

HIV/AIDS

SURVEILLANCE

U.S. AIDS cases reported through August 1990

Issued September 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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Figure 1. AIDS annual rates per 100,000 population, for cases reported September 1989 through August 1990, United States

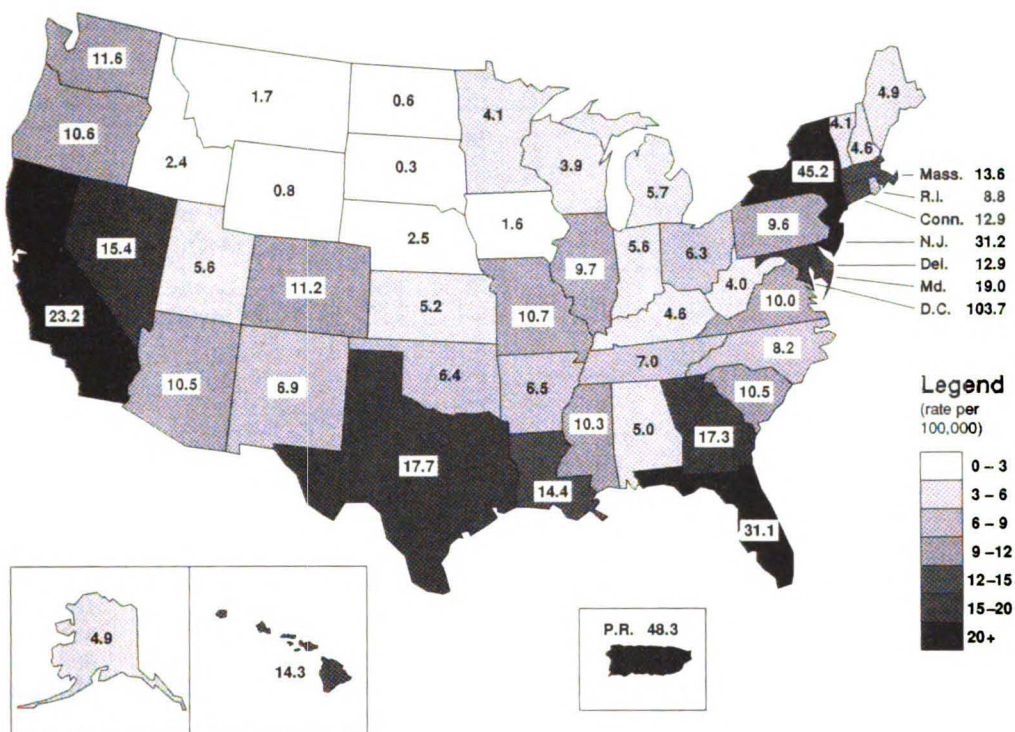


Figure 2. Adult/adolescent and pediatric AIDS cases, reported September 1989 through August 1990, United States

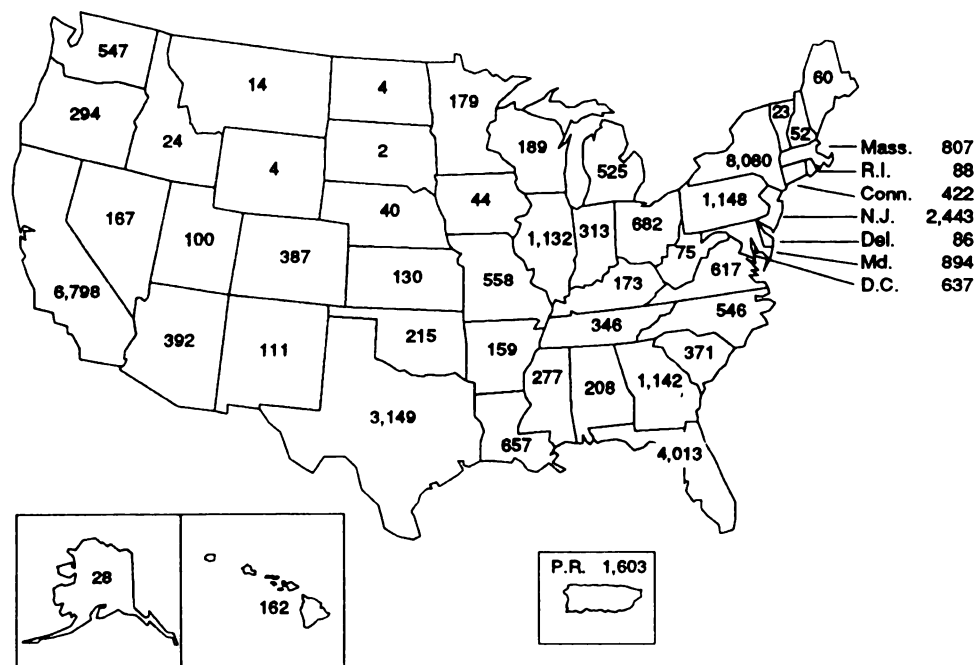


Figure 3. Pediatric AIDS cases, reported September 1989 through August 1990, United States

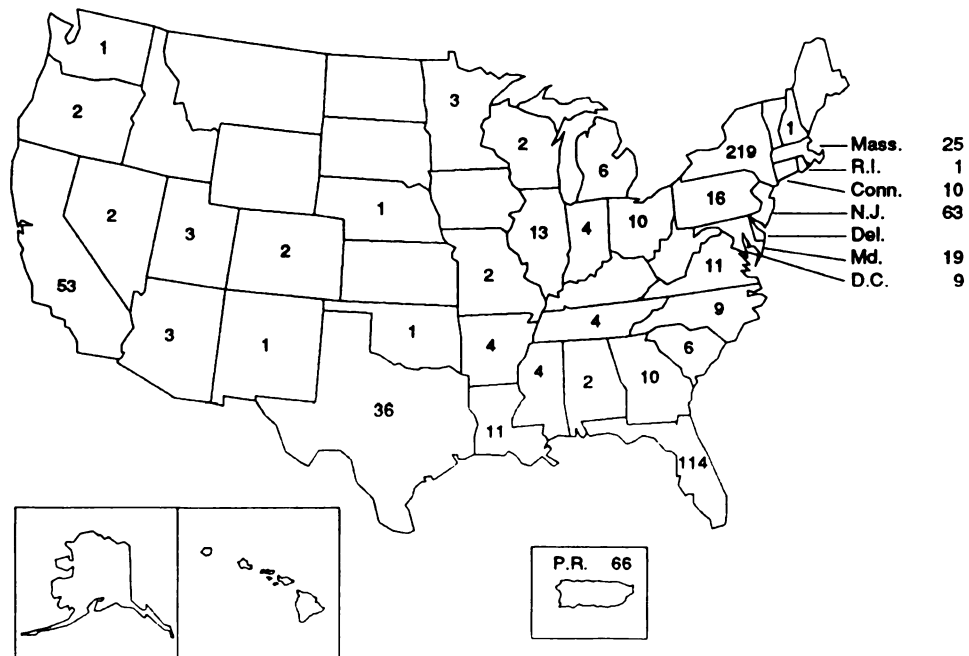


Table 1. AIDS cases and annual rates per 100,000 population, by state, reported September 1988 through August 1989, September 1989 through August 1990; and cumulative totals, by state and age group, through August 1990¹

State of residence	Sept. 1988-Aug. 1989		Sept. 1989-Aug. 1990		Cumulative totals		
	No.	Rate	No.	Rate	Adults/adolescents	Children < 13 years old	Total
Alabama	236	5.7	208	5.0	782	17	799
Alaska	15	2.7	28	4.9	94	2	96
Arizona	255	7.0	392	10.5	1,207	7	1,214
Arkansas	71	2.9	159	6.5	377	7	384
California	5,881	20.5	6,798	23.2	27,456	197	27,653
Colorado	319	9.4	387	11.2	1,443	8	1,451
Connecticut	420	12.9	422	12.9	1,678	55	1,733
Delaware	70	10.6	86	12.9	281	4	285
District of Columbia	551	89.4	637	103.7	2,459	34	2,493
Florida	3,127	24.8	4,013	31.1	12,342	342	12,684
Georgia	1,057	16.3	1,142	17.3	3,773	43	3,816
Hawaii	142	12.7	162	14.3	564	2	566
Idaho	21	2.1	24	2.4	68	2	70
Illinois	1,170	10.1	1,132	9.7	4,239	59	4,298
Indiana	245	4.4	313	5.6	887	10	897
Iowa	52	1.9	44	1.6	184	3	187
Kansas	95	3.8	130	5.2	393	3	396
Kentucky	102	2.7	173	4.6	446	5	451
Louisiana	464	10.3	657	14.4	2,035	34	2,069
Maine	47	3.9	60	4.9	192	2	194
Maryland	654	14.1	894	19.0	2,722	63	2,785
Massachusetts	762	12.9	807	13.6	2,997	65	3,062
Michigan	486	5.3	525	5.7	1,769	26	1,795
Minnesota	181	4.2	179	4.1	739	8	747
Mississippi	144	5.4	277	10.3	588	9	597
Missouri	389	7.5	558	10.7	1,613	11	1,624
Montana	14	1.7	14	1.7	48	—	48
Nebraska	45	2.8	40	2.5	158	2	160
Nevada	153	14.5	167	15.4	551	5	556
New Hampshire	51	4.6	52	4.6	172	5	177
New Jersey	2,153	27.6	2,443	31.2	9,373	265	9,638
New Mexico	79	5.0	111	6.9	306	2	308
New York	6,192	34.7	8,080	45.2	31,437	741	32,178
North Carolina	380	5.8	546	8.2	1,482	30	1,512
North Dakota	6	0.9	4	0.6	20	—	20
Ohio	467	4.3	682	6.3	2,089	32	2,121
Oklahoma	151	4.6	215	6.4	646	10	656
Oregon	195	7.1	294	10.6	898	5	903
Pennsylvania	1,022	8.6	1,148	9.6	4,018	68	4,086
Rhode Island	83	8.4	88	8.8	343	7	350
South Carolina	265	7.6	371	10.5	930	21	951
South Dakota	6	0.8	2	0.3	18	—	18
Tennessee	255	5.2	346	7.0	988	14	1,002
Texas	2,431	13.9	3,149	17.7	10,327	97	10,424
Utah	83	4.8	100	5.6	308	8	316
Vermont	12	2.1	23	4.1	68	1	69
Virginia	437	7.2	617	10.0	1,827	32	1,859
Washington	500	10.8	547	11.6	1,947	11	1,958
West Virginia	38	2.0	75	4.0	166	2	168
Wisconsin	126	2.6	189	3.9	566	3	569
Wyoming	16	3.2	4	0.8	33	—	33
U.S. total	32,116	12.9	39,514	15.8	140,047	2,379	142,426
Guam	1	0.7	1	0.7	7	—	7
Pacific Islands, U.S.	1	0.7	1	0.7	2	—	2
Puerto Rico	1,354	40.9	1,603	48.3	4,091	142	4,233
Virgin Islands, U.S.	28	24.3	11	9.4	74	4	78
Total	33,500	13.3	41,130	16.2	144,221	2,525	146,746

¹ During August 1990, 3,399 cases and 2,094 deaths among adults/adolescents and 61 cases and 23 deaths among children were reported to the CDC.

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

Metropolitan area of residence	Sept. 1988- Aug. 1989		Sept. 1989- Aug. 1990		Cumulative totals		
	No.	Rate	No.	Rate	Adults/ adolescents	Children <13 years old	Total
Akron, Ohio	27	4.2	31	4.8	98	—	98
Albany-Schenectady, N.Y.	63	7.4	92	10.8	303	3	306
Albuquerque, N.M.	42	8.2	59	11.3	163	1	164
Allentown, Pa.	30	4.4	51	7.5	140	4	144
Anaheim, Calif.	279	12.2	352	15.1	1,202	9	1,211
Atlanta, Ga.	834	29.5	863	29.7	2,878	25	2,903
Austin, Tex.	197	24.9	228	27.8	654	5	659
Bakersfield, Calif.	26	4.9	35	6.4	99	—	99
Baltimore, Md.	432	18.4	586	24.9	1,622	46	1,668
Baton Rouge, La.	48	8.8	60	10.9	178	2	180
Bergen-Passaic, N.J.	212	16.4	310	23.9	1,227	26	1,253
Birmingham, Ala.	89	9.6	65	7.0	254	6	260
Boston, Mass.	605	16.1	614	16.3	2,376	50	2,426
Bridgeport, Conn.	137	16.7	116	14.1	504	18	522
Buffalo, N.Y.	53	5.6	94	10.0	237	2	239
Charleston, S.C.	57	10.9	76	14.3	212	—	212
Charlotte, N.C.	80	7.1	94	8.2	297	5	302
Chicago, Ill.	973	15.6	946	15.1	3,589	44	3,633
Cincinnati, Ohio	57	3.9	129	8.8	318	6	324
Cleveland, Ohio	122	6.6	138	7.5	527	7	534
Columbus, Ohio	108	8.0	152	11.2	469	3	472
Dallas, Tex.	561	21.5	732	27.4	2,540	12	2,552
Dayton, Ohio	59	6.3	63	6.7	205	3	208
Denver, Colo.	260	15.3	317	18.4	1,178	5	1,183
Detroit, Mich.	335	7.7	369	8.5	1,245	19	1,264
El Paso, Tex.	24	4.0	35	5.7	94	1	95
Fort Lauderdale, Fla.	528	44.0	866	71.1	2,278	46	2,324
Fort Worth, Tex.	170	12.5	169	12.1	560	7	567
Fresno, Calif.	51	8.3	55	8.7	171	2	173
Gary, Ind.	20	3.4	27	4.6	77	—	77
Grand Rapids, Mich.	30	4.4	27	3.9	88	1	89
Greensboro, N.C.	64	6.8	97	10.2	237	4	241
Greenville, S.C.	29	4.7	47	7.5	117	—	117
Harrisburg, Pa.	50	8.5	38	6.4	148	4	152
Hartford, Conn.	138	12.4	147	13.1	498	11	509
Honolulu, Hawaii	105	12.3	110	12.8	431	2	433
Houston, Tex.	862	26.0	1,251	37.0	4,330	40	4,370
Indianapolis, Ind.	120	9.6	160	12.7	424	3	427
Jacksonville, Fla.	141	15.3	245	26.0	627	12	639
Jersey City, N.J.	354	65.2	333	61.5	1,581	37	1,618
Kansas City, Mo.	207	13.1	340	21.3	922	3	925
Knoxville, Tenn.	23	3.8	29	4.8	102	—	102
Lake County, Ill.	19	3.7	13	2.5	65	2	67
Las Vegas, Nev.	114	18.0	126	19.3	406	5	411
Little Rock, Ark.	29	5.5	62	11.7	154	3	157
Los Angeles, Calif.	1,953	22.2	2,287	25.6	9,586	86	9,672
Louisville, Ky.	41	4.2	68	7.0	185	2	187
Memphis, Tenn.	75	7.6	113	11.3	318	6	324
Miami, Fla.	932	51.1	1,036	56.4	3,678	150	3,828
Middlesex, N.J.	181	18.2	179	17.7	740	24	764
Milwaukee, Wis.	72	5.2	110	7.9	332	1	333
Minneapolis-Saint Paul, Minn.	159	6.6	166	6.8	664	6	670
Mobile, Ala.	46	9.3	33	6.6	164	—	164
Monmouth-Ocean City, N.J.	163	16.4	195	19.3	589	21	610
Nashville, Tenn.	86	8.7	114	11.3	330	6	336
Nassau-Suffolk, N.Y.	364	13.8	424	16.1	1,517	37	1,554
New Haven, Conn.	106	13.3	129	16.1	535	26	561
New Orleans, La.	283	21.2	385	28.7	1,305	18	1,323

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

Metropolitan area of residence	Sept. 1988- Aug. 1989		Sept. 1989- Aug. 1990		Cumulative totals		
	No.	Rate	No.	Rate	Adults/ adolescents	Children <13 years old	Total
New York, N.Y.	5,261	61.4	6,844	79.6	27,294	671	27,965
Newark, N.J.	890	46.8	1,025	53.9	3,948	122	4,070
Norfolk, Va.	80	5.7	154	10.8	396	7	403
Oakland, Calif.	341	16.9	500	24.4	1,744	12	1,756
Oklahoma City, Okla.	78	7.8	112	11.1	331	—	331
Omaha, Neb.	34	5.4	30	4.8	113	1	114
Orlando, Fla.	154	15.5	230	22.4	639	7	646
Oxnard-Ventura, Calif.	40	6.1	37	5.5	132	—	132
Philadelphia, Pa.	728	14.8	840	17.0	3,029	47	3,076
Phoenix, Ariz.	173	8.2	295	13.5	882	4	886
Pittsburgh, Pa.	147	7.1	140	6.8	517	2	519
Portland, Oreg.	153	12.9	228	19.1	706	2	708
Providence, R.I.	75	8.3	84	9.2	320	6	326
Raleigh-Durham, N.C.	80	11.5	127	17.8	331	9	340
Richmond, Va.	95	11.2	127	14.9	353	7	360
Riverside-San Bernardino, Calif.	242	10.6	245	10.3	910	15	925
Rochester, N.Y.	69	7.0	80	8.2	319	2	321
Sacramento, Calif.	169	12.0	150	10.4	590	5	595
Saint Louis, Mo.	180	7.2	201	8.0	679	7	686
Salt Lake City, Utah	68	6.2	90	8.1	272	5	277
San Antonio, Tex.	268	19.4	219	15.5	733	11	744
San Diego, Calif.	448	18.6	700	28.4	2,125	19	2,144
San Francisco, Calif.	1,719	106.7	1,787	110.0	8,513	17	8,530
San Jose, Calif.	150	10.4	159	10.9	651	8	659
San Juan, P.R.	856	54.8	1,019	65.0	2,540	93	2,633
Scranton, Pa.	22	3.0	38	5.2	107	3	110
Seattle, Wash.	380	20.5	426	22.7	1,497	10	1,507
Springfield, Mass.	44	7.5	65	11.1	161	8	169
Syracuse, N.Y.	23	3.6	51	7.9	145	5	150
Tacoma, Wash.	41	7.3	29	5.1	124	1	125
Tampa, Fla.	399	19.4	410	19.5	1,414	23	1,437
Toledo, Ohio	18	2.9	50	8.2	108	3	111
Tucson, Ariz.	53	8.1	64	9.6	229	2	231
Tulsa, Okla.	48	6.4	58	7.7	182	3	185
Washington, D.C.	909	24.1	1,106	28.9	4,134	61	4,195
West Palm Beach, Fla.	324	38.2	327	37.3	1,227	52	1,279
Wilmington, Del.	60	10.5	73	12.7	232	3	235
Worcester, Mass.	37	5.5	32	4.7	141	4	145
Metropolitan area subtotal¹	28,081	19.2	34,140	23.1	123,536	2,124	125,660
All other areas	5,419	5.1	6,990	6.6	20,685	401	21,086
Total	33,500	13.3	41,130	16.2	144,221	2,525	146,746

¹ 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 September 1988 through August 1989, September 1989 through August 1990; and cumulative totals, by age group and exposure category, through August 1990, United States

Adult/adolescent exposure category	Males		Females		Totals		
	Sept. 1988-Aug. 1989	Sept. 1989-Aug. 1990	Sept. 1988-Aug. 1989	Sept. 1989-Aug. 1990	Sept. 1988-Aug. 1989	Sept. 1989-Aug. 1990	Cumulative total ¹
	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)
Male homosexual/bisexual contact	18,898 (64)	22,538 (63)	—	—	18,898 (57)	22,538 (56)	86,113 (60)
Intravenous (IV) drug use (female and heterosexual male)	5,923 (20)	7,390 (21)	1,809 (52)	2,169 (48)	7,732 (24)	9,559 (24)	31,114 (22)
Male homosexual/bisexual contact and IV drug use	2,153 (7)	2,283 (6)	—	—	2,153 (7)	2,283 (6)	9,776 (7)
Hemophilia/coagulation disorder	300 (1)	301 (1)	7 (0)	7 (0)	307 (1)	308 (1)	1,288 (1)
Heterosexual contact:	710 (2)	950 (3)	1,104 (32)	1,514 (34)	1,814 (6)	2,464 (6)	7,418 (5)
<i>Sex with IV drug user</i>	362	419	708	955	1,070	1,374	3,891
<i>Sex with bisexual male</i>	—	—	87	130	87	130	448
<i>Sex with person with hemophilia</i>	2	1	11	28	13	29	68
<i>Born in Pattern-II² country</i>	228	310	121	138	349	448	1,916
<i>Sex with person born in Pattern-II country</i>	15	19	10	24	25	43	116
<i>Sex with transfusion recipient with HIV infection</i>	11	17	23	33	34	50	123
<i>Sex with HIV-infected person, risk not specified</i>	92	184	144	206	236	390	856
Receipt of blood transfusion, blood components, or tissue ³	461 (2)	502 (1)	333 (10)	338 (8)	794 (2)	840 (2)	3,417 (2)
Other/undetermined ⁴	987 (3)	1,930 (5)	198 (6)	458 (10)	1,185 (4)	2,388 (6)	5,095 (4)
Adult/adolescent subtotal	29,432 (100)	35,894 (100)	3,451 (100)	4,486 (100)	32,883 (100)	40,380 (100)	144,221 (100)
Pediatric (<13 years old) exposure category							
Hemophilia/coagulation disorder	33 (10)	30 (8)	1 (0)	—	34 (6)	30 (4)	129 (5)
Mother with/at risk for HIV infection:	270 (79)	315 (82)	254 (92)	331 (91)	524 (85)	646 (86)	2,091 (83)
<i>IV drug use</i>	138	153	110	154	248	307	1,053
<i>Sex with IV drug user</i>	59	70	55	70	114	140	432
<i>Sex with bisexual male</i>	6	6	3	9	9	15	47
<i>Sex with person with hemophilia</i>	—	—	1	1	1	1	8
<i>Born in Pattern-II country</i>	26	25	27	24	53	49	206
<i>Sex with person born in Pattern-II country</i>	1	2	2	2	3	4	10
<i>Sex with transfusion recipient with HIV infection</i>	3	1	6	1	9	2	12
<i>Sex with HIV-infected person, risk not specified</i>	11	16	14	19	25	35	90
<i>Receipt of blood transfusion, blood components, or tissue</i>	4	6	8	4	12	10	43
<i>Has HIV infection, risk not specified</i>	22	36	28	47	50	83	190
Receipt of blood transfusion, blood components, or tissue	33 (10)	26 (7)	13 (5)	15 (4)	46 (7)	41 (5)	242 (10)
Undetermined	6 (2)	15 (4)	7 (3)	18 (5)	13 (2)	33 (4)	63 (2)
Pediatric subtotal	342 (100)	386 (100)	275 (100)	364 (100)	617 (100)	750 (100)	2,525 (100)
Total	29,774	36,280	3,726	4,850	33,500	41,130	146,746

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 13 transfusion recipients who received blood screened for HIV antibody, and 1 tissue recipient.

⁴ "Other" refers to 3 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 August 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	61,586 (76)	14,486 (36)	9,078 (41)	662 (75)	112 (55)	86,113 (60)
Intravenous (IV) drug use (female and heterosexual male)	6,309 (8)	15,610 (39)	9,039 (40)	37 (4)	34 (17)	31,114 (22)
Male homosexual/bisexual contact and IV drug use	5,703 (7)	2,624 (7)	1,393 (6)	16 (2)	26 (13)	9,776 (7)
Hemophilia/coagulation disorder	1,078 (1)	84 (0)	99 (0)	15 (2)	8 (4)	1,288 (1)
Heterosexual contact:	1,564 (2)	4,523 (11)	1,271 (6)	31 (3)	10 (5)	7,418 (5)
<i>Sex with IV drug user</i>	863	1,988	1,011	13	7	3,891
<i>Sex with bisexual male</i>	243	144	53	6	1	448
<i>Sex with person with hemophilia</i>	59	6	2	1	—	68
<i>Born in Pattern-II¹ country</i>	6	1,889	11	4	—	1,916
<i>Sex with person born in Pattern-II country</i>	39	70	6	—	—	116
<i>Sex with transfusion recipient with HIV infection</i>	82	20	18	1	—	123
<i>Sex with HIV-infected person, risk not specified</i>	272	406	170	6	2	856
Receipt of blood transfusion, blood components, or tissue ²	2,426 (3)	576 (1)	336 (2)	68 (8)	3 (1)	3,417 (2)
Other/undetermined ³	1,908 (2)	1,958 (5)	1,116 (5)	57 (6)	12 (6)	5,095 (4)
Adult/adolescent subtotal	80,574(100)	39,861 (100)	22,332(100)	886(100)	205(100)	144,221(100)
Pediatric (<13 years old) exposure category						
Hemophilia/coagulation disorder	87 (16)	17 (1)	22 (3)	3 (25)	—	129 (5)
Mother with/at risk for HIV infection:	322 (59)	1,200 (92)	554 (85)	4 (33)	5(100)	2,091 (83)
<i>IV drug use</i>	160	596	292	1	2	1,053
<i>Sex with IV drug user</i>	68	187	175	1	—	432
<i>Sex with bisexual male</i>	18	20	9	—	—	47
<i>Sex with person with hemophilia</i>	5	2	1	—	—	8
<i>Born in Pattern-II country</i>	2	203	1	—	—	206
<i>Sex with person born in Pattern-II country</i>	—	9	—	—	—	10
<i>Sex with transfusion recipient with HIV infection</i>	5	3	3	—	—	12
<i>Sex with HIV-infected person, risk not specified</i>	17	41	29	1	1	90
<i>Receipt of blood transfusion, blood components, or tissue</i>	15	16	12	—	—	43
<i>Has HIV infection, risk not specified</i>	32	123	32	1	2	190
Receipt of blood transfusion, blood components, or tissue	130 (24)	52 (4)	55 (8)	5 (42)	—	242 (10)
Undetermined	7 (1)	36 (3)	20 (3)	—	—	63 (2)
Pediatric subtotal	546(100)	1,305 (100)	651(100)	12(100)	5(100)	2,525(100)
Total	81,120	41,166	22,983	898	210	146,746

¹ See technical notes.

² Includes 13 transfusion recipients who received blood screened for HIV antibody, and 1 tissue recipient.

³ "Other" refers to 3 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 369 persons whose race/ethnicity is unknown.

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

Male exposure category	White, not Hispanic	Black, not Hispanic	Hispanic	Asian/Pacific Islander	American Indian/ Alaskan Native	Total⁴
	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)
Male homosexual/bisexual contact	61,586 (80)	14,486 (44)	9,078 (46)	662 (81)	112 (64)	86,113 (66)
Intravenous (IV) drug use (heterosexual)	4,826 (6)	11,492 (35)	7,611 (39)	25 (3)	18 (10)	24,045 (18)
Male homosexual/bisexual contact and IV drug use	5,703 (7)	2,624 (8)	1,393 (7)	16 (2)	26 (15)	9,776 (7)
Hemophilia/coagulation disorder	1,054 (1)	79 (0)	98 (1)	15 (2)	8 (5)	1,258 (1)
Heterosexual contact:	495 (1)	2,218 (7)	267 (1)	6 (1)	2 (1)	2,993 (2)
<i>Sex with IV drug user</i>	311	628	176	2	2	1,119
<i>Sex with person with hemophilia</i>	4	—	—	—	—	4
<i>Born in Pattern-II¹ country</i>	4	1,379	8	3	—	1,398
<i>Sex with person born in Pattern-II country</i>	33	28	5	—	—	66
<i>Sex with transfusion recipient with HIV infection</i>	21	10	4	—	—	36
<i>Sex with HIV-infected person, risk not specified</i>	122	173	74	1	—	370
Receipt of blood transfusion, blood components, or tissue ²	1,566 (2)	306 (1)	174 (1)	43 (5)	1 (1)	2,097 (2)
Other/undetermined ³	1,648 (2)	1,435 (4)	955 (5)	48 (6)	9 (5)	4,132 (3)
Male subtotal	76,878 (100)	32,640 (100)	19,576 (100)	815 (100)	176 (100)	130,414 (100)
Female						
exposure category						
IV drug use	1,483 (40)	4,118 (57)	1,428 (52)	12 (17)	16 (55)	7,069 (51)
Hemophilia/coagulation disorder	24 (1)	5 (0)	1 (0)	—	—	30 (0)
Heterosexual contact:	1,069 (29)	2,305 (32)	1,004 (36)	25 (35)	8 (28)	4,425 (32)
<i>Sex with IV drug user</i>	552	1,360	835	11	5	2,772
<i>Sex with bisexual male</i>	243	144	53	6	1	448
<i>Sex with person with hemophilia</i>	55	6	2	1	—	64
<i>Born in Pattern-II country</i>	2	510	3	1	—	518
<i>Sex with person born in Pattern-II country</i>	6	42	1	—	—	50
<i>Sex with transfusion recipient with HIV infection</i>	61	10	14	1	—	87
<i>Sex with HIV-infected person, risk not specified</i>	150	233	96	5	2	486
Receipt of blood transfusion, blood components, or tissue	860 (23)	270 (4)	162 (6)	25 (35)	2 (7)	1,320 (10)
Other/undetermined	260 (7)	523 (7)	161 (6)	9 (13)	3 (10)	963 (7)
Female subtotal	3,696 (100)	7,221 (100)	2,756 (100)	71 (100)	29 (100)	13,807 (100)
Total	80,574	39,861	22,332	886	205	144,221

¹ See technical notes.

² Includes 13 transfusion recipients who received blood screened for HIV antibody, and 1 tissue recipient.

³ "Other" refers to 3 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 329 males and 34 females whose race/ethnicity is unknown.

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

Exposure category	13-19 years old			20-24 years old		
	Sept.1988- Aug. 1989	Sept. 1989- Aug. 1990	Cumulative total	Sept. 1988- Aug. 1989	Sept. 1989- Aug. 1990	Cumulative total
	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)
Male homosexual/bisexual contact	37 (30)	30 (20)	156 (27)	795 (56)	812 (51)	3,526 (57)
Intravenous (IV) drug use (female and heterosexual male)	17 (14)	14 (9)	63 (11)	241 (17)	276 (17)	984 (16)
Male homosexual/bisexual contact and IV drug use	4 (3)	2 (1)	24 (4)	118 (8)	141 (9)	586 (9)
Hemophilia/coagulation disorder	38 (31)	48 (32)	176 (31)	41 (3)	32 (2)	157 (3)
Heterosexual contact:	14 (11)	29 (19)	70 (12)	142 (10)	183 (12)	563 (9)
<i>Sex with IV drug user</i>	10	19	43	82	111	315
<i>Sex with bisexual male</i>	—	1	3	9	8	45
<i>Sex with person with hemophilia</i>	—	1	1	5	5	14
<i>Born in Pattern-II¹ country</i>	2	2	13	18	23	104
<i>Sex with person born in Pattern-II country</i>	—	—	—	1	4	7
<i>Sex with transfusion recipient with HIV infection</i>	—	—	—	—	4	5
<i>Sex with HIV-infected person, risk not specified</i>	2	6	10	27	28	73
Receipt of blood transfusion, blood components, or tissue	9 (7)	9 (6)	45 (8)	18 (1)	20 (1)	93 (2)
Undetermined ²	4 (3)	20 (13)	34 (6)	59 (4)	114 (7)	263 (4)
Total	123 (100)	152 (100)	568 (100)	1,414 (100)	1,578 (100)	6,172 (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 August 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	188 (0)	580 (2)	281 (1)	3 (0)	2 (1)	1,057 (1)
5-12	149 (0)	89 (0)	61 (0)	5 (1)	—	306 (0)
13-19	212 (0)	133 (0)	81 (0)	6 (1)	5 (3)	438 (0)
20-24	2,700 (3)	1,554 (5)	931 (5)	27 (3)	11 (6)	5,234 (4)
25-29	11,726 (15)	5,314 (16)	3,418 (17)	110 (13)	39 (22)	20,647 (16)
30-34	18,120 (23)	8,384 (25)	5,088 (26)	176 (21)	45 (25)	31,888 (24)
35-39	16,888 (22)	7,627 (23)	4,356 (22)	181 (22)	30 (17)	29,170 (22)
40-44	11,503 (15)	4,406 (13)	2,701 (14)	130 (16)	20 (11)	18,811 (14)
45-49	6,827 (9)	2,405 (7)	1,373 (7)	82 (10)	15 (8)	10,726 (8)
50-54	3,879 (5)	1,325 (4)	799 (4)	44 (5)	3 (2)	6,067 (5)
55-59	2,445 (3)	816 (2)	484 (2)	27 (3)	5 (3)	3,790 (3)
60-64	1,353 (2)	421 (1)	210 (1)	8 (1)	3 (2)	2,000 (2)
65 or older	1,225 (2)	255 (1)	135 (1)	24 (3)	—	1,643 (1)
Male subtotal	77,215 (100)	33,309 (100)	19,918 (100)	823 (100)	178 (100)	131,777 (100)
Females						
Age at diagnosis (years)						
Under 5	171 (4)	559 (7)	264 (9)	1 (1)	3 (9)	999 (7)
5-12	38 (1)	77 (1)	45 (1)	3 (4)	—	163 (1)
13-19	34 (1)	73 (1)	21 (1)	1 (1)	1 (3)	130 (1)
20-24	252 (6)	447 (6)	228 (7)	3 (4)	4 (13)	938 (6)
25-29	707 (18)	1,417 (18)	648 (21)	8 (11)	3 (9)	2,790 (19)
30-34	835 (21)	2,141 (27)	748 (24)	15 (20)	11 (34)	3,759 (25)
35-39	590 (15)	1,607 (20)	547 (18)	7 (9)	5 (16)	2,762 (18)
40-44	312 (8)	737 (9)	275 (9)	14 (19)	2 (6)	1,342 (9)
45-49	171 (4)	324 (4)	124 (4)	7 (9)	—	630 (4)
50-54	131 (3)	191 (2)	66 (2)	5 (7)	1 (3)	394 (3)
55-59	153 (4)	123 (2)	43 (1)	3 (4)	—	324 (2)
60-64	140 (4)	75 (1)	24 (1)	5 (7)	1 (3)	245 (2)
65 or older	371 (10)	86 (1)	32 (1)	3 (4)	1 (3)	493 (3)
Female subtotal	3,905 (100)	7,857 (100)	3,065 (100)	75 (100)	32 (100)	14,969 (100)
Total	81,120	41,166	22,983	898	210	146,746

¹ Includes 369 persons whose race/ethnicity is unknown.

Table 8. AIDS cases, case-fatality rates, and deaths by half-year and age group, through August 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	77	83.1	30	6	66.7	1
1981 Jan.-June	91	92.3	38	8	62.5	2
July-Dec.	200	90.5	85	6	100.0	6
1982 Jan.-June	390	90.3	152	13	76.9	9
July-Dec.	686	88.5	282	15	80.0	4
1983 Jan.-June	1,256	91.8	513	32	93.8	13
July-Dec.	1,628	91.2	915	42	78.6	16
1984 Jan.-June	2,534	88.6	1,369	48	83.3	25
July-Dec.	3,329	89.4	1,910	62	72.6	24
1985 Jan.-June	4,794	88.0	2,726	96	71.9	43
July-Dec.	6,166	86.6	3,703	127	74.8	68
1986 Jan.-June	8,094	84.6	4,883	128	71.9	65
July-Dec.	9,721	81.5	6,195	175	66.3	82
1987 Jan.-June	12,472	79.9	7,197	218	60.1	112
July-Dec.	13,848	72.6	7,559	246	57.3	158
1988 Jan.-June	15,553	64.1	8,750	236	48.3	128
July-Dec.	15,824	56.4	9,910	307	42.3	148
1989 Jan.-June	17,085	44.6	10,987	300	40.7	152
July-Dec.	16,098	34.4	11,571	261	34.9	153
1990 Jan.-June	13,426	20.7	8,753	191	21.5	108
July-Aug.	949	9.1	757	8	12.5	10
Total¹	144,221	61.3	88,433	2,525	52.6	1,328

¹ Death totals include 148 adults/adolescents and 1 child known to have died, but whose date of death is unknown.

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

Definition category ¹	Year of diagnosis					Cumulative total
	Before Sept. 1986	Sept. 1986-Aug. 1987	Sept. 1987-Aug. 1988	Sept. 1988-Aug. 1989	Sept. 1989-Aug. 1990	
	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)
Pre-1987 definition	31,035 (94)	20,545 (86)	22,487 (73)	23,382 (69)	16,891 (67)	114,340 (78)
1987 definition: ²	1,950 (6)	3,484 (14)	8,263 (27)	10,417 (31)	8,292 (33)	32,406 (22)
<i>Specific disease</i>						
<i>presumptively diagnosed</i>	1,050	1,832	4,589	5,885	4,908	18,264
<i>Specific disease</i>						
<i>definitively diagnosed</i>	311	437	572	698	550	2,568
<i>HIV encephalopathy</i>	159	453	1,060	1,245	876	3,793
<i>HIV wasting syndrome</i>	430	762	2,042	2,589	1,958	7,781
Total	32,985 (100)	24,029 (100)	30,750 (100)	33,799 (100)	25,183 (100)	146,746(100)

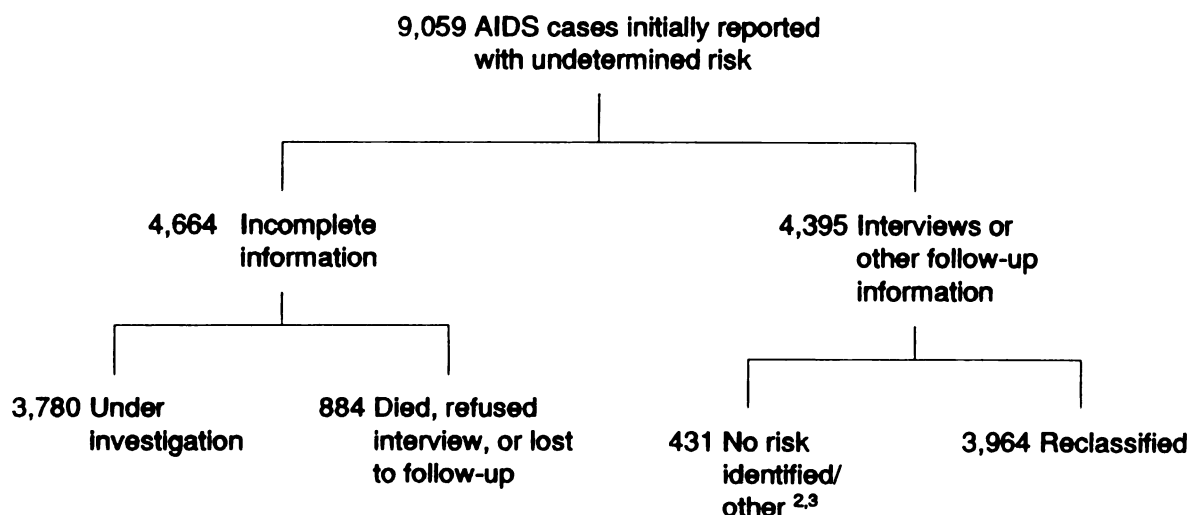
¹ Persons who meet the criteria for more than one definition category are classified in the definition category listed first.

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 August 1990, United States

Exposure category	AIDS cases	
	No.	(%)
Single mode of exposure		
Male homosexual/bisexual contact	82,688	(57)
Intravenous (IV) drug use (female and heterosexual male)	26,701	(19)
Hemophilia/coagulation disorder	788	(1)
Heterosexual contact	7,063	(5)
Receipt of transfusion of blood, blood component, or tissue	3,417	(2)
Other/undetermined	5,095	(4)
Single mode of exposure subtotal	125,752	(87)
Multiple modes of exposure		
Male homosexual/bisexual contact; IV drug use	8,814	(6)
Male homosexual/bisexual contact; hemophilia	29	(0)
Male homosexual/bisexual contact; heterosexual contact	1,726	(1)
Male homosexual/bisexual contact; receipt of transfusion	1,565	(1)
IV drug use; hemophilia	33	(0)
IV drug use; heterosexual contact	3,499	(2)
IV drug use; receipt of transfusion	667	(0)
Hemophilia; heterosexual contact	8	(0)
Hemophilia; receipt of transfusion	480	(0)
Heterosexual contact; receipt of transfusion	355	(0)
Male homosexual/bisexual contact; IV drug use; hemophilia	8	(0)
Male homosexual/bisexual contact; IV drug use; heterosexual contact	658	(0)
Male homosexual/bisexual contact; IV drug use; receipt of transfusion	256	(0)
Male homosexual/bisexual contact; hemophilia; heterosexual contact	4	(0)
Male homosexual/bisexual contact; hemophilia; receipt of transfusion	17	(0)
Male homosexual/bisexual contact; heterosexual contact; receipt of transfusion	84	(0)
IV drug use; hemophilia; heterosexual contact	2	(0)
IV drug use; hemophilia; receipt of transfusion	17	(0)
IV drug use; heterosexual contact; receipt of transfusion	192	(0)
Hemophilia; heterosexual contact; receipt of transfusion	12	(0)
Male homosexual/bisexual contact; IV drug use; hemophilia; receipt of transfusion	7	(0)
Male homosexual/bisexual contact; IV drug use; heterosexual contact; receipt of transfusion	33	(0)
IV drug use; hemophilia; heterosexual contact; receipt of transfusion	3	(0)
Multiple modes of exposure subtotal	18,469	(13)
Total	144,221	(100)

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



¹ Excludes 63 children under 13 years of age who have an undetermined risk: 57 children are under investigation and 6 have died, refused interview, or were lost to follow-up. An additional 102 children who were initially reported with an undetermined risk have been reclassified after investigation.

² **Health-care workers.** 3 of the 431 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 428, the mode of exposure to HIV remains undetermined after investigation. 67 of these are health-care workers, 60 of whom responded to a standardized questionnaire. 35 (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.** 368 of the 428 patients who had no risk identified after follow-up responded to a standardized questionnaire; 116 (35%) of 332 persons responding to questions related to sexually transmitted disease gave a history of such disease and 77 (34%) of 226 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 1989 or 1990 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.

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