)
Female						
exposure category						
IV drug use	1,349 (41)	3,646 (57)	1,278 (52)	11 (17)	15 (56)	6,312 (52)
Hemophilia/coagulation disorder	23 (1)	4 (0)	1 (0)	—	—	28 (0)
Heterosexual contact:	919 (28)	2,006 (32)	889 (36)	25 (38)	7 (26)	3,854 (31)
<i>Sex with IV drug user</i>	480	1,168	747	11	3	2,415
<i>Sex with bisexual male</i>	210	126	48	6	1	392
<i>Sex with person with hemophilia</i>	48	5	1	1	—	55
<i>Born in Pattern-II country</i>	1	482	3	1	—	488
<i>Sex with person born in Pattern-II country</i>	3	34	1	—	—	38
<i>Sex with transfusion recipient with HIV infection</i>	51	8	9	1	—	69
<i>Sex with HIV-infected person, risk not specified</i>	126	183	80	5	3	397
Receipt of blood transfusion, blood components, or tissue	787 (24)	241 (4)	140 (6)	23 (35)	2 (7)	1,194 (10)
Other/undetermined	234 (7)	460 (7)	136 (6)	7 (11)	3 (11)	848 (7)
Female subtotal	3,312 (100)	6,357 (100)	2,444 (100)	66 (100)	27 (100)	12,236 (100)
Total	73,247	35,514	20,195	807	173	130,252

¹ See technical notes.

² Includes 8 transfusion recipients who received blood screened for HIV antibody, and 1 tissue recipient.

³ "Other" refers to 2 health-care workers who seroconverted to HIV and developed AIDS after occupational exposure to HIV-infected blood. "Undetermined" refers to patients whose mode of exposure to HIV is unknown. This includes patients under investigation; patients who died, were lost to follow-up, or refused interview; and patients whose mode of exposure to HIV remains undetermined after investigation. See Figure 4.

⁴ Includes 286 males and 30 females whose race/ethnicity is unknown.

Table 6. AIDS cases in adolescents and adults under age 25, by exposure category, reported May 1988 through April 1989, May 1989 through April 1990, and cumulative totals through April 1990, United States

Exposure category	13-19 years old			20-24 years old		
	May 1988- Apr. 1989	May 1989- Apr. 1990	Cumulative total	May 1988- Apr. 1989	May 1989- Apr. 1990	Cumulative total
	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)
Male homosexual/bisexual contact	32 (28)	33 (24)	145 (28)	819 (57)	802 (51)	3,254 (57)
Intravenous (IV) drug use (female and heterosexual male)	17 (15)	15 (11)	59 (12)	236 (16)	292 (19)	903 (16)
Male homosexual/bisexual contact and IV drug use	5 (4)	3 (2)	23 (4)	116 (8)	135 (9)	534 (9)
Hemophilia/coagulation disorder	34 (30)	39 (28)	157 (31)	41 (3)	37 (2)	148 (3)
Heterosexual contact:	13 (11)	25 (18)	62 (12)	137 (10)	175 (11)	503 (9)
<i>Sex with IV drug user</i>	7	17	37	87	96	271
<i>Sex with bisexual male</i>	—	1	3	12	6	43
<i>Sex with person with hemophilia</i>	—	1	1	4	7	14
<i>Born in Pattern-II¹</i>	3	2	13	12	26	100
<i>Sex with person born in Pattern-II country</i>	—	—	—	—	4	6
<i>Sex with transfusion recipient with HIV infection</i>	—	—	—	—	3	4
<i>Sex with HIV-infected person, risk not specified</i>	3	4	8	22	33	65
Receipt of blood transfusion, blood components, or tissue	14 (12)	3 (2)	38 (7)	25 (2)	13 (1)	86 (2)
Undetermined ²	—	19 (14)	29 (6)	57 (4)	106 (7)	242 (4)
Total	115 (100)	137 (100)	513 (100)	1,431 (100)	1,560 (100)	5,670 (100)

¹ See technical notes.

² "Undetermined" refers to patients whose mode of exposure to HIV is unknown. This includes patients under investigation; patients who died, were lost to follow-up, or refused interview; and patients whose mode of exposure to HIV remains undetermined after investigation. See Figure 4.

Table 7. AIDS cases by sex, age at diagnosis, and race/ethnicity, reported through April 1990, United States

Males	White, not Hispanic	Black, not Hispanic	Hispanic	Asian/Pacific Islander	American Indian/ Alaskan Native	Total¹
Age at diagnosis (years)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)
Under 5	172 (0)	532 (2)	257 (1)	3 (0)	2 (1)	968 (1)
5-12	133 (0)	71 (0)	48 (0)	4 (1)	—	258 (0)
13-19	201 (0)	120 (0)	72 (0)	5 (1)	3 (2)	402 (0)
20-24	2,506 (4)	1,410 (5)	861 (5)	27 (4)	9 (6)	4,823 (4)
25-29	10,658 (15)	4,781 (16)	3,097 (17)	97 (13)	30 (20)	18,696 (16)
30-34	16,532 (24)	7,532 (25)	4,657 (26)	161 (22)	40 (27)	28,987 (24)
35-39	15,378 (22)	6,812 (23)	3,949 (22)	159 (21)	24 (16)	26,394 (22)
40-44	10,402 (15)	3,866 (13)	2,435 (13)	118 (16)	18 (12)	16,886 (14)
45-49	6,210 (9)	2,116 (7)	1,221 (7)	79 (11)	13 (9)	9,661 (8)
50-54	3,483 (5)	1,197 (4)	706 (4)	39 (5)	3 (2)	5,442 (5)
55-59	2,225 (3)	733 (2)	447 (2)	26 (3)	4 (3)	3,449 (3)
60-64	1,219 (2)	374 (1)	185 (1)	8 (1)	2 (1)	1,793 (2)
65 or older	1,121 (2)	216 (1)	121 (1)	22 (3)	—	1,483 (1)
Male subtotal	70,240 (100)	29,760 (100)	18,056 (100)	748 (100)	148 (100)	119,242 (100)
Females						
Age at diagnosis (years)						
Under 5	162 (5)	499 (7)	229 (8)	1 (1)	3 (10)	895 (7)
5-12	32 (1)	66 (1)	36 (1)	3 (4)	—	137 (1)
13-19	27 (1)	64 (1)	18 (1)	1 (1)	1 (3)	111 (1)
20-24	235 (7)	403 (6)	201 (7)	3 (4)	2 (7)	847 (6)
25-29	633 (18)	1,266 (18)	586 (22)	7 (10)	4 (13)	2,504 (19)
30-34	762 (22)	1,911 (28)	666 (25)	15 (21)	10 (33)	3,372 (25)
35-39	520 (15)	1,397 (20)	483 (18)	6 (9)	5 (17)	2,417 (18)
40-44	276 (8)	636 (9)	248 (9)	13 (19)	2 (7)	1,175 (9)
45-49	150 (4)	274 (4)	108 (4)	6 (9)	—	542 (4)
50-54	118 (3)	157 (2)	53 (2)	4 (6)	1 (3)	333 (3)
55-59	134 (4)	108 (2)	36 (1)	3 (4)	—	282 (2)
60-64	126 (4)	64 (1)	21 (1)	5 (7)	1 (3)	217 (2)
65 or older	331 (9)	77 (1)	24 (1)	3 (4)	1 (3)	436 (3)
Female subtotal	3,506 (100)	6,922 (100)	2,709 (100)	70 (100)	30 (100)	13,268 (100)
Total	73,746	36,682	20,765	818	178	132,510

¹ Includes 321 persons whose race/ethnicity is unknown.

Table 8. AIDS cases, case-fatality rates, and deaths by half-year and age group, through April 1990, United States

Half-year of diagnosis	Adults/adolescents			Children <13 years old		
	Cases diagnosed during interval	Case-fatality rate	Deaths occurring during interval	Cases diagnosed during interval	Case-fatality rate	Deaths occurring during interval
Before 1981	78	83.3	30	6	66.7	1
1981 Jan.-June	91	92.3	38	9	66.7	2
July-Dec.	198	91.9	84	5	100.0	6
1982 Jan.-June	387	90.4	153	12	75.0	8
July-Dec.	668	89.4	279	15	80.0	4
1983 Jan.-June	1,256	91.4	512	32	93.8	13
July-Dec.	1,626	91.1	913	40	75.0	16
1984 Jan.-June	2,531	88.0	1,360	47	83.0	24
July-Dec.	3,319	89.0	1,901	63	73.0	24
1985 Jan.-June	4,768	87.5	2,706	97	71.1	43
July-Dec.	6,150	86.0	3,705	126	73.8	68
1986 Jan.-June	8,073	83.6	4,857	129	72.9	64
July-Dec.	9,645	80.3	6,146	169	66.3	82
1987 Jan.-June	12,366	77.7	7,115	213	59.2	113
July-Dec.	13,691	68.6	7,469	245	56.7	154
1988 Jan.-June	15,231	59.4	8,617	226	46.5	125
July-Dec.	15,325	50.9	9,714	296	39.2	148
1989 Jan.-June	16,189	38.5	10,626	272	37.9	145
July-Dec.	14,306	26.8	10,287	203	30.0	129
1990 Jan.-Apr.	4,354	14.4	2,917	53	22.6	37
Total¹	130,252	61.1	79,587	2,258	53.6	1,211

¹ Death totals include 158 adults/adolescents and 5 children known to have died, but whose date of death is unknown.

Table 9. AIDS cases by year of diagnosis and definition category, diagnosed through April 1990, United States

Definition category ¹	Year of diagnosis					Cumulative total
	Before May 1986	May 1986- Apr. 1987	May 1987- Apr. 1988	May 1988- Apr. 1989	May 1989- Apr. 1990	
	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)
Pre-1987 definition	25,464 (95)	18,533 (88)	21,755 (76)	22,226 (70)	16,446 (67)	104,424 (79)
1987 definition: ²	1,256 (5)	2,425 (12)	6,759 (24)	9,638 (30)	8,008 (33)	28,086 (21)
<i>Specific disease</i>						
<i>presumptively diagnosed</i>	668	1,308	3,694	5,419	4,527	15,616
<i>Specific disease</i>						
<i>definitively diagnosed</i>	232	315	571	615	523	2,256
<i>HIV encephalopathy</i>	97	281	870	1,161	898	3,307
<i>HIV wasting syndrome</i>	259	521	1,624	2,443	2,060	6,907
Total	26,720 (100)	20,958 (100)	28,514 (100)	31,864 (100)	24,454 (100)	132,510 (100)

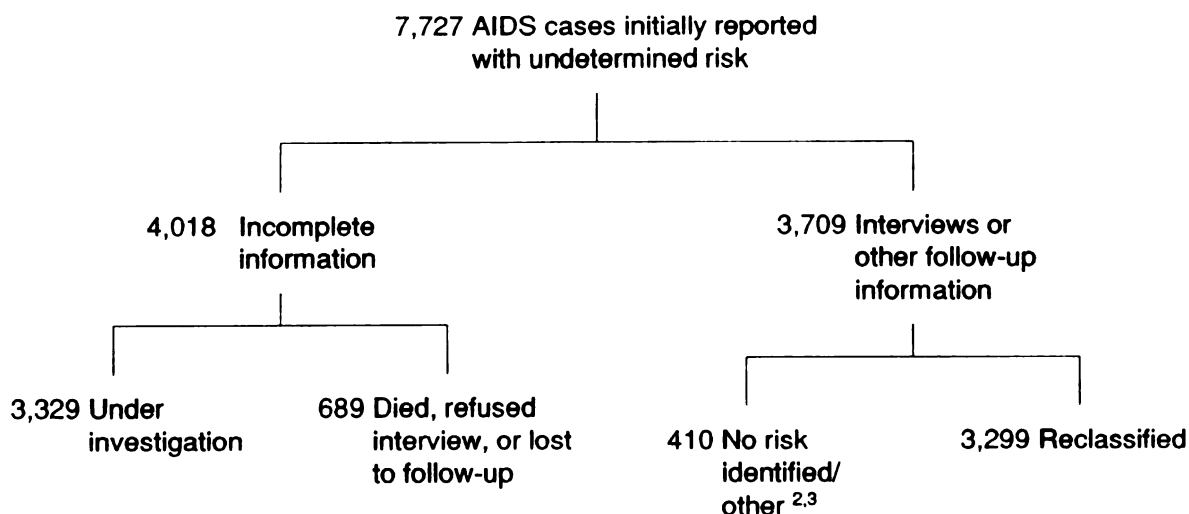
¹ Persons who meet the criteria for more than one definition category are classified in the definition category listed first.

² Persons who meet only the 1987 AIDS case definition and whose date of diagnosis is before September 1987 were diagnosed retrospectively.

Table 10. Adult/adolescent AIDS cases by single and multiple exposure categories, reported through April 1990, United States

Exposure category	AIDS cases	
	No.	(%)
Single mode of exposure		
Male homosexual/bisexual contact	75,086	(58)
Intravenous (IV) drug use (female and heterosexual male)	23,863	(18)
Hemophilia/coagulation disorder	712	(1)
Heterosexual contact	6,225	(5)
Receipt of transfusion of blood, blood component, or tissue	3,119	(2)
Other/undetermined	4,428	(3)
Single mode of exposure subtotal	113,433	(87)
Multiple modes of exposure		
Male homosexual/bisexual contact; IV drug use	8,080	(6)
Male homosexual/bisexual contact; hemophilia	29	(0)
Male homosexual/bisexual contact; heterosexual contact	1,540	(1)
Male homosexual/bisexual contact; receipt of transfusion	1,461	(1)
IV drug use; hemophilia	30	(0)
IV drug use; heterosexual contact	3,117	(2)
IV drug use; receipt of transfusion	630	(0)
Hemophilia; heterosexual contact	5	(0)
Hemophilia; receipt of transfusion	444	(0)
Heterosexual contact; receipt of transfusion	307	(0)
Male homosexual/bisexual contact; IV drug use; hemophilia	10	(0)
Male homosexual/bisexual contact; IV drug use; heterosexual contact	581	(0)
Male homosexual/bisexual contact; IV drug use; receipt of transfusion	239	(0)
Male homosexual/bisexual contact; hemophilia; heterosexual contact	2	(0)
Male homosexual/bisexual contact; hemophilia; receipt of transfusion	16	(0)
Male homosexual/bisexual contact; heterosexual contact; receipt of transfusion	78	(0)
IV drug use; hemophilia; heterosexual contact	2	(0)
IV drug use; hemophilia; receipt of transfusion	16	(0)
IV drug use; heterosexual contact; receipt of transfusion	179	(0)
Hemophilia; heterosexual contact; receipt of transfusion	10	(0)
Male homosexual/bisexual contact; IV drug use; hemophilia; receipt of transfusion	8	(0)
Male homosexual/bisexual contact; IV drug use; heterosexual contact; receipt of transfusion	30	(0)
IV drug use; hemophilia; heterosexual contact; receipt of transfusion	5	(0)
Multiple modes of exposure subtotal	16,819	(13)
Total	130,252	(100)

Figure 4. Results of investigations of adult/adolescent AIDS cases with undetermined risk, reported through April 1990¹



¹ Excludes 55 children under 13 years of age who have an undetermined risk: 48 children are under investigation and 7 have died, refused interview, or were lost to follow-up. An additional 92 children who were initially reported with an undetermined risk have been reclassified after investigation.

² **Health-care workers.** 2 of the 410 adults/adolescents are classified as "other" and are health-care workers who seroconverted to HIV and developed AIDS after occupational exposure to HIV-infected blood. For the remaining 408, the mode of exposure to HIV remains undetermined after investigation. 66 of these are health-care workers, 59 of whom responded to a standardized questionnaire. 35 (59%) reported needlesticks and/or mucous membrane exposures to blood and other body fluids of patients. None of the source patients was known to be infected with HIV at the time of the exposure and none of the health-care workers was evaluated at the time of the exposure to document seroconversion to HIV antibody. See *MMWR*, "Update: Acquired Immunodeficiency Syndrome and Human Immunodeficiency Virus Infection Among Health-Care Workers," (April 22, 1988)37:229-234,239.

³ **Heterosexual transmission.** 350 of the 408 patients who had no risk identified after follow-up responded to a standardized questionnaire; 116 (37%) of 313 persons responding to questions related to sexually transmitted disease gave a history of such disease and 75 (34%) of 218 interviewed men reported sexual contact with a prostitute. Some of these persons may represent unreported or unrecognized heterosexual transmission of HIV. See *MMWR*, "Update: Heterosexual Transmission of AIDS and HIV Infection — U.S.," (June 23, 1989) 38:423-424,429-434.

Technical notes

Surveillance and reporting of AIDS

All 50 states, the District of Columbia, U.S. dependencies and possessions, and independent nations in free association with the U.S.¹ report AIDS cases to CDC using a uniform case definition and case report form. The original definition was modified in 1985 (*MMWR* 1985;34:373-5) and again in 1987 (*MMWR* 1987;36 [suppl. no. 1S]:1S-15S). The revisions incorporated a broader range of AIDS-indicator diseases and conditions and used human immunodeficiency virus (HIV) diagnostic tests to improve the sensitivity and specificity of the definition. For persons with laboratory-confirmed HIV infection, the 1987 revision incorporated HIV encephalopathy, wasting syndrome, and other indicator diseases that are diagnosed presumptively (i.e., without confirmatory laboratory evidence of the opportunistic disease). AIDS cases that meet the criteria of both the pre-1987 and 1987 definitions are classified in the pre-1987 definition category. Compared with patients who meet the pre-1987 case definition, a higher proportion of patients who meet only the 1987 case definition were female, black, or Hispanic, or were intravenous drug users (*MMWR* 1989;38:229-36).

Each issue of this update includes information received and tabulated by CDC through the last day of the previous month. Data are tabulated by date of report to CDC unless otherwise noted. Data for U.S. dependencies and possessions and for associated independent nations are included in the totals.

Age group tabulations are based on the person's age at diagnosis of AIDS: adult/adolescent cases include persons 13 years of age and older; pediatric cases include children under 13 years of age. Age group tabulations in Table 13 (only included in the year-end edition) are based on age at death.

Metropolitan areas are defined as the Metropolitan Statistical Areas (MSA) for all areas except the 6 New England states. For these states, the New England County Metropolitan Areas (NECMA) are used. Metropolitan areas are named for a central

city in the MSA or NECMA, may include several counties, and may cross state boundaries. For example, AIDS cases and annual rates presented for the District of Columbia in Table 1 include only persons residing within the geographic boundaries of the District. AIDS cases and annual rates for Washington, D.C., in Table 2 include persons residing within several counties in the metropolitan area. State or metropolitan area data tabulations are based on the person's residence at diagnosis of the first AIDS-indicator disease(s).

Data in this report are provisional. Fifty percent of patients are reported to CDC within 3 months of diagnosis. However, reporting delays vary widely and have been as long as several years for some cases. The median delay in reporting appears to have increased, from about 2 months in 1982 to about 3 months in 1988; however, recent analyses suggests that reporting delay may be decreasing.

Completeness of reporting of diagnosed cases to state and local health departments varies by geographic region and patient population; however, mortality studies suggest that 70 to 90 percent of HIV-related deaths in men 25 to 44 years old are identified through national surveillance of AIDS (*MMWR* 1989;38:561-3). In addition, multiple routes of exposure, opportunistic diseases diagnosed after the initial case report was submitted to CDC, and vital status may not be determined or reported for all cases. Caution should be used in interpreting case-fatality rates because reporting of deaths is known to be incomplete.

Exposure categories

For surveillance purposes, AIDS cases are counted only once in a hierarchy of exposure categories. Persons with more than one reported mode of exposure to HIV are classified in the exposure category listed first in the hierarchy, except for persons with a history of both homosexual/bisexual contact and intravenous drug use. They make up a separate exposure category.

"Heterosexual contact" cases include persons who report either specific heterosexual contact with a person with, or at increased risk for, HIV infection

¹Included among the dependencies, possessions, and independent nations are Puerto Rico, the U.S. Virgin Islands, Guam, American Samoa, the Republic of Palau, the Republic of the Marshall Islands, the Commonwealth of the Northern Mariana Islands, and the Federated States of Micronesia. The latter 5 comprise the category "Pacific Islands, U.S." listed in Table 1.

(e.g., an intravenous drug user), or persons presumed to have acquired HIV infection through heterosexual contact because they were born in countries with a distinctive pattern of transmission termed "Pattern II" by the World Health Organization (*MMWR* 1988;37:286-8,293-5). Pattern II transmission is observed in areas of central, eastern, and southern Africa and in some Caribbean countries. In these countries, most of the reported cases occur in heterosexuals and the male-to-female ratio is approximately 1:1. Intravenous drug use and homosexual transmission either do not occur or occur at a low level.

"Undetermined" cases are persons with no reported history of exposure to HIV through any of the routes listed in the hierarchy of exposure categories. Undetermined cases include persons who are currently under investigation by local health department officials; persons whose exposure history is incomplete because of death, refusal to be interviewed, or loss to follow-up; and persons who were interviewed or for whom other follow-up information was available and no exposure mode was identified. Persons who have an exposure mode identified at the time of follow-up are reclassified into the appropriate exposure category.

Rates

Rates are on an annual basis per 100,000 population. The denominator for computing the rates is based on population estimates derived from 1980 census data and post-census population estimates. Each 12-month rate is the number of cases for a 12-month period divided by the estimated midyear 1988 or 1989 population multiplied by 100,000.

The denominators for computing race-specific rates (Table 9, included only in the year-end edition) are based on 1988 census estimates, the latest which contain racial breakdowns. Race-specific rates are the number of cases reported for a particular race/ethnicity during the preceding 12-month period, divided by the 1988 census population for that race/ethnicity, multiplied by 100,000.

Case-fatality rates are on a semiannual basis by date of diagnosis. Each 6-month case-fatality rate is the number of fatal cases reported, divided by the number of total cases diagnosed in that period, multiplied by 100.

Trends in AIDS incidence

Tabulations of AIDS cases by date of report give a general description of AIDS cases, but analyses by date of diagnosis give a more accurate description of trends. Delays in reporting, however, can have a substantial impact on tabulated numbers of cases diagnosed in recent time periods. About half of all cases are reported within 3 months of diagnosis, but about 15% are reported more than 1 year after diagnosis. Delays are substantially longer for pediatric cases and for transfusion-associated cases in adults.

Figure 5 (included only in the year-end report) shows trends in AIDS incidence by month of diagnosis. The points on the plot show the estimated numbers of cases diagnosed, after adjusting for estimated reporting delays. The smooth curve is computed using the Lowess procedure (J.M. Chamber, W.S. Cleveland, B. Kleiner, and P.A. Tukey. *Graphical Methods for Data Analysis*. Duxbury Press, Boston, 1983, Chapter 4).

Reporting delays were estimated by a maximum likelihood statistical procedure for each HIV exposure category (J.M. Karon, O.J. Devine, and W.M. Morgan "Predicting AIDS incidence by extrapolating from recent trends." In: C. Castillo-Chavex, ed. *Mathematical and Statistical Approaches to AIDS Epidemiology. Lecture Notes in Biomathematics*, vol. 83, Springer Verlag, Berlin, 1989). The adjusted incidence used in Figure 5 is the sum of the adjusted incidences for each HIV exposure group.

The Lowess procedure makes no assumption about the overall trends in the data. A fitted value is computed for each month by weighted least squares regression using only the adjusted number of cases diagnosed during an interval about the month (in Figure 5, the 20% of months closest to the chosen month); the weights decrease for times further from the chosen month. The procedure assumes that incidence during the interval about each month is approximately a linear function of time. Lowess tends to produce a curve that is linear at each end, as observed in the figure; predictions of future numbers of cases should not be made by extrapolating the Lowess curve.

The Lowess curve should be considered a description of the overall trend in AIDS cases. This curve emphasizes that the rate of increase in incidence slowed during the middle of 1987. See *MMWR* 1990;39:81-86.