

HIV / AIDS

SURVEILLANCE

U.S. AIDS cases reported through February 1990

Issued March 1990

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Centers for Disease ControlWilliam 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 March 1989 through February 1990, United States

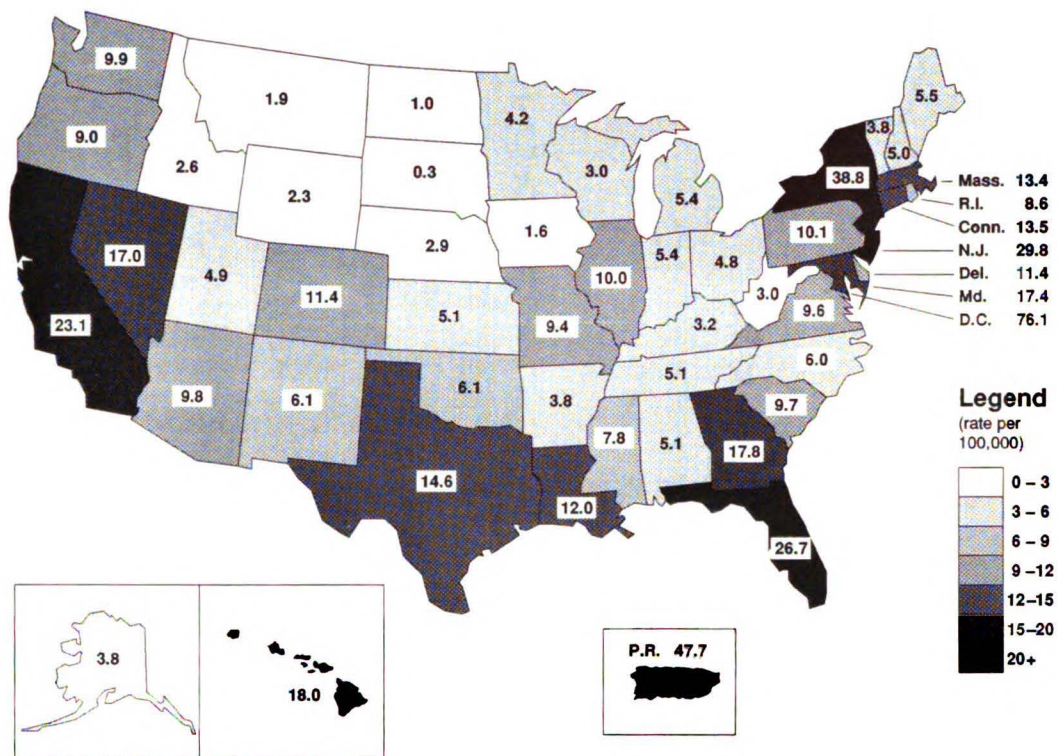


Figure 2. Adult/adolescent and pediatric AIDS cases, reported March 1989 through February 1990, United States

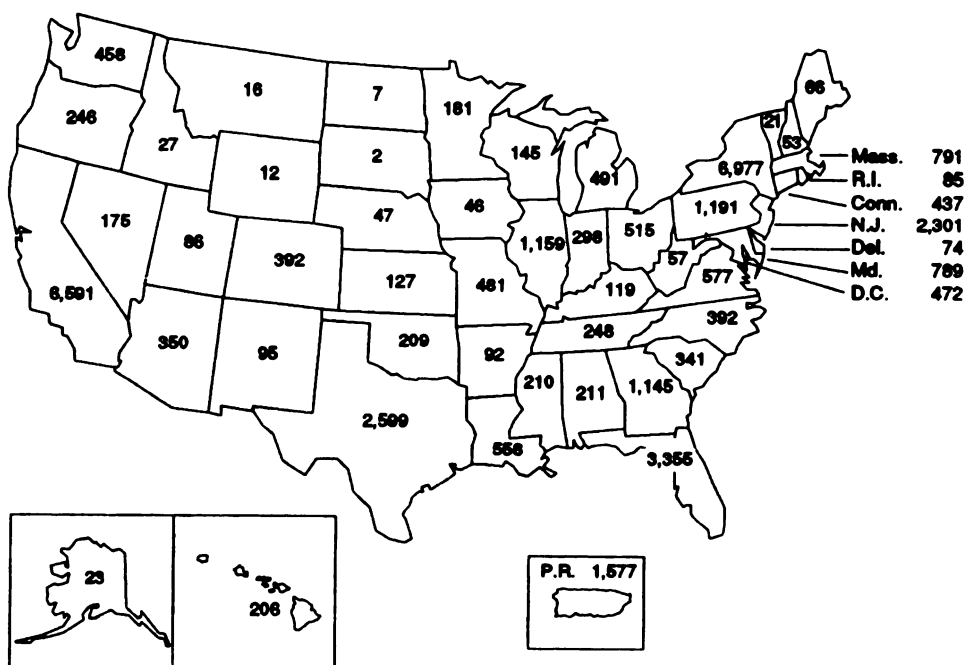


Figure 3. Pediatric AIDS cases, reported March 1989 through February 1990, United States

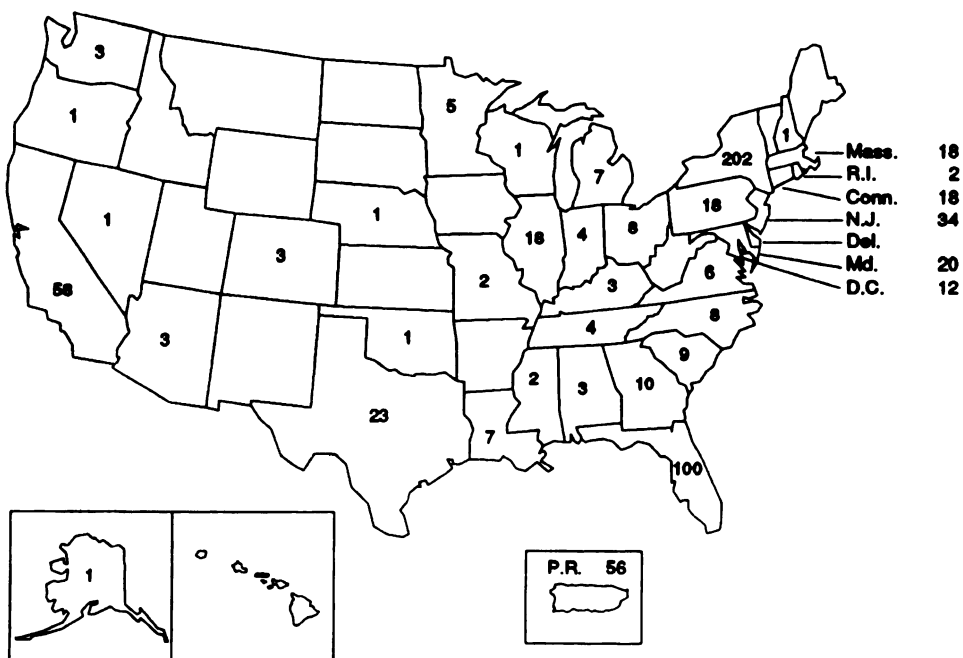


Table 1. AIDS cases and annual rates per 100,000 population, by state, reported March 1988 through February 1989, March 1989 through February 1990; and cumulative totals, by state and age group, through February 1990

State of residence	Mar. 1988- Feb. 1989		Mar. 1989- Feb. 1990		Cumulative totals		
	No.	Rate	No.	Rate	Adults/ adolescents	Children < 13 years old	Total
Alabama	218	5.3	211	5.1	672	16	688
Alaska	15	2.6	23	3.8	80	2	82
Arizona	256	7.3	350	9.8	1,045	6	1,051
Arkansas	80	3.3	92	3.8	274	3	277
California	5,779	20.6	6,591	23.1	24,095	169	24,264
Colorado	325	9.6	392	11.4	1,290	8	1,298
Connecticut	423	13.1	437	13.5	1,476	52	1,528
Delaware	77	12.0	74	11.4	235	4	239
District of Columbia	515	82.8	472	76.1	2,004	29	2,033
Florida	2,895	23.6	3,355	26.7	9,944	276	10,220
Georgia	903	14.3	1,145	17.8	3,237	38	3,275
Hawaii	84	7.5	206	18.0	499	2	501
Idaho	12	1.2	27	2.6	55	2	57
Illinois	1,021	8.8	1,159	10.0	3,584	51	3,635
Indiana	176	3.2	298	5.4	743	8	751
Iowa	54	1.9	46	1.6	167	3	170
Kansas	84	3.4	127	5.1	326	3	329
Kentucky	110	2.9	119	3.2	338	5	343
Louisiana	425	9.2	558	12.0	1,699	25	1,724
Maine	34	2.9	66	5.5	167	2	169
Maryland	608	13.5	789	17.4	2,283	52	2,335
Massachusetts	732	12.4	791	13.4	2,612	50	2,662
Michigan	464	5.1	491	5.4	1,492	22	1,514
Minnesota	166	3.9	181	4.2	652	7	659
Mississippi	120	4.5	210	7.8	431	7	438
Missouri	424	8.3	481	9.4	1,359	10	1,369
Montana	12	1.4	16	1.9	42	—	42
Nebraska	42	2.6	47	2.9	142	1	143
Nevada	119	11.8	175	17.0	463	4	467
New Hampshire	41	3.9	53	5.0	148	4	152
New Jersey	2,448	31.8	2,301	29.8	8,137	222	8,359
New Mexico	58	3.8	95	6.1	249	1	250
New York	7,006	39.1	6,977	38.8	27,370	635	28,005
North Carolina	337	5.2	392	6.0	1,141	23	1,164
North Dakota	4	0.6	7	1.0	18	—	18
Ohio	486	4.5	515	4.8	1,710	27	1,737
Oklahoma	136	4.0	209	6.1	539	9	548
Oregon	173	6.4	246	9.0	740	3	743
Pennsylvania	855	7.2	1,191	10.1	3,443	61	3,504
Rhode Island	91	9.3	85	8.6	298	7	305
South Carolina	185	5.3	341	9.7	732	19	751
South Dakota	7	1.0	2	0.3	17	—	17
Tennessee	301	6.2	248	5.1	780	12	792
Texas	2,396	13.7	2,599	14.6	8,583	74	8,657
Utah	75	4.3	86	4.9	257	5	262
Vermont	11	2.0	21	3.8	58	1	59
Virginia	316	5.3	577	9.6	1,504	25	1,529
Washington	405	8.8	458	9.9	1,584	11	1,595
West Virginia	24	1.3	57	3.0	124	2	126
Wisconsin	107	2.2	145	3.0	442	2	444
Wyoming	9	1.7	12	2.3	31	—	31
U.S. total	31,644	12.9	35,546	14.3	119,311	2,000	121,311
Guam	1	0.8	2	1.5	7	—	7
Pacific Islands, U.S.	1	0.7	—	—	1	—	1
Puerto Rico	1,401	42.5	1,577	47.7	3,481	112	3,593
Virgin Islands, U.S.	47	41.5	17	14.8	68	4	72
Total	33,094	13.3	37,142	14.8	122,868	2,116	124,984

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

Metropolitan area of residence	Mar. 1988- Feb. 1989		Mar. 1989- Feb. 1990		Cumulative totals		
	No.	Rate	No.	Rate	Adults/ adolescents	Children <13 years old	Total
Akron, Ohio	28	4.4	19	3.0	81	—	81
Albany-Schenectady, N.Y.	67	7.9	67	7.9	246	2	248
Allentown, Pa.	31	4.7	45	6.8	115	4	119
Anaheim, Calif.	245	11.0	276	12.2	943	7	950
Atlanta, Ga.	673	24.9	871	31.5	2,447	21	2,468
Austin, Tex.	113	14.0	226	27.0	528	5	533
Bakersfield, Calif.	21	4.0	36	6.6	81	—	81
Baltimore, Md.	363	15.9	499	21.7	1,293	37	1,330
Baton Rouge, La.	41	7.2	53	9.1	146	—	146
Bergen-Passaic, N.J.	275	21.1	249	19.1	1,040	24	1,064
Birmingham, Ala.	77	8.4	67	7.3	215	6	221
Boston, Mass.	585	15.6	617	16.5	2,073	42	2,115
Bridgeport, Conn.	124	14.9	130	15.6	429	16	445
Buffalo, N.Y.	40	4.2	63	6.7	174	—	174
Charleston, S.C.	43	8.4	68	13.0	164	—	164
Charlotte, N.C.	77	7.0	78	7.0	242	4	246
Chicago, Ill.	866	13.9	941	15.0	3,025	36	3,061
Cincinnati, Ohio	62	4.4	73	5.1	236	3	239
Cleveland, Ohio	128	7.0	138	7.5	464	7	471
Columbus, Ohio	116	8.8	108	8.1	374	3	377
Dallas, Tex.	574	22.6	600	23.0	2,107	8	2,115
Dayton, Ohio	52	5.6	60	6.5	176	3	179
Denver, Colo.	265	15.5	313	18.0	1,047	5	1,052
Detroit, Mich.	326	7.6	344	8.1	1,048	16	1,064
El Paso, Tex.	13	2.3	34	5.8	76	1	77
Fort Lauderdale, Fla.	427	35.9	537	44.4	1,622	25	1,647
Fort Worth, Tex.	137	10.3	146	10.6	450	5	455
Fresno, Calif.	46	7.4	52	8.2	140	1	141
Gary, Ind.	12	2.0	35	5.8	71	—	71
Grand Rapids, Mich.	28	4.2	20	3.0	71	1	72
Greensboro, N.C.	56	6.1	55	5.9	169	3	172
Greenville, S.C.	16	2.6	36	5.8	84	—	84
Harrisburg, Pa.	40	6.9	48	8.3	131	4	135
Hartford, Conn.	121	11.1	143	13.1	412	10	422
Honolulu, Hawaii	71	8.2	135	15.4	379	2	381
Houston, Tex.	964	28.2	969	27.7	3,630	31	3,661
Indianapolis, Ind.	85	6.9	147	11.9	333	2	335
Jacksonville, Fla.	155	17.4	205	22.5	508	11	519
Jersey City, N.J.	453	81.4	307	55.2	1,395	33	1,428
Kansas City, Mo.	236	15.4	260	16.8	744	3	747
Knoxville, Tenn.	26	4.3	22	3.6	83	—	83
Las Vegas, Nev.	82	13.5	126	20.2	331	4	335
Little Rock, Ark.	33	6.4	42	8.1	119	1	120
Los Angeles, Calif.	1,946	23.0	2,278	26.5	8,472	73	8,545
Louisville, Ky.	55	5.7	52	5.4	150	2	152
Memphis, Tenn.	92	9.5	75	7.7	248	4	252
Miami, Fla.	774	42.9	856	47.1	2,921	124	3,045
Middlesex, N.J.	217	22.6	179	18.5	650	21	671
Milwaukee, Wis.	60	4.4	81	5.9	253	1	254
Minneapolis-Saint Paul, Minn.	148	6.3	161	6.8	566	6	572
Monmouth-Ocean City, N.J.	145	14.9	186	18.9	484	17	501
Nashville, Tenn.	123	13.0	75	7.8	259	6	265
Nassau-Suffolk, N.Y.	358	13.4	362	13.5	1,285	37	1,322
New Haven, Conn.	137	17.4	120	15.2	462	26	488
New Orleans, La.	241	17.8	339	24.9	1,090	16	1,106
New York, N.Y.	6,055	70.7	5,953	69.3	23,885	576	24,461
Newark, N.J.	1,054	56.0	979	52.1	3,450	99	3,549
Norfolk, Va.	80	5.8	127	9.1	322	7	329

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

Metropolitan area of residence	Mar. 1988- Feb. 1989		Mar. 1989- Feb. 1990		Cumulative totals		
	No.	Rate	No.	Rate	Adults/ adolescents	Children <13 years old	Total
Oakland, Calif.	380	19.0	391	19.3	1,460	10	1,470
Oklahoma City, Okla.	23	2.3	24	2.3	152	—	152
Omaha, Neb.	32	5.1	34	5.4	100	—	100
Orlando, Fla.	179	18.5	165	16.5	493	5	498
Oxnard-Ventura, Calif.	40	6.3	35	5.4	114	—	114
Philadelphia, Pa.	643	13.3	853	17.6	2,594	40	2,634
Phoenix, Ariz.	187	9.0	263	12.3	765	4	769
Pittsburgh, Pa.	80	3.8	174	8.4	444	1	445
Portland, Oreg.	138	11.8	186	15.7	580	1	581
Providence, R.I.	85	9.5	79	8.8	277	6	283
Raleigh-Durham, N.C.	71	10.4	96	13.8	257	7	264
Richmond, Va.	55	6.7	121	14.5	290	1	291
Riverside-San Bernardino, Calif.	170	8.0	243	11.0	724	12	736
Rochester, N.Y.	85	8.6	60	6.0	272	1	273
Sacramento, Calif.	162	11.9	155	11.2	510	5	515
Saint Louis, Mo.	187	7.7	202	8.2	578	6	584
Salt Lake City, Utah	63	5.8	70	6.4	221	4	225
San Antonio, Tex.	267	20.1	207	15.2	604	9	613
San Diego, Calif.	424	18.4	548	23.3	1,702	16	1,718
San Francisco, Calif.	1,734	105.3	1,866	112.1	7,707	15	7,722
San Jose, Calif.	151	10.3	141	9.5	553	6	559
San Juan, P.R.	866	77.4	968	86.1	2,155	80	2,235
Scranton, Pa.	22	3.1	34	4.7	90	3	93
Seattle, Wash.	296	16.4	349	19.1	1,204	9	1,213
Springfield, Mass.	31	5.3	46	7.8	122	1	123
Syracuse, N.Y.	23	3.5	39	5.9	122	4	126
Tacoma, Wash.	18	3.3	34	6.2	100	1	101
Tampa, Fla.	435	21.6	367	17.8	1,155	21	1,176
Toledo, Ohio	21	3.5	26	4.3	80	1	81
Tucson, Ariz.	41	6.6	57	9.1	195	2	197
Tulsa, Okla.	46	6.0	63	8.1	155	2	157
Washington, D.C.	820	22.6	907	24.6	3,420	53	3,473
West Palm Beach, Fla.	310	38.5	319	38.3	1,043	44	1,087
Wilmington, Del.	62	11.1	62	11.0	192	3	195
Worcester, Mass.	45	6.8	36	5.4	127	3	130
Metropolitan area subtotal¹	27,870	19.6	30,303	21.1	104,496	1,777	106,273
All other areas	5,224	4.9	6,839	6.3	18,372	339	18,711
Total	33,094	13.3	37,142	14.8	122,868	2,116	124,984

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

Adult/adolescent exposure category	Males		Females		Totals		Cumulative total ¹
	Mar. 1988-Feb. 1989	Mar. 1989-Feb. 1990	Mar. 1988-Feb. 1989	Mar. 1989-Feb. 1990	Mar. 1988-Feb. 1989	Mar. 1989-Feb. 1990	
	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	
Male homosexual/bisexual contact	18,563 (64)	20,572 (63)	—	—	18,563 (57)	20,572 (56)	73,990 (60)
Intravenous (IV) drug use (female and heterosexual male)	6,087 (21)	6,619 (20)	1,823 (54)	1,944 (50)	7,910 (24)	8,563 (23)	26,092 (21)
Male homosexual/bisexual contact and IV drug use	2,193 (8)	2,193 (7)	—	—	2,193 (7)	2,193 (6)	8,530 (7)
Hemophilia/coagulation disorder	304 (1)	268 (1)	4 (0)	9 (0)	308 (1)	277 (1)	1,114 (1)
Heterosexual contact:	634 (2)	834 (3)	1,044 (31)	1,265 (33)	1,678 (5)	2,099 (6)	6,027 (5)
<i>Sex with IV drug user</i>	273	391	673	815	946	1,206	3,102
<i>Sex with bisexual male</i>	—	—	99	97	99	97	366
<i>Sex with person with hemophilia</i>	1	3	10	22	11	25	55
<i>Born in Pattern-II country</i>	256	301	121	133	377	434	1,724
<i>Sex with person born in Pattern-II country</i>	18	13	6	12	24	25	89
<i>Sex with transfusion recipient with HIV infection</i>	9	13	21	21	30	34	90
<i>Sex with HIV-infected person, risk not specified</i>	77	113	114	165	191	278	601
Receipt of blood transfusion, blood components, or tissue ³	505 (2)	471 (1)	345 (10)	322 (8)	850 (3)	793 (2)	2,984 (2)
Other/undetermined ⁴	852 (3)	1,622 (5)	177 (5)	348 (9)	1,029 (3)	1,970 (5)	4,131 (3)
Adult/adolescent subtotal	29,138 (100)	32,579 (100)	3,393 (100)	3,888 (100)	32,531 (100)	36,467 (100)	122,868 (100)
Pediatric (<13 years old) exposure category							
Hemophilia/coagulation disorder	34 (11)	24 (7)	—	1 (0)	34 (6)	25 (4)	108 (5)
Mother with/at risk for HIV infection:	232 (74)	293 (83)	229 (92)	285 (89)	461 (82)	578 (86)	1,734 (82)
<i>IV drug use</i>	122	142	118	119	240	261	881
<i>Sex with IV drug user</i>	51	73	37	67	88	140	364
<i>Sex with bisexual male</i>	3	7	6	6	9	13	39
<i>Sex with person with hemophilia</i>	—	—	1	—	1	—	7
<i>Born in Pattern-II country</i>	24	28	23	27	47	55	182
<i>Sex with person born in Pattern-II country</i>	—	1	—	3	—	4	7
<i>Sex with transfusion recipient with HIV infection</i>	2	1	2	4	4	5	10
<i>Sex with HIV-infected person, risk not specified</i>	13	9	8	15	21	24	66
<i>Receipt of blood transfusion, blood components, or tissue</i>	1	4	9	7	10	11	36
<i>Has HIV infection, risk not specified</i>	16	28	25	37	41	65	142
Receipt of blood transfusion, blood components, or tissue	40 (13)	27 (8)	14 (6)	17 (5)	54 (10)	44 (7)	219 (10)
Undetermined	8 (3)	11 (3)	6 (2)	17 (5)	14 (2)	28 (4)	55 (3)
Pediatric subtotal	314 (100)	355 (100)	249 (100)	320 (100)	563 (100)	675 (100)	2,116 (100)
Total	29,452	32,934	3,642	4,208	33,094	37,142	124,984

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 February 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	53,155 (77)	12,222 (37)	7,808 (41)	567 (74)	83 (52)	73,990 (60)
Intravenous (IV) drug use (female and heterosexual male)	5,244 (8)	13,010 (39)	7,704 (40)	31 (4)	27 (17)	26,092 (21)
Male homosexual/bisexual contact and IV drug use	5,031 (7)	2,225 (7)	1,229 (6)	12 (2)	21 (13)	8,530 (7)
Hemophilia/coagulation disorder	932 (1)	72 (0)	85 (0)	15 (2)	6 (4)	1,114 (1)
Heterosexual contact:	1,217 (2)	3,747 (11)	1,012 (5)	29 (4)	9 (6)	6,027 (5)
<i>Sex with IV drug user</i>	681	1,572	827	12	4	3,102
<i>Sex with bisexual male</i>	192	120	46	6	1	366
<i>Sex with person with hemophilia</i>	49	4	1	1	—	55
<i>Born in Pattern-II¹ country</i>	3	1,703	9	4	—	1,724
<i>Sex with person born in Pattern-II country</i>	26	60	3	—	—	89
<i>Sex with transfusion recipient with HIV infection</i>	66	14	8	1	—	90
<i>Sex with HIV-infected person, risk not specified</i>	200	274	118	5	4	601
Receipt of blood transfusion, blood components, or tissue ²	2,147 (3)	482 (1)	285 (1)	61 (8)	3 (2)	2,984 (2)
Other/undetermined ³	1,552 (2)	1,569 (5)	913 (5)	48 (6)	10 (6)	4,131 (3)
Adult/adolescent subtotal	69,278(100)	33,327 (100)	19,036(100)	763(100)	159(100)	122,868(100)
Pediatric (<13 years old) exposure category						
Hemophilia/coagulation disorder	75 (16)	15 (1)	14 (3)	3 (33)	—	108 (5)
Mother with/at risk for HIV infection:	259 (56)	1,012 (92)	452 (85)	3 (33)	4(100)	1,734 (82)
<i>IV drug use</i>	126	512	239	1	2	881
<i>Sex with IV drug user</i>	55	163	145	—	—	364
<i>Sex with bisexual male</i>	13	18	8	—	—	39
<i>Sex with person with hemophilia</i>	5	1	1	—	—	7
<i>Born in Pattern-II country</i>	2	179	1	—	—	182
<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>	11	28	24	1	1	66
<i>Receipt of blood transfusion, blood components, or tissue</i>	13	13	10	—	—	36
<i>Has HIV infection, risk not specified</i>	29	89	22	1	1	142
Receipt of blood transfusion, blood components, or tissue	122 (26)	48 (4)	46 (9)	3 (33)	—	219 (10)
Undetermined	9 (2)	29 (3)	17 (3)	—	—	55 (3)
Pediatric subtotal	465(100)	1,104 (100)	529(100)	9(100)	4(100)	2,116(100)
Total	69,743	34,431	19,565	772	163	124,984

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 310 persons whose race/ethnicity is unknown.

Table 5. Adult/adolescent AIDS cases by sex, exposure category, and race/ethnicity, reported through February 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 Intravenous (IV) drug use (heterosexual)	53,155 (80)	12,222 (45)	7,808 (47)	567 (81)	83 (62)	73,990 (66)
Male homosexual/bisexual contact and IV drug use	3,987 (6)	9,606 (35)	6,498 (39)	20 (3)	13 (10)	20,186 (18)
Hemophilia/coagulation disorder	5,031 (8)	2,225 (8)	1,229 (7)	12 (2)	21 (16)	8,530 (8)
Heterosexual contact:	908 (1)	69 (0)	84 (1)	15 (2)	6 (4)	1,086 (1)
	379 (1)	1,887 (7)	186 (1)	5 (1)	1 (1)	2,462 (2)
<i>Sex with IV drug user</i>	245	491	130	1	1	868
<i>Sex with person with hemophilia</i>	4	1	—	—	—	5
<i>Born in Pattern-II¹ country</i>	2	1,250	7	3	—	1,265
<i>Sex with person born in Pattern-II country</i>	24	25	3	—	—	52
<i>Sex with transfusion recipient with HIV infection</i>	16	7	1	—	—	25
<i>Sex with HIV-infected person, risk not specified</i>	88	113	45	1	—	247
Receipt of blood transfusion, blood components, or tissue ²	1,392 (2)	255 (1)	153 (1)	38 (5)	1 (1)	1,844 (2)
Other/undetermined ³	1,336 (2)	1,166 (4)	787 (5)	41 (6)	9 (7)	3,369 (3)
Male subtotal	66,188 (100)	27,430 (100)	16,745 (100)	698 (100)	134 (100)	111,467 (100)
Female						
exposure category						
IV drug use	1,257 (41)	3,404 (58)	1,206 (53)	11 (17)	14 (56)	5,906 (52)
Hemophilia/coagulation disorder	24 (1)	3 (0)	1 (0)	—	—	28 (0)
Heterosexual contact:	838 (27)	1,860 (32)	826 (36)	24 (37)	8 (32)	3,565 (31)
<i>Sex with IV drug user</i>	436	1,081	697	11	3	2,234
<i>Sex with bisexual male</i>	192	120	46	6	1	366
<i>Sex with person with hemophilia</i>	45	3	1	1	—	50
<i>Born in Pattern-II country</i>	1	453	2	1	—	459
<i>Sex with person born in Pattern-II country</i>	2	35	—	—	—	37
<i>Sex with transfusion recipient with HIV infection</i>	50	7	7	1	—	65
<i>Sex with HIV-infected person, risk not specified</i>	112	161	73	4	4	354
Receipt of blood transfusion, blood components, or tissue	755 (24)	227 (4)	132 (6)	23 (35)	2 (8)	1,140 (10)
Other/undetermined	216 (7)	403 (7)	126 (5)	7 (11)	1 (4)	762 (7)
Female subtotal	3,090 (100)	5,897 (100)	2,291 (100)	65 (100)	25 (100)	11,401 (100)
Total	69,278	33,327	19,036	763	159	122,868

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 272 males and 33 females whose race/ethnicity is unknown.

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

Exposure category	13-19 years old			20-24 years old		
	Mar. 1988- Feb. 1989	Mar. 1989- Feb. 1990	Cumulative total	Mar. 1988- Feb. 1989	Mar. 1989- Feb. 1990	Cumulative total
	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)
Male homosexual/bisexual contact	32 (27)	33 (25)	139 (29)	812 (57)	792 (52)	3,104 (58)
Intravenous (IV) drug use (female and heterosexual male)	19 (16)	13 (10)	55 (11)	254 (18)	277 (18)	842 (16)
Male homosexual/bisexual contact and IV drug use	6 (5)	3 (2)	23 (5)	121 (8)	133 (9)	507 (9)
Hemophilia/coagulation disorder	35 (30)	40 (31)	150 (31)	43 (3)	35 (2)	141 (3)
Heterosexual contact:	11 (9)	23 (18)	57 (12)	120 (8)	168 (11)	466 (9)
<i>Sex with IV drug user</i>	5	17	34	75	94	250
<i>Sex with bisexual male</i>	—	1	3	12	9	43
<i>Sex with person with hemophilia</i>	—	1	1	1	8	12
<i>Born in Pattern-II¹ country</i>	3	1	12	11	23	94
<i>Sex with person born in Pattern-II country</i>	—	—	—	—	2	5
<i>Sex with transfusion recipient with HIV infection</i>	—	—	—	—	2	3
<i>Sex with HIV-infected person, risk not specified</i>	3	3	7	21	30	59
Receipt of blood transfusion, blood components, or tissue	13 (11)	5 (4)	38 (8)	25 (2)	8 (1)	79 (1)
Undetermined ²	1 (1)	14 (11)	24 (5)	58 (4)	99 (7)	225 (4)
Total	117 (100)	131 (100)	486 (100)	1,433 (100)	1,512 (100)	5,364 (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 February 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	161 (0)	493 (2)	246 (1)	3 (0)	2 (1)	907 (1)
5-12	125 (0)	68 (0)	42 (0)	3 (0)	—	240 (0)
13-19	195 (0)	112 (0)	68 (0)	5 (1)	3 (2)	384 (0)
20-24	2,389 (4)	1,336 (5)	813 (5)	27 (4)	9 (7)	4,582 (4)
25-29	10,071 (15)	4,538 (16)	2,930 (17)	98 (14)	26 (19)	17,696 (16)
30-34	15,690 (24)	7,106 (25)	4,408 (26)	149 (21)	36 (26)	27,454 (24)
35-39	14,501 (22)	6,395 (23)	3,697 (22)	151 (21)	23 (17)	24,835 (22)
40-44	9,848 (15)	3,581 (13)	2,301 (14)	107 (15)	17 (13)	15,899 (14)
45-49	5,853 (9)	1,997 (7)	1,155 (7)	72 (10)	11 (8)	9,107 (8)
50-54	3,307 (5)	1,126 (4)	659 (4)	39 (6)	3 (2)	5,147 (5)
55-59	2,110 (3)	688 (2)	426 (3)	23 (3)	4 (3)	3,263 (3)
60-64	1,150 (2)	349 (1)	175 (1)	8 (1)	2 (1)	1,689 (1)
65 or older	1,074 (2)	202 (1)	113 (1)	19 (3)	—	1,411 (1)
Male subtotal	66,474 (100)	27,991 (100)	17,033 (100)	704 (100)	136 (100)	112,614 (100)
Females						
Age at diagnosis (years)						
Under 5	150 (5)	480 (7)	209 (8)	1 (1)	2 (7)	843 (7)
5-12	29 (1)	63 (1)	32 (1)	2 (3)	—	126 (1)
13-19	23 (1)	59 (1)	18 (1)	1 (1)	1 (4)	102 (1)
20-24	224 (7)	361 (6)	188 (7)	3 (4)	1 (4)	782 (6)
25-29	592 (18)	1,196 (19)	561 (22)	6 (9)	5 (19)	2,368 (19)
30-34	710 (22)	1,790 (28)	617 (24)	15 (22)	9 (33)	3,149 (25)
35-39	481 (15)	1,288 (20)	451 (18)	6 (9)	4 (15)	2,237 (18)
40-44	252 (8)	586 (9)	235 (9)	13 (19)	2 (7)	1,088 (9)
45-49	134 (4)	252 (4)	96 (4)	6 (9)	—	492 (4)
50-54	113 (3)	147 (2)	48 (2)	4 (6)	1 (4)	313 (3)
55-59	121 (4)	92 (1)	35 (1)	3 (4)	—	252 (2)
60-64	119 (4)	58 (1)	19 (1)	5 (7)	1 (4)	202 (2)
65 or older	321 (10)	68 (1)	23 (1)	3 (4)	1 (4)	416 (3)
Female subtotal	3,269 (100)	6,440 (100)	2,532 (100)	68 (100)	27 (100)	12,370 (100)
Total	69,743	34,431	19,565	772	163	124,984

¹ Includes 310 persons whose race/ethnicity is unknown.

Table 8. AIDS cases, case-fatality rates, and deaths by half-year and age group, through February 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.	196	91.8	83	5	100.0	6
1982 Jan.-June	385	90.6	153	13	76.9	9
July-Dec.	665	89.5	277	14	78.6	4
1983 Jan.-June	1,250	91.4	508	33	93.9	13
July-Dec.	1,613	91.2	904	40	75.0	16
1984 Jan.-June	2,522	88.0	1,361	47	83.0	24
July-Dec.	3,315	88.7	1,896	63	73.0	24
1985 Jan.-June	4,745	87.6	2,706	97	71.1	43
July-Dec.	6,122	85.9	3,682	127	74.8	68
1986 Jan.-June	8,007	83.3	4,829	130	71.5	64
July-Dec.	9,594	79.5	6,125	164	66.5	82
1987 Jan.-June	12,294	76.2	7,092	207	58.9	111
July-Dec.	13,569	66.5	7,429	243	55.1	153
1988 Jan.-June	15,006	56.5	8,556	218	45.0	122
July-Dec.	15,010	47.6	9,594	280	38.2	146
1989 Jan.-June	15,549	34.9	10,340	251	37.1	140
July-Dec.	12,044	21.6	8,576	163	25.8	105
1990 Jan.-Feb.	814	10.4	546	7	0.0	5
Total²	122,868	60.9	74,887	2,116	54.0	1,143

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

² Death totals include 162 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 February 1990, United States

Definition category ¹	Year of diagnosis					Cumulative total
	Before Mar. 1986	Mar. 1986-Feb. 1987	Mar. 1987-Feb. 1988	Mar. 1988-Feb. 1989	Mar. 1989-Feb. 1990	
	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	
Pre-1987 definition	23,005 (96)	17,212 (89)	21,350 (78)	21,645 (70)	16,056 (68)	99,268 (79)
1987 definition: ²	957 (4)	2,072 (11)	5,860 (22)	9,188 (30)	7,639 (32)	25,716 (21)
<i>Specific disease</i>						
<i>presumptively diagnosed</i>	508	1,119	3,166	5,195	4,304	14,292
<i>Specific disease</i>						
<i>definitively diagnosed</i>	189	282	522	622	523	2,138
<i>HIV encephalopathy</i>	70	228	769	1,111	843	3,021
<i>HIV wasting syndrome</i>	190	443	1,403	2,260	1,969	6,265
Total	23,962 (100)	19,284 (100)	27,210 (100)	30,833 (100)	23,695 (100)	124,984 (100)

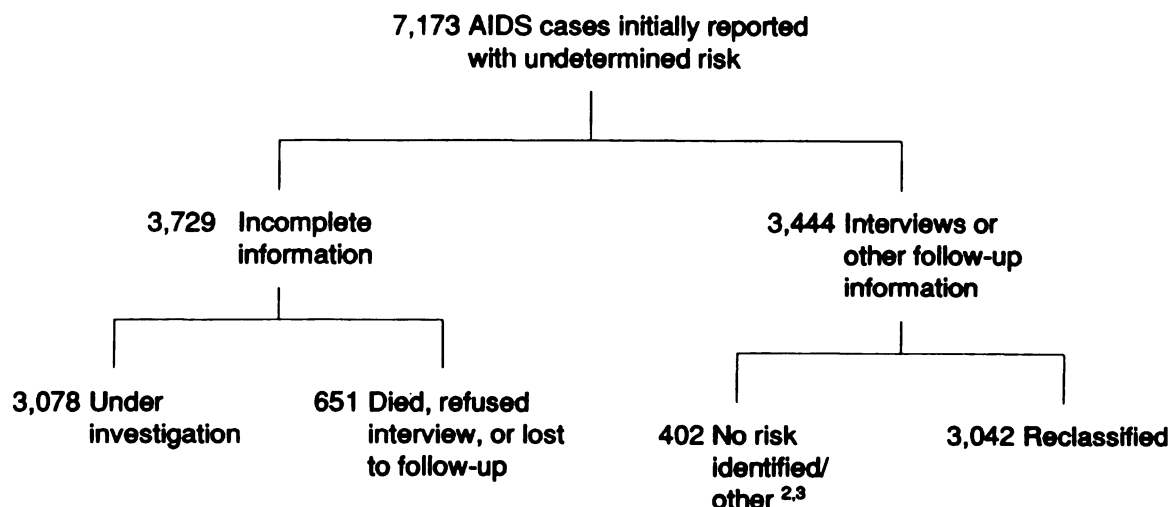
¹ Persons who meet the criteria for more than one definition category are classified in the definition category listed first.

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 February 1990, United States

Exposure category	AIDS cases	
	No.	(%)
Single mode of exposure		
Male homosexual/bisexual contact	71,026	(58)
Intravenous (IV) drug use (female and heterosexual male)	22,332	(18)
Hemophilia/coagulation disorder	668	(1)
Heterosexual contact	5,737	(5)
Receipt of transfusion of blood, blood component, or tissue	2,984	(2)
Other/undetermined	4,131	(3)
Single mode of exposure subtotal	106,878	(87)
Multiple modes of exposure		
Male homosexual/bisexual contact; IV drug use	7,707	(6)
Male homosexual/bisexual contact; hemophilia	27	(0)
Male homosexual/bisexual contact; heterosexual contact	1,441	(1)
Male homosexual/bisexual contact; receipt of transfusion	1,400	(1)
IV drug use; hemophilia	30	(0)
IV drug use; heterosexual contact	2,933	(2)
IV drug use; receipt of transfusion	602	(0)
Hemophilia; heterosexual contact	5	(0)
Hemophilia; receipt of transfusion	432	(0)
Heterosexual contact; receipt of transfusion	290	(0)
Male homosexual/bisexual contact; IV drug use; hemophilia	11	(0)
Male homosexual/bisexual contact; IV drug use; heterosexual contact	548	(0)
Male homosexual/bisexual contact; IV drug use; receipt of transfusion	229	(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	77	(0)
IV drug use; hemophilia; heterosexual contact	4	(0)
IV drug use; hemophilia; receipt of transfusion	17	(0)
IV drug use; heterosexual contact; receipt of transfusion	169	(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	27	(0)
IV drug use; hemophilia; heterosexual contact; receipt of transfusion	5	(0)
Multiple modes of exposure subtotal	15,990	(13)
Total	122,868	(100)

Figure 4. Results of investigations of adult/adolescent AIDS cases with undetermined risk, reported through February 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 82 children who were initially reported with an undetermined risk have been reclassified after investigation.

² **Health-care workers.** 2 of the 402 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 400, 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.** 333 of the 400 patients who had no risk identified after follow-up responded to a standardized questionnaire; 110 (37%) of 297 persons responding to questions related to sexually transmitted disease gave a history of such disease and 71 (34%) of 209 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.