

HIV/AIDS

SURVEILLANCE

U.S. AIDS cases reported through March 1990

Issued April 1990

Contents

Figure 1. AIDS annual rates per 100,000 population	3
Figure 2. Adult/adolescent and pediatric AIDS cases	4
Figure 3. Pediatric AIDS cases	4
Table 1. AIDS cases and annual rates per 100,000 population, by state.....	5
Table 2. AIDS cases and annual rates per 100,000 population, by metropolitan area with 500,000 or more population.....	6
Table 3. AIDS cases by age group, exposure category, sex, and year of report.....	8
Table 4. AIDS cases by age group, exposure category, and race/ethnicity	9
Table 5. Adult/adolescent AIDS cases by sex, exposure category, and race/ethnicity	10
Table 6. AIDS cases in adolescents and adults under age 25, by exposure category and year of report	11
Table 7. AIDS cases by sex, age at diagnosis, and race/ethnicity	12
Table 8. AIDS cases, case-fatality rates, and deaths, by half-year and age group.....	13
Table 9. AIDS cases by year of diagnosis and definition category.....	14
Table 10. Adult/adolescent AIDS cases by single and multiple exposure categories	15
Figure 4. Results of investigations of AIDS cases with undetermined risk.....	16
Technical notes	17

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

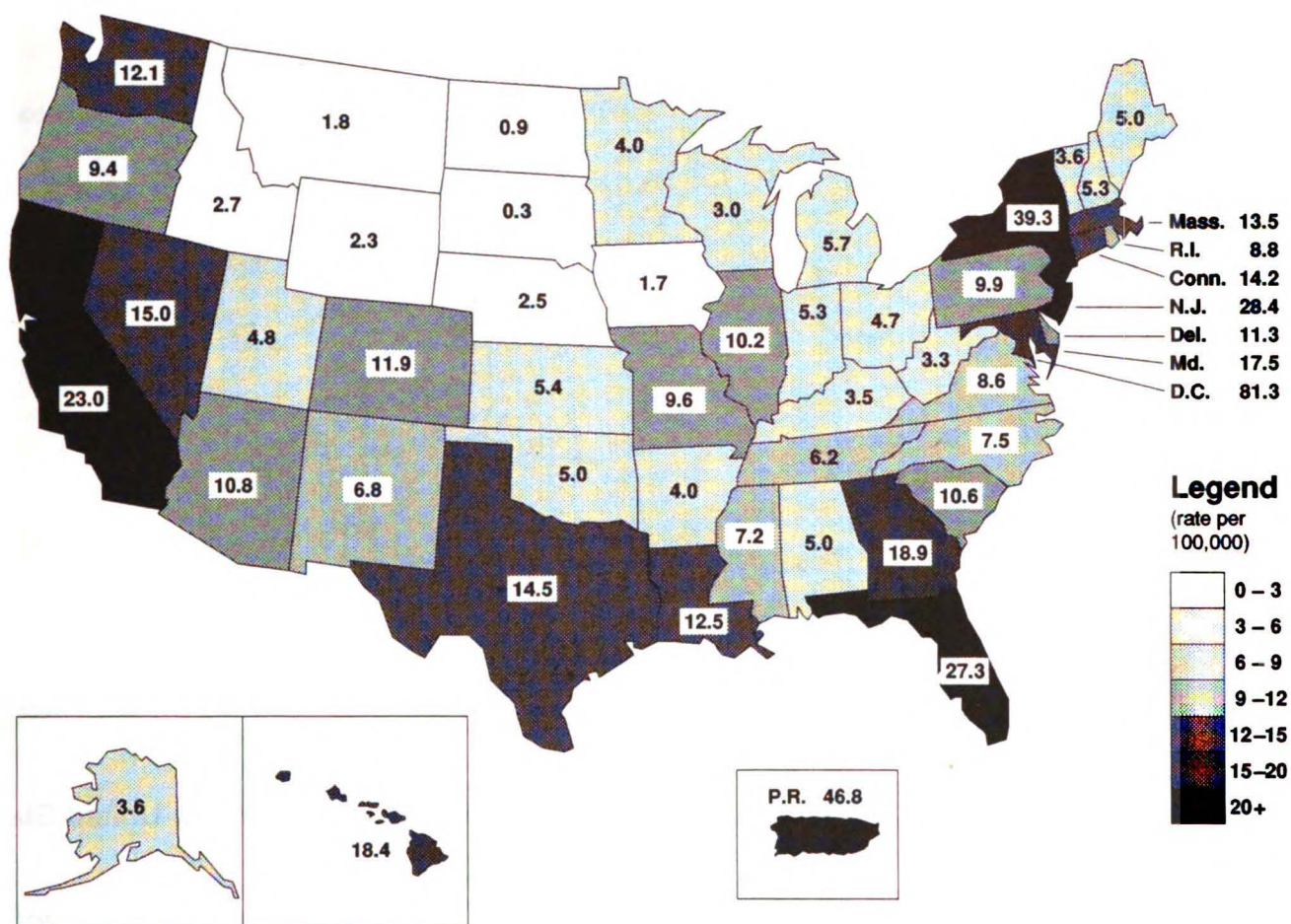


Figure 2. Adult/adolescent and pediatric AIDS cases, reported April 1989 through March 1990, United States

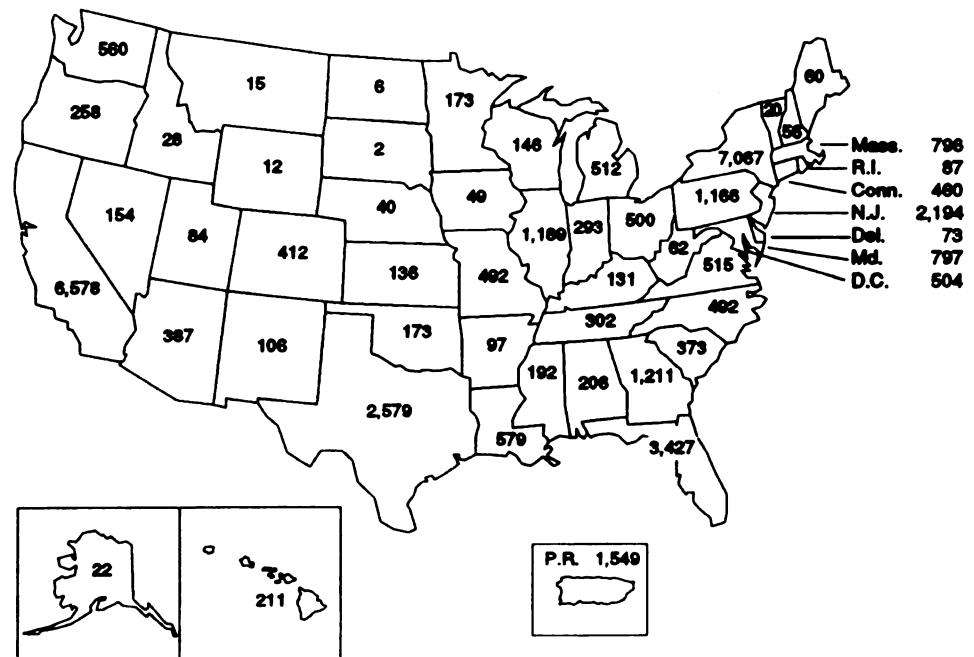


Figure 3. Pediatric AIDS cases, reported April 1989 through March 1990, United States

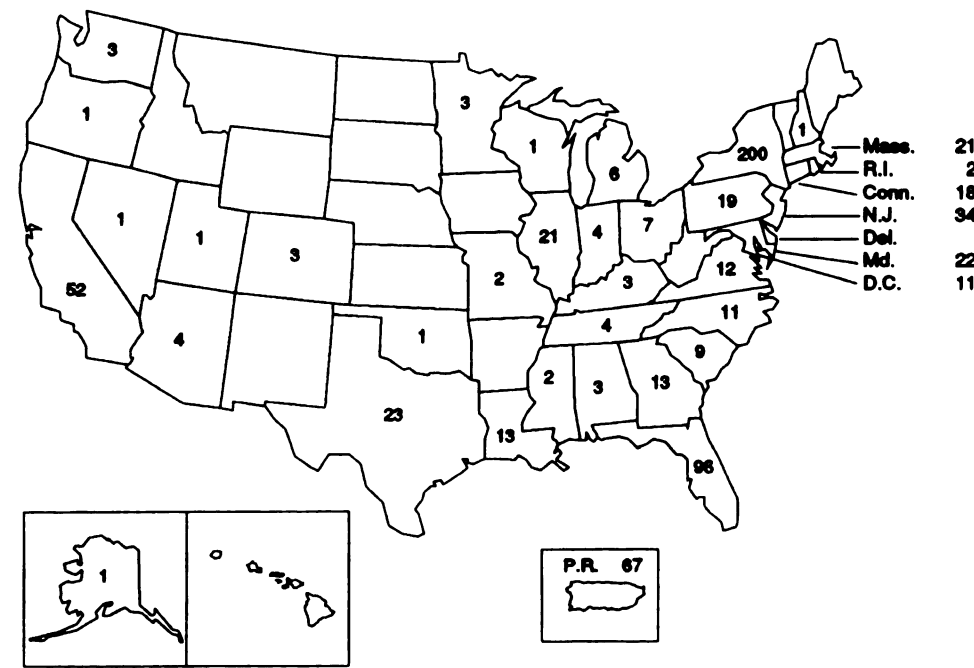


Table 1. AIDS cases and annual rates per 100,000 population, by state, reported April 1988 through March 1989, April 1989 through March 1990; and cumulative totals, by state and age group, through March 1990

State of residence	Apr. 1988- Mar. 1989		Apr. 1989- Mar. 1990		Cumulative totals		
	No.	Rate	No.	Rate	Adults/ adolescents	Children < 13 years old	Total
Alabama	221	5.4	206	5.0	688	16	704
Alaska	16	2.7	22	3.6	81	2	83
Arizona	231	6.6	387	10.8	1,091	7	1,098
Arkansas	75	3.1	97	4.0	287	3	290
California	5,803	20.7	6,578	23.0	24,654	172	24,826
Colorado	295	8.7	412	11.9	1,310	8	1,318
Connecticut	432	13.4	460	14.2	1,533	53	1,586
Delaware	82	12.8	73	11.3	243	4	247
District of Columbia	534	85.8	504	81.3	2,096	29	2,125
Florida	2,941	24.0	3,427	27.3	10,282	280	10,562
Georgia	969	15.4	1,211	18.9	3,387	41	3,428
Hawaii	94	8.4	211	18.4	521	2	523
Idaho	12	1.2	28	2.7	58	2	60
Illinois	999	8.6	1,189	10.2	3,673	55	3,728
Indiana	179	3.2	293	5.3	763	8	771
Iowa	53	1.9	49	1.7	171	3	174
Kansas	69	2.8	136	5.4	337	3	340
Kentucky	97	2.6	131	3.5	360	5	365
Louisiana	415	9.0	579	12.5	1,750	31	1,781
Maine	37	3.1	60	5.0	167	2	169
Maryland	607	13.5	797	17.5	2,342	55	2,397
Massachusetts	745	12.7	796	13.5	2,682	54	2,736
Michigan	463	5.1	512	5.7	1,534	23	1,557
Minnesota	185	4.3	173	4.0	663	7	670
Mississippi	143	5.4	192	7.2	448	7	455
Missouri	402	7.9	492	9.6	1,390	10	1,400
Montana	12	1.4	15	1.8	42	—	42
Nebraska	46	2.8	40	2.5	143	1	144
Nevada	150	14.9	154	15.0	480	4	484
New Hampshire	40	3.8	56	5.3	152	4	156
New Jersey	2,372	30.8	2,194	28.4	8,231	225	8,456
New Mexico	56	3.7	106	6.8	260	1	261
New York	6,716	37.5	7,067	39.3	27,958	653	28,611
North Carolina	313	4.8	492	7.5	1,237	26	1,263
North Dakota	5	0.7	6	0.9	18	—	18
Ohio	514	4.8	500	4.7	1,750	27	1,777
Oklahoma	151	4.5	173	5.0	539	9	548
Oregon	170	6.2	258	9.4	762	3	765
Pennsylvania	930	7.9	1,166	9.9	3,542	63	3,605
Rhode Island	90	9.2	87	8.8	305	7	312
South Carolina	189	5.4	373	10.6	781	19	800
South Dakota	7	1.0	2	0.3	17	—	17
Tennessee	269	5.5	302	6.2	834	12	846
Texas	2,223	12.8	2,579	14.5	8,732	74	8,806
Utah	77	4.5	84	4.8	261	6	267
Vermont	11	2.0	20	3.6	58	1	59
Virginia	390	6.6	515	8.6	1,556	32	1,588
Washington	390	8.5	560	12.1	1,683	11	1,694
West Virginia	22	1.2	62	3.3	129	2	131
Wisconsin	119	2.5	146	3.0	459	2	461
Wyoming	10	1.9	12	2.3	32	—	32
U.S. total	31,371	12.8	35,984	14.5	122,472	2,064	124,536
Guam	1	0.8	2	1.5	7	—	7
Pacific Islands, U.S.	1	0.7	—	—	1	—	1
Puerto Rico	1,349	40.9	1,549	46.8	3,577	124	3,701
Virgin Islands, U.S.	40	35.4	19	16.5	70	4	74
Total	32,762	13.1	37,554	14.9	126,127	2,192	128,319

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

Metropolitan area of residence	Apr. 1988- Mar. 1989		Apr. 1989- Mar. 1990		Cumulative totals		
	No.	Rate	No.	Rate	Adults/ adolescents	Children <13 years old	Total
Akron, Ohio	32	5.0	15	2.4	81	—	81
Albany-Schenectady, N.Y.	67	7.9	76	9.0	257	2	259
Allentown, Pa.	35	5.3	47	7.1	122	4	126
Anaheim, Calif.	227	10.2	297	13.1	975	7	982
Atlanta, Ga.	725	26.9	920	33.3	2,561	23	2,584
Austin, Tex.	106	13.2	237	28.3	541	5	546
Bakersfield, Calif.	24	4.5	35	6.4	83	—	83
Baltimore, Md.	363	15.9	507	22.1	1,338	40	1,378
Baton Rouge, La.	38	6.7	52	9.0	149	—	149
Bergen-Passaic, N.J.	274	21.0	228	17.5	1,050	24	1,074
Birmingham, Ala.	76	8.3	68	7.4	222	6	228
Boston, Mass.	610	16.3	601	16.0	2,115	42	2,157
Bridgeport, Conn.	133	16.0	128	15.3	440	17	457
Buffalo, N.Y.	34	3.6	74	7.9	184	—	184
Charleston, S.C.	43	8.4	80	15.2	179	—	179
Charlotte, N.C.	74	6.7	90	8.1	252	5	257
Chicago, Ill.	851	13.6	967	15.4	3,094	40	3,134
Cincinnati, Ohio	69	4.9	75	5.3	251	3	254
Cleveland, Ohio	128	7.0	134	7.3	469	7	476
Columbus, Ohio	128	9.7	99	7.5	383	3	386
Dallas, Tex.	563	22.2	558	21.4	2,130	8	2,138
Dayton, Ohio	51	5.5	60	6.5	178	3	181
Denver, Colo.	245	14.4	330	19.0	1,064	5	1,069
Detroit, Mich.	324	7.6	358	8.4	1,078	16	1,094
El Paso, Tex.	15	2.6	32	5.5	76	1	77
Fort Lauderdale, Fla.	400	33.6	546	45.1	1,651	26	1,677
Fort Worth, Tex.	151	11.3	123	8.9	455	5	460
Fresno, Calif.	48	7.7	53	8.4	146	2	148
Gary, Ind.	12	2.0	34	5.6	71	—	71
Grand Rapids, Mich.	28	4.2	21	3.1	73	1	74
Greensboro, N.C.	52	5.7	77	8.3	189	4	193
Greenville, S.C.	17	2.8	38	6.1	88	—	88
Harrisburg, Pa.	41	7.1	49	8.4	134	4	138
Hartford, Conn.	122	11.2	153	14.0	432	10	442
Honolulu, Hawaii	79	9.1	135	15.4	392	2	394
Houston, Tex.	788	23.1	1,030	29.4	3,715	31	3,746
Indianapolis, Ind.	88	7.2	148	12.0	348	2	350
Jacksonville, Fla.	144	16.2	236	26.0	543	11	554
Jersey City, N.J.	424	76.2	304	54.7	1,408	33	1,441
Kansas City, Mo.	223	14.5	265	17.1	760	3	763
Knoxville, Tenn.	22	3.6	27	4.4	88	—	88
Las Vegas, Nev.	102	16.8	114	18.3	346	4	350
Little Rock, Ark.	29	5.6	48	9.3	127	1	128
Los Angeles, Calif.	2,037	24.0	2,213	25.8	8,665	74	8,739
Louisville, Ky.	47	4.9	59	6.1	160	2	162
Memphis, Tenn.	83	8.6	94	9.7	267	4	271
Miami, Fla.	814	45.1	839	46.2	2,994	123	3,117
Middlesex, N.J.	213	22.2	169	17.4	658	22	680
Milwaukee, Wis.	69	5.0	79	5.8	260	1	261
Minneapolis-Saint Paul, Minn.	163	6.9	157	6.6	577	6	583
Monmouth-Ocean City, N.J.	164	16.9	162	16.4	490	19	509
Nashville, Tenn.	118	12.4	90	9.4	274	6	280
Nassau-Suffolk, N.Y.	340	12.7	377	14.1	1,320	37	1,357
New Haven, Conn.	135	17.2	134	17.0	482	26	508
New Orleans, La.	246	18.2	343	25.2	1,116	18	1,134
New York, N.Y.	5,796	67.7	5,963	69.4	24,343	592	24,935
Newark, N.J.	980	52.1	945	50.2	3,481	99	3,580
Norfolk, Va.	84	6.1	118	8.4	330	7	337

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

Metropolitan area of residence	Apr. 1988- Mar. 1989		Apr. 1989- Mar. 1990		Cumulative totals		
	No.	Rate	No.	Rate	Adults/ adolescents	Children <13 years old	Total
Oakland, Calif.	371	18.6	403	19.9	1,503	10	1,513
Oklahoma City, Okla.	19	1.9	19	1.8	152	—	152
Omaha, Neb.	34	5.4	31	4.9	102	—	102
Orlando, Fla.	188	19.4	174	17.4	520	5	525
Oxnard-Ventura, Calif.	44	6.9	35	5.4	119	—	119
Philadelphia, Pa.	717	14.9	793	16.4	2,647	40	2,687
Phoenix, Ariz.	161	7.8	293	13.7	801	4	805
Pittsburgh, Pa.	92	4.4	176	8.5	461	2	463
Portland, Oreg.	134	11.4	196	16.6	596	1	597
Providence, R.I.	83	9.3	82	9.1	284	6	290
Raleigh-Durham, N.C.	66	9.7	117	16.8	277	8	285
Richmond, Va.	78	9.5	118	14.2	310	7	317
Riverside-San Bernardino, Calif.	155	7.3	250	11.3	732	12	744
Rochester, N.Y.	84	8.5	76	7.7	293	1	294
Sacramento, Calif.	170	12.5	143	10.3	513	5	518
Saint Louis, Mo.	175	7.2	203	8.3	588	6	594
Salt Lake City, Utah	64	5.9	68	6.2	225	4	229
San Antonio, Tex.	280	21.1	211	15.5	622	9	631
San Diego, Calif.	445	19.3	546	23.2	1,749	16	1,765
San Francisco, Calif.	1,643	99.8	1,907	114.5	7,879	15	7,894
San Jose, Calif.	166	11.3	128	8.6	562	6	568
San Juan, P.R.	829	74.1	975	86.8	2,220	85	2,305
Scranton, Pa.	19	2.6	37	5.2	96	3	99
Seattle, Wash.	286	15.8	424	23.2	1,275	9	1,284
Springfield, Mass.	32	5.5	64	10.9	140	5	145
Syracuse, N.Y.	20	3.0	42	6.3	125	4	129
Tacoma, Wash.	17	3.1	44	8.0	110	1	111
Tampa, Fla.	439	21.8	378	18.4	1,212	21	1,233
Toledo, Ohio	20	3.3	27	4.5	81	1	82
Tucson, Ariz.	44	7.1	58	9.2	201	2	203
Tulsa, Okla.	52	6.8	52	6.7	155	2	157
Washington, D.C.	876	24.1	902	24.5	3,542	53	3,595
West Palm Beach, Fla.	309	38.4	322	38.7	1,068	44	1,112
Wilmington, Del.	69	12.4	59	10.5	198	3	201
Worcester, Mass.	36	5.4	34	5.1	128	3	131
Metropolitan area subtotal¹	27,511	19.3	30,598	21.3	107,141	1,829	108,970
All other areas	5,251	4.9	6,956	6.4	18,986	363	19,349
Total	32,762	13.1	37,554	14.9	126,127	2,192	128,319

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 April 1988 through March 1989, April 1989 through March 1990; and cumulative totals, by age group and exposure category, through March 1990, United States

Adult/adolescent exposure category	Males		Females		Totals		
	Apr. 1988-Mar. 1989	Apr. 1989-Mar. 1990	Apr. 1988-Mar. 1989	Apr. 1989-Mar. 1990	Apr. 1988-Mar. 1989	Apr. 1989-Mar. 1990	Cumulative total ¹
	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)
Male homosexual/bisexual contact	18,460 (64)	20,749 (63)	—	—	18,460 (57)	20,749 (56)	75,853 (60)
Intravenous (IV) drug use (female and heterosexual male)	5,891 (20)	6,758 (21)	1,795 (53)	1,964 (50)	7,686 (24)	8,722 (24)	26,883 (21)
Male homosexual/bisexual contact and IV drug use	2,149 (7)	2,193 (7)	—	—	2,149 (7)	2,193 (6)	8,711 (7)
Hemophilia/coagulation disorder	302 (1)	276 (1)	4 (0)	7 (0)	306 (1)	283 (1)	1,141 (1)
Heterosexual contact:	650 (2)	847 (3)	1,056 (31)	1,289 (33)	1,706 (5)	2,136 (6)	6,231 (5)
<i>Sex with IV drug user</i>	285	389	672	825	957	1,214	3,202
<i>Sex with bisexual male</i>	—	—	101	100	101	100	381
<i>Sex with person with hemophilia</i>	1	3	10	24	11	27	59
<i>Born in Pattern-II country</i>	254	302	125	135	379	437	1,764
<i>Sex with person born in Pattern-II country</i>	16	13	6	14	22	27	85
<i>Sex with transfusion recipient with HIV infection</i>	10	15	23	20	33	35	95
<i>Sex with HIV-infected person, risk not specified</i>	84	125	119	171	203	296	645
Receipt of blood transfusion, blood components, or tissue ³	490 (2)	464 (1)	350 (10)	318 (8)	840 (3)	782 (2)	3,040 (2)
Other/undetermined ⁴	877 (3)	1,628 (5)	175 (5)	364 (9)	1,052 (3)	1,992 (5)	4,268 (3)
Adult/adolescent subtotal	28,819 (100)	32,915 (100)	3,380 (100)	3,942 (100)	32,199 (100)	36,857 (100)	126,127 (100)
Pediatric (<13 years old) exposure category							
Hemophilia/coagulation disorder	33 (11)	28 (7)	1 (0)	—	34 (6)	28 (4)	113 (5)
Mother with/at risk for HIV infection:	231 (75)	309 (82)	231 (91)	289 (90)	462 (82)	598 (86)	1,801 (82)
<i>IV drug use</i>	124	152	115	124	239	276	915
<i>Sex with IV drug user</i>	49	79	46	64	95	143	381
<i>Sex with bisexual male</i>	5	5	5	7	10	12	41
<i>Sex with person with hemophilia</i>	—	—	1	—	1	—	7
<i>Born in Pattern-II country</i>	22	27	22	24	44	51	184
<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>	10	11	8	17	18	28	70
<i>Receipt of blood transfusion, blood components, or tissue</i>	1	4	8	7	9	11	36
<i>Has HIV infection, risk not specified</i>	17	30	23	40	40	70	150
Receipt of blood transfusion, blood components, or tissue	37 (12)	29 (8)	16 (6)	14 (4)	53 (9)	43 (6)	223 (10)
Undetermined	8 (3)	11 (3)	6 (2)	17 (5)	14 (2)	28 (4)	55 (3)
Pediatric subtotal	309 (100)	377 (100)	254 (100)	320 (100)	563 (100)	697 (100)	2,192 (100)
Total	29,128	33,292	3,634	4,262	32,762	37,554	128,319

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 6 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 March 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	54,476 (77)	12,576 (37)	7,978 (41)	576 (74)	85 (52)	75,853 (60)
Intravenous (IV) drug use (female and heterosexual male)	5,412 (8)	13,424 (39)	7,915 (41)	31 (4)	27 (17)	26,883 (21)
Male homosexual/bisexual contact and IV drug use	5,136 (7)	2,278 (7)	1,250 (6)	12 (2)	22 (13)	8,711 (7)
Hemophilia/coagulation disorder	952 (1)	76 (0)	88 (0)	15 (2)	6 (4)	1,141 (1)
Heterosexual contact:	1,276 (2)	3,854 (11)	1,049 (5)	30 (4)	9 (6)	6,231 (5)
<i>Sex with IV drug user</i>	710	1,614	856	12	4	3,202
<i>Sex with bisexual male</i>	202	124	47	6	1	381
<i>Sex with person with hemophilia</i>	52	5	1	1	—	59
<i>Born in Pattern-II¹ country</i>	3	1,742	10	4	—	1,764
<i>Sex with person born in Pattern-II country</i>	26	56	3	—	—	85
<i>Sex with transfusion recipient with HIV infection</i>	69	16	8	1	—	95
<i>Sex with HIV-infected person, risk not specified</i>	214	297	124	6	4	645
Receipt of blood transfusion, blood components, or tissue ²	2,188 (3)	494 (1)	286 (1)	63 (8)	3 (2)	3,040 (2)
Other/undetermined ³	1,593 (2)	1,639 (5)	939 (5)	48 (6)	11 (7)	4,268 (3)
Adult/adolescent subtotal	71,033(100)	34,341 (100)	19,505(100)	775(100)	163(100)	126,127(100)
Pediatric (<13 years old) exposure category						
Hemophilia/coagulation disorder	77 (16)	16 (1)	16 (3)	3 (30)	—	113 (5)
Mother with/at risk for HIV infection:	274 (57)	1,037 (92)	478 (86)	3 (30)	5(100)	1,801 (82)
<i>IV drug use</i>	132	527	252	1	2	915
<i>Sex with IV drug user</i>	60	166	154	—	—	381
<i>Sex with bisexual male</i>	15	18	8	—	—	41
<i>Sex with person with hemophilia</i>	5	1	1	—	—	7
<i>Born in Pattern-II country</i>	2	181	1	—	—	184
<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>	13	29	25	1	1	70
<i>Receipt of blood transfusion, blood components, or tissue</i>	13	13	10	—	—	36
<i>Has HIV infection, risk not specified</i>	29	93	25	1	2	150
Receipt of blood transfusion, blood components, or tissue	124 (26)	49 (4)	46 (8)	4 (40)	—	223 (10)
Undetermined	9 (2)	29 (3)	17 (3)	—	—	55 (3)
Pediatric subtotal	484(100)	1,131 (100)	557(100)	10(100)	5(100)	2,192(100)
Total	71,517	35,472	20,062	785	168	128,319

¹ See technical notes.

² Includes 6 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 315 persons whose race/ethnicity is unknown.

Table 5. Adult/adolescent AIDS cases by sex, exposure category, and race/ethnicity, reported through March 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	54,476 (80)	12,576 (45)	7,978 (46)	576 (81)	85 (62)	75,853 (66)
Intravenous (IV) drug use (heterosexual)	4,118 (6)	9,910 (35)	6,690 (39)	20 (3)	13 (9)	20,812 (18)
Male homosexual/bisexual contact and IV drug use	5,136 (8)	2,278 (8)	1,250 (7)	12 (2)	22 (16)	8,711 (8)
Hemophilia/coagulation disorder	931 (1)	73 (0)	87 (1)	15 (2)	6 (4)	1,116 (1)
Heterosexual contact:	399 (1)	1,945 (7)	196 (1)	6 (1)	1 (1)	2,551 (2)
<i>Sex with IV drug user</i>	254	508	137	1	1	901
<i>Sex with person with hemophilia</i>	4	1	—	—	—	5
<i>Born in Pattern-II¹ country</i>	2	1,280	7	3	—	1,295
<i>Sex with person born in Pattern-II country</i>	24	24	3	—	—	51
<i>Sex with transfusion recipient with HIV infection</i>	18	9	1	—	—	29
<i>Sex with HIV-infected person, risk not specified</i>	97	123	48	2	—	270
Receipt of blood transfusion, blood components, or tissue ²	1,415 (2)	260 (1)	150 (1)	40 (6)	1 (1)	1,871 (2)
Other/undetermined ³	1,368 (2)	1,212 (4)	808 (5)	41 (6)	9 (7)	3,467 (3)
Male subtotal	67,843 (100)	28,254 (100)	17,159 (100)	710 (100)	137 (100)	114,381 (100)
Female exposure category						
IV drug use	1,294 (41)	3,514 (58)	1,225 (52)	11 (17)	14 (54)	6,071 (52)
Hemophilia/coagulation disorder	21 (1)	3 (0)	1 (0)	—	—	25 (0)
Heterosexual contact:	877 (27)	1,909 (31)	853 (36)	24 (37)	8 (31)	3,680 (31)
<i>Sex with IV drug user</i>	456	1,106	719	11	3	2,301
<i>Sex with bisexual male</i>	202	124	47	6	1	381
<i>Sex with person with hemophilia</i>	48	4	1	1	—	54
<i>Born in Pattern-II country</i>	1	462	3	1	—	469
<i>Sex with person born in Pattern-II country</i>	2	32	—	—	—	34
<i>Sex with transfusion recipient with HIV infection</i>	51	7	7	1	—	66
<i>Sex with HIV-infected person, risk not specified</i>	117	174	76	4	4	375
Receipt of blood transfusion, blood components, or tissue	773 (24)	234 (4)	136 (6)	23 (35)	2 (8)	1,169 (10)
Other/undetermined	225 (7)	427 (7)	131 (6)	7 (11)	2 (8)	801 (7)
Female subtotal	3,190 (100)	6,087 (100)	2,346 (100)	65 (100)	26 (100)	11,746 (100)
Total	71,033	34,341	19,505	775	163	126,127

¹ See technical notes.

² Includes 6 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 278 males and 32 females whose race/ethnicity is unknown.

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

Exposure category	13-19 years old			20-24 years old		
	Apr. 1988- Mar. 1989	Apr. 1989- Mar. 1990	Cumulative total	Apr. 1988- Mar. 1989	Apr. 1989- Mar. 1990	Cumulative total
	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)
Male homosexual/bisexual contact	30 (27)	34 (25)	142 (28)	802 (57)	774 (51)	3,154 (58)
Intravenous (IV) drug use (female and heterosexual male)	18 (16)	13 (9)	55 (11)	238 (17)	286 (19)	868 (16)
Male homosexual/bisexual contact and IV drug use	5 (4)	3 (2)	23 (5)	117 (8)	136 (9)	526 (10)
Hemophilia/coagulation disorder	34 (30)	42 (30)	155 (31)	40 (3)	36 (2)	145 (3)
Heterosexual contact:	12 (11)	24 (17)	59 (12)	128 (9)	166 (11)	480 (9)
<i>Sex with IV drug user</i>	6	17	35	80	92	258
<i>Sex with bisexual male</i>	—	1	3	12	7	43
<i>Sex with person with hemophilia</i>	—	1	1	2	8	13
<i>Born in Pattern-II¹ country</i>	3	2	13	13	21	95
<i>Sex with person born in Pattern-II country</i>	—	—	—	—	3	5
<i>Sex with transfusion recipient with HIV infection</i>	—	—	—	—	3	4
<i>Sex with HIV-infected person, risk not specified</i>	3	3	7	21	32	62
Receipt of blood transfusion, blood components, or tissue	13 (12)	5 (4)	39 (8)	25 (2)	9 (1)	81 (1)
Undetermined ²	—	17 (12)	27 (5)	60 (4)	99 (7)	230 (4)
Total	112 (100)	138 (100)	500 (100)	1,410 (100)	1,506 (100)	5,484 (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 March 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	167 (0)	514 (2)	254 (1)	3 (0)	2 (1)	942 (1)
5-12	130 (0)	69 (0)	47 (0)	4 (1)	—	252 (0)
13-19	197 (0)	116 (0)	72 (0)	5 (1)	3 (2)	394 (0)
20-24	2,431 (4)	1,368 (5)	835 (5)	27 (4)	9 (6)	4,679 (4)
25-29	10,336 (15)	4,646 (16)	2,989 (17)	97 (14)	28 (20)	18,131 (16)
30-34	16,068 (24)	7,303 (25)	4,513 (26)	150 (21)	36 (26)	28,134 (24)
35-39	14,899 (22)	6,619 (23)	3,807 (22)	154 (21)	23 (17)	25,570 (22)
40-44	10,084 (15)	3,716 (13)	2,358 (14)	112 (16)	17 (12)	16,333 (14)
45-49	6,016 (9)	2,054 (7)	1,185 (7)	74 (10)	12 (9)	9,361 (8)
50-54	3,384 (5)	1,157 (4)	675 (4)	39 (5)	3 (2)	5,272 (5)
55-59	2,155 (3)	706 (2)	432 (2)	24 (3)	4 (3)	3,334 (3)
60-64	1,181 (2)	360 (1)	177 (1)	8 (1)	2 (1)	1,733 (1)
65 or older	1,092 (2)	209 (1)	116 (1)	20 (3)	—	1,440 (1)
Male subtotal	68,140 (100)	28,837 (100)	17,460 (100)	717 (100)	139 (100)	115,575 (100)
Females						
Age at diagnosis (years)						
Under 5	156 (5)	484 (7)	221 (8)	1 (1)	3 (10)	866 (7)
5-12	31 (1)	64 (1)	35 (1)	2 (3)	—	132 (1)
13-19	25 (1)	61 (1)	18 (1)	1 (1)	1 (3)	106 (1)
20-24	230 (7)	373 (6)	193 (7)	3 (4)	2 (7)	805 (6)
25-29	607 (18)	1,225 (18)	569 (22)	6 (9)	5 (17)	2,420 (19)
30-34	732 (22)	1,843 (28)	635 (24)	15 (22)	9 (31)	3,242 (25)
35-39	500 (15)	1,339 (20)	465 (18)	6 (9)	4 (14)	2,320 (18)
40-44	262 (8)	609 (9)	239 (9)	13 (19)	2 (7)	1,125 (9)
45-49	143 (4)	257 (4)	101 (4)	6 (9)	—	512 (4)
50-54	117 (3)	149 (2)	48 (2)	4 (6)	1 (3)	319 (3)
55-59	130 (4)	97 (1)	35 (1)	3 (4)	—	266 (2)
60-64	120 (4)	60 (1)	19 (1)	5 (7)	1 (3)	205 (2)
65 or older	324 (10)	74 (1)	24 (1)	3 (4)	1 (3)	426 (3)
Female subtotal	3,377 (100)	6,635 (100)	2,602 (100)	68 (100)	29 (100)	12,744 (100)
Total	71,517	35,472	20,062	785	168	128,319

¹ Includes 315 persons whose race/ethnicity is unknown.

Table 8. AIDS cases, case-fatality rates, and deaths by half-year and age group, through March 1990, United States¹

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	77	83.1	30	6	66.7	1
1981 Jan.-June	91	92.3	38	8	62.5	2
July-Dec.	197	91.9	84	5	100.0	6
1982 Jan.-June	384	90.6	153	12	75.0	8
July-Dec.	668	89.7	278	15	80.0	4
1983 Jan.-June	1,251	91.4	510	33	93.9	13
July-Dec.	1,612	91.3	905	40	75.0	16
1984 Jan.-June	2,526	88.0	1,360	47	83.0	24
July-Dec.	3,310	88.9	1,897	63	73.0	24
1985 Jan.-June	4,752	87.6	2,707	97	71.1	43
July-Dec.	6,123	85.9	3,687	127	74.8	68
1986 Jan.-June	8,017	83.4	4,834	130	72.3	64
July-Dec.	9,598	79.9	6,127	165	67.3	83
1987 Jan.-June	12,315	77.0	7,088	211	58.8	112
July-Dec.	13,606	67.7	7,442	245	55.1	154
1988 Jan.-June	15,108	58.0	8,579	224	46.0	125
July-Dec.	15,146	49.4	9,637	291	38.1	147
1989 Jan.-June	15,834	36.9	10,471	262	38.2	143
July-Dec.	13,359	24.5	9,687	184	29.3	121
1990 Jan.-Mar.	2,153	12.7	1,487	27	18.5	19
Total²	126,127	61.2	77,158	2,192	53.9	1,182

¹ Reporting of diagnosed AIDS cases and deaths in more recent time periods is incomplete. See technical notes.

² Death totals include 157 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 March 1990, United States

Definition category ¹	Year of diagnosis					Cumulative total
	Before Apr. 1986	Apr. 1986-Mar. 1987	Apr. 1987-Mar. 1988	Apr. 1988-Mar. 1989	Apr. 1989-Mar. 1990	
	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	
Pre-1987 definition	24,179 (96)	17,882 (89)	21,591 (77)	21,854 (70)	16,085 (68)	101,591 (79)
1987 definition: ²	1,100 (4)	2,218 (11)	6,368 (23)	9,316 (30)	7,726 (32)	26,728 (21)
<i>Specific disease</i>						
<i>presumptively diagnosed</i>	585	1,192	3,461	5,276	4,363	14,877
<i>Specific disease</i>						
<i>definitively diagnosed</i>	213	296	561	606	519	2,195
<i>HIV encephalopathy</i>	78	259	835	1,123	862	3,157
<i>HIV wasting syndrome</i>	224	471	1,511	2,311	1,982	6,499
Total	25,279 (100)	20,100 (100)	27,959 (100)	31,170 (100)	23,811 (100)	128,319 (100)

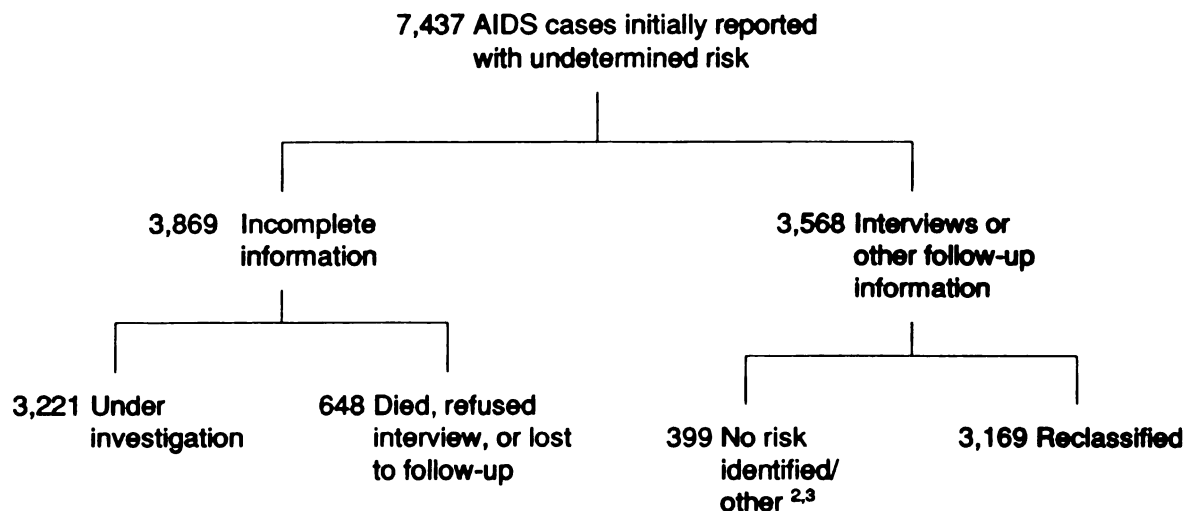
¹ Persons who meet the criteria for more than one definition category are classified in the definition category listed first.

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 March 1990, United States

Exposure category	AIDS cases	
	No.	(%)
Single mode of exposure		
Male homosexual/bisexual contact	72,833	(58)
Intravenous (IV) drug use (female and heterosexual male)	23,049	(18)
Hemophilia/coagulation disorder	688	(1)
Heterosexual contact	5,936	(5)
Receipt of transfusion of blood, blood component, or tissue	3,040	(2)
Other/undetermined	4,268	(3)
Single mode of exposure subtotal	109,814	(87)
Multiple modes of exposure		
Male homosexual/bisexual contact; IV drug use	7,872	(6)
Male homosexual/bisexual contact; hemophilia	31	(0)
Male homosexual/bisexual contact; heterosexual contact	1,462	(1)
Male homosexual/bisexual contact; receipt of transfusion	1,429	(1)
IV drug use; hemophilia	30	(0)
IV drug use; heterosexual contact	2,987	(2)
IV drug use; receipt of transfusion	615	(0)
Hemophilia; heterosexual contact	6	(0)
Hemophilia; receipt of transfusion	438	(0)
Heterosexual contact; receipt of transfusion	295	(0)
Male homosexual/bisexual contact; IV drug use; hemophilia	10	(0)
Male homosexual/bisexual contact; IV drug use; heterosexual contact	560	(0)
Male homosexual/bisexual contact; IV drug use; receipt of transfusion	233	(0)
Male homosexual/bisexual contact; hemophilia; heterosexual contact	2	(0)
Male homosexual/bisexual contact; hemophilia; receipt of transfusion	17	(0)
Male homosexual/bisexual contact; heterosexual contact; receipt of transfusion	79	(0)
IV drug use; hemophilia; heterosexual contact	4	(0)
IV drug use; hemophilia; receipt of transfusion	18	(0)
IV drug use; heterosexual contact; receipt of transfusion	175	(0)
Hemophilia; heterosexual contact; receipt of transfusion	9	(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	28	(0)
IV drug use; hemophilia; heterosexual contact; receipt of transfusion	5	(0)
Multiple modes of exposure subtotal	16,313	(13)
Total	126,127	(100)

Figure 4. Results of investigations of adult/adolescent AIDS cases with undetermined risk, reported through March 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 86 children who were initially reported with an undetermined risk have been reclassified after investigation.

² **Health-care workers.** 2 of the 399 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 397, 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. 34 (58%) 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.** 335 of the 397 patients who had no risk identified after follow-up responded to a standardized questionnaire; 110 (37%) of 298 persons responding to questions related to sexually transmitted disease gave a history of such disease and 72 (34%) of 210 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.