

HIV/AIDS

SURVEILLANCE

U.S. AIDS cases reported through July 1990

Issued August 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 August 1989 through July 1990, United States

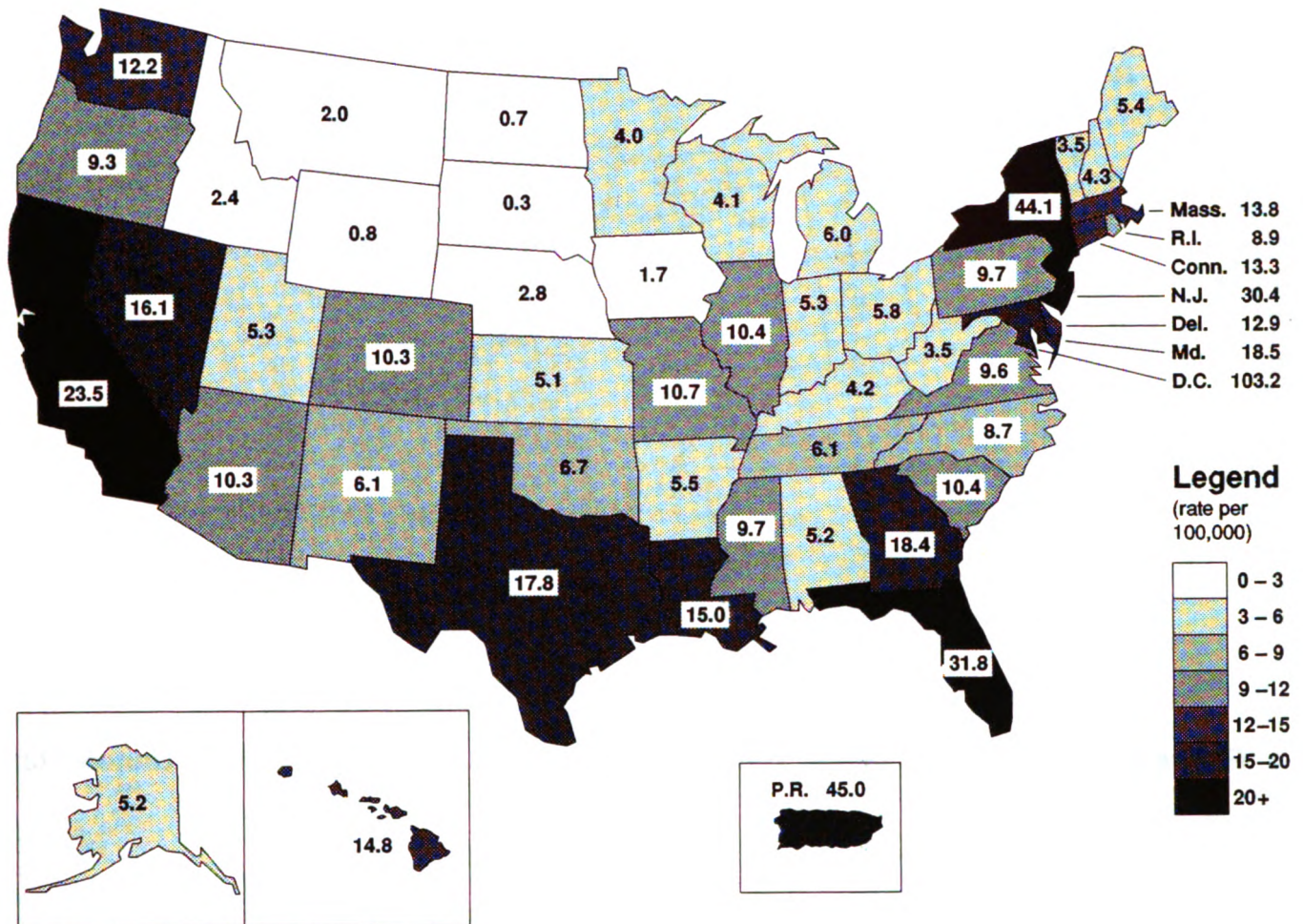


Figure 2. Adult/adolescent and pediatric AIDS cases, reported August 1989 through July 1990, United States

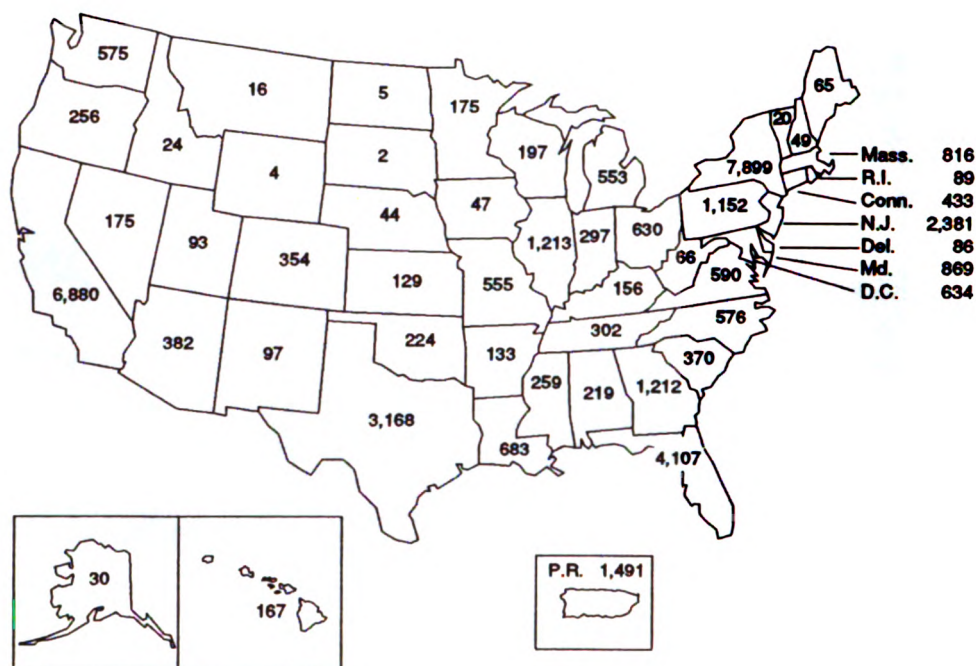


Figure 3. Pediatric AIDS cases, reported August 1989 through July 1990, United States

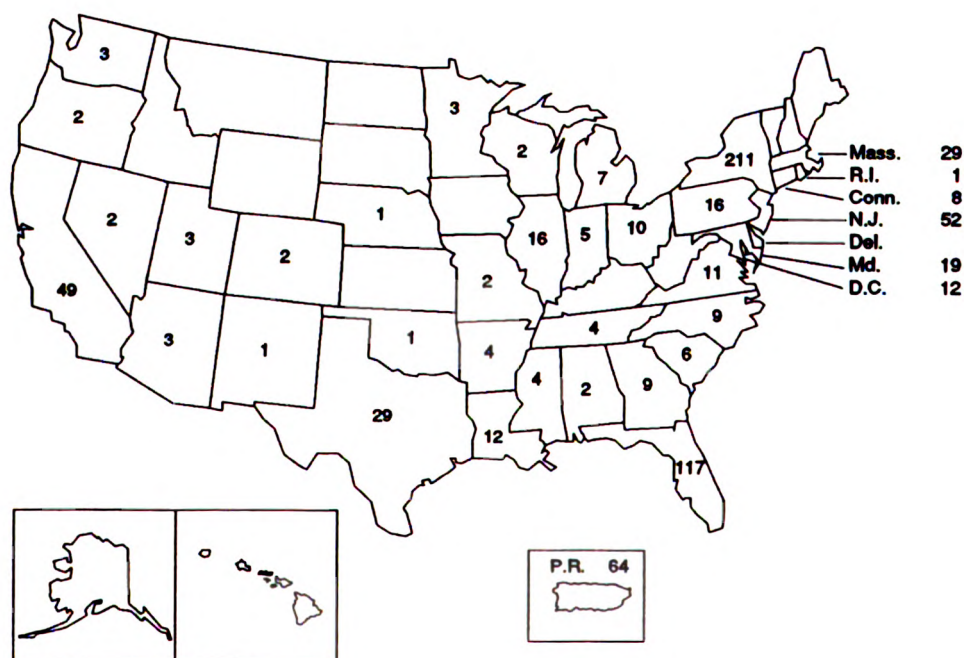


Table 1. AIDS cases and annual rates per 100,000 population, by state, reported August 1988 through July 1989, August 1989 through July 1990; and cumulative totals, by state and age group, through July 1990¹

State of residence	Aug. 1988- July 1989		Aug. 1989- July 1990		Cumulative totals		
	No.	Rate	No.	Rate	Adults/ adolescents	Children < 13 years old	Total
Alabama	225	5.4	219	5.2	767	17	784
Alaska	14	2.5	30	5.2	94	2	96
Arizona	273	7.5	382	10.3	1,189	7	1,196
Arkansas	76	3.1	133	5.5	344	7	351
California	5,848	20.3	6,880	23.5	27,012	190	27,202
Colorado	347	10.2	354	10.3	1,410	8	1,418
Connecticut	440	13.5	433	13.3	1,660	53	1,713
Delaware	83	12.6	86	12.9	274	4	278
District of Columbia	523	84.8	634	103.2	2,394	34	2,428
Florida	2,974	23.6	4,107	31.8	12,012	339	12,351
Georgia	984	15.2	1,212	18.4	3,697	42	3,739
Hawaii	139	12.5	167	14.8	555	2	557
Idaho	20	2.0	24	2.4	65	2	67
Illinois	1,003	8.6	1,213	10.4	4,134	59	4,193
Indiana	237	4.3	297	5.3	863	10	873
Iowa	54	1.9	47	1.7	184	3	187
Kansas	96	3.8	129	5.1	383	3	386
Kentucky	112	3.0	156	4.2	422	5	427
Louisiana	459	10.2	683	15.0	1,992	34	2,026
Maine	45	3.7	65	5.4	192	2	194
Maryland	623	13.4	869	18.5	2,636	62	2,698
Massachusetts	755	12.8	816	13.8	2,933	65	2,998
Michigan	477	5.2	553	6.0	1,732	26	1,758
Minnesota	172	4.0	175	4.0	712	8	720
Mississippi	158	5.9	259	9.7	570	9	579
Missouri	380	7.4	555	10.7	1,569	10	1,579
Montana	12	1.5	16	2.0	47	—	47
Nebraska	41	2.6	44	2.8	153	2	155
Nevada	143	13.5	175	16.1	538	5	543
New Hampshire	47	4.2	49	4.3	165	4	169
New Jersey	2,378	30.5	2,381	30.4	9,193	254	9,447
New Mexico	84	5.3	97	6.1	292	2	294
New York	6,234	34.9	7,899	44.1	30,632	724	31,356
North Carolina	344	5.2	576	8.7	1,448	29	1,477
North Dakota	6	0.9	5	0.7	20	—	20
Ohio	479	4.4	630	5.8	2,008	32	2,040
Oklahoma	157	4.7	224	6.7	645	10	655
Oregon	206	7.5	256	9.3	858	5	863
Pennsylvania	1,008	8.5	1,152	9.7	3,939	67	4,006
Rhode Island	86	8.7	89	8.9	337	7	344
South Carolina	259	7.4	370	10.4	911	21	932
South Dakota	6	0.8	2	0.3	18	—	18
Tennessee	277	5.6	302	6.1	944	14	958
Texas	2,418	13.9	3,168	17.8	10,037	85	10,122
Utah	80	4.6	93	5.3	293	8	301
Vermont	10	1.8	20	3.5	63	1	64
Virginia	461	7.6	590	9.6	1,782	32	1,814
Washington	427	9.2	575	12.2	1,890	11	1,901
West Virginia	38	2.0	66	3.5	153	2	155
Wisconsin	114	2.4	197	4.1	550	3	553
Wyoming	16	3.2	4	0.8	32	—	32
U.S. total	31,848	12.8	39,458	15.8	136,743	2,321	139,064
Guam	1	0.7	1	0.7	7	—	7
Pacific Islands, U.S.	1	0.7	1	0.7	2	—	2
Puerto Rico	1,361	41.1	1,491	45.0	3,997	139	4,136
Virgin Islands, U.S.	36	31.3	9	7.7	73	4	77
Total	33,247	13.2	40,960	16.1	140,822	2,464	143,286

¹ During July 1990, 3,437 cases and 2,175 deaths among adults/adolescents and 84 cases and 39 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 August 1988 through July 1989, August 1989 through July 1990; and cumulative totals, by area and age group, through July 1990

Metropolitan area of residence	Aug. 1988- July 1989		Aug. 1989- July 1990		Cumulative totals		
	No.	Rate	No.	Rate	Adults/ adolescents	Children <13 years old	Total
Akron, Ohio	29	4.5	28	4.3	95	—	95
Albany-Schenectady, N.Y.	54	6.4	98	11.5	293	3	296
Albuquerque, N.M.	44	8.6	52	10.0	156	1	157
Allentown, Pa.	29	4.3	52	7.6	138	4	142
Anaheim, Calif.	284	12.4	342	14.7	1,188	8	1,196
Atlanta, Ga.	781	27.6	922	31.7	2,825	25	2,850
Austin, Tex.	155	19.6	245	29.9	627	5	632
Bakersfield, Calif.	24	4.5	38	7.0	99	—	99
Baltimore, Md.	408	17.4	594	25.2	1,586	46	1,632
Baton Rouge, La.	50	9.1	66	11.9	178	2	180
Bergen-Passaic, N.J.	245	18.9	301	23.2	1,203	25	1,228
Birmingham, Ala.	84	9.0	68	7.3	247	6	253
Boston, Mass.	613	16.3	608	16.1	2,324	50	2,374
Bridgeport, Conn.	139	16.9	112	13.6	496	17	513
Buffalo, N.Y.	40	4.2	107	11.4	235	2	237
Charleston, S.C.	53	10.2	85	16.0	215	—	215
Charlotte, N.C.	69	6.1	107	9.3	296	5	301
Chicago, Ill.	828	13.3	1,023	16.4	3,501	44	3,545
Cincinnati, Ohio	60	4.1	118	8.1	305	6	311
Cleveland, Ohio	124	6.7	135	7.4	517	7	524
Columbus, Ohio	115	8.5	133	9.8	442	3	445
Dallas, Tex.	583	22.4	711	26.6	2,474	12	2,486
Dayton, Ohio	57	6.1	57	6.1	195	3	198
Denver, Colo.	283	16.7	289	16.8	1,150	5	1,155
Detroit, Mich.	331	7.6	403	9.3	1,231	19	1,250
El Paso, Tex.	14	2.3	44	7.1	93	1	94
Fort Lauderdale, Fla.	471	39.3	910	74.7	2,239	46	2,285
Fort Worth, Tex.	141	10.4	183	13.1	545	7	552
Fresno, Calif.	50	8.1	59	9.4	171	2	173
Gary, Ind.	18	3.0	28	4.8	76	—	76
Grand Rapids, Mich.	29	4.3	22	3.2	80	1	81
Greensboro, N.C.	60	6.4	92	9.7	224	4	228
Greenville, S.C.	29	4.7	44	7.0	112	—	112
Harrisburg, Pa.	49	8.3	39	6.6	146	4	150
Hartford, Conn.	136	12.2	160	14.2	493	10	503
Honolulu, Hawaii	100	11.8	116	13.5	423	2	425
Houston, Tex.	881	26.6	1,245	36.9	4,231	31	4,262
Indianapolis, Ind.	116	9.3	151	12.0	411	3	414
Jacksonville, Fla.	158	17.2	240	25.5	622	12	634
Jersey City, N.J.	410	75.5	326	60.2	1,561	36	1,597
Kansas City, Mo.	196	12.4	332	20.8	888	3	891
Knoxville, Tenn.	28	4.7	26	4.3	99	—	99
Lake County, Ill.	15	2.9	17	3.3	65	2	67
Las Vegas, Nev.	104	16.4	134	20.5	396	5	401
Little Rock, Ark.	31	5.9	57	10.8	146	3	149
Los Angeles, Calif.	2,031	23.1	2,213	24.8	9,375	86	9,461
Louisville, Ky.	44	4.5	64	6.6	178	2	180
Memphis, Tenn.	79	8.0	106	10.6	311	6	317
Miami, Fla.	907	49.7	1,082	58.9	3,600	150	3,750
Middlesex, N.J.	204	20.5	179	17.7	732	24	756
Milwaukee, Wis.	68	4.9	111	8.0	323	1	324
Minneapolis-Saint Paul, Minn.	153	6.4	161	6.6	639	6	645
Mobile, Ala.	43	8.7	36	7.2	162	—	162
Monmouth-Ocean City, N.J.	167	16.8	186	18.4	569	21	590
Nashville, Tenn.	97	9.8	88	8.7	304	6	310
Nassau-Suffolk, N.Y.	315	12.0	450	17.1	1,479	37	1,516
New Haven, Conn.	124	15.5	129	16.1	530	26	556
New Orleans, La.	285	21.3	401	29.8	1,280	18	1,298

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

Metropolitan area of residence	Aug. 1988- July 1989		Aug. 1989- July 1990		Cumulative totals		
	No.	Rate	No.	Rate	Adults/ adolescents	Children <13 years old	Total
New York, N.Y.	5,437	63.4	6,565	76.3	26,581	655	27,236
Newark, N.J.	988	52.0	994	52.2	3,875	114	3,989
Norfolk, Va.	94	6.7	152	10.7	389	7	396
Oakland, Calif.	321	15.9	502	24.5	1,707	10	1,717
Oklahoma City, Okla.	81	8.2	118	11.7	331	—	331
Omaha, Neb.	29	4.6	35	5.6	111	1	112
Orlando, Fla.	160	16.1	203	19.7	583	7	590
Oxnard-Ventura, Calif.	39	6.0	36	5.4	130	—	130
Philadelphia, Pa.	724	14.7	834	16.9	2,964	45	3,009
Phoenix, Ariz.	187	8.9	284	13.0	870	4	874
Pittsburgh, Pa.	139	6.7	141	6.9	502	2	504
Portland, Oreg.	160	13.5	199	16.7	676	2	678
Providence, R.I.	79	8.7	84	9.2	314	6	320
Raleigh-Durham, N.C.	68	9.7	136	19.1	320	9	329
Richmond, Va.	98	11.6	122	14.3	345	7	352
Riverside-San Bernardino, Calif.	208	9.1	283	11.9	894	14	908
Rochester, N.Y.	65	6.6	90	9.2	319	2	321
Sacramento, Calif.	164	11.7	126	8.8	558	5	563
Saint Louis, Mo.	184	7.4	200	8.0	666	6	672
Salt Lake City, Utah	67	6.1	80	7.2	257	5	262
San Antonio, Tex.	342	24.8	217	15.3	704	9	713
San Diego, Calif.	461	19.1	682	27.6	2,067	17	2,084
San Francisco, Calif.	1,676	104.0	1,935	119.1	8,500	17	8,517
San Jose, Calif.	151	10.5	154	10.6	632	7	639
San Juan, P.R.	861	55.1	947	60.4	2,481	92	2,573
Scranton, Pa.	22	3.0	35	4.8	102	3	105
Seattle, Wash.	323	17.5	437	23.3	1,446	10	1,456
Springfield, Mass.	38	6.5	67	11.4	156	8	164
Syracuse, N.Y.	15	2.3	57	8.8	141	5	146
Tacoma, Wash.	28	5.0	40	7.0	122	1	123
Tampa, Fla.	391	19.0	421	20.0	1,390	23	1,413
Toledo, Ohio	16	2.6	47	7.7	103	3	106
Tucson, Ariz.	57	8.7	65	9.8	224	2	226
Tulsa, Okla.	50	6.7	58	7.7	182	3	185
Washington, D.C.	876	23.3	1,059	27.7	4,006	60	4,066
West Palm Beach, Fla.	303	35.8	353	40.3	1,198	52	1,250
Wilmington, Del.	70	12.3	74	12.8	226	3	229
Worcester, Mass.	33	4.9	40	5.9	141	4	145
Metropolitan area subtotal¹	28,040	19.2	33,997	23.0	120,732	2,073	122,805
All other areas	5,207	5.1	6,963	6.7	20,090	391	20,481
Total	33,247	13.3	40,960	16.3	140,822	2,464	143,286

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

Adult/adolescent exposure category	Males		Females		Totals		
	Aug. 1988-July 1989	Aug. 1989-July 1990	Aug. 1988-July 1989	Aug. 1989-July 1990	Aug. 1988-July 1989	Aug. 1989-July 1990	Cumulative total ¹
	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)
Male homosexual/bisexual contact	18,851 (64)	22,510 (63)	—	—	18,851 (58)	22,510 (56)	84,241 (60)
Intravenous (IV) drug use (female and heterosexual male)	5,892 (20)	7,294 (20)	1,768 (52)	2,163 (49)	7,660 (23)	9,457 (24)	30,256 (21)
Male homosexual/bisexual contact and IV drug use	2,116 (7)	2,334 (7)	—	—	2,116 (6)	2,334 (6)	9,609 (7)
Hemophilia/coagulation disorder	303 (1)	297 (1)	7 (0)	8 (0)	310 (1)	305 (1)	1,258 (1)
Heterosexual contact:	682 (2)	946 (3)	1,077 (32)	1,488 (34)	1,759 (5)	2,434 (6)	7,175 (5)
<i>Sex with IV drug user</i>	351	416	695	936	1,046	1,352	3,759
<i>Sex with bisexual male</i>	—	—	86	123	86	123	430
<i>Sex with person with hemophilia</i>	2	1	9	26	11	27	64
<i>Born in Pattern-II² country</i>	221	317	117	142	338	459	1,886
<i>Sex with person born in Pattern-II country</i>	11	18	9	23	20	41	106
<i>Sex with transfusion recipient with HIV infection</i>	9	19	24	29	33	48	116
<i>Sex with HIV-infected person, risk not specified</i>	88	175	137	209	225	384	814
Receipt of blood transfusion, blood components, or tissue ³	443 (2)	515 (1)	333 (10)	342 (8)	776 (2)	857 (2)	3,351 (2)
Other/undetermined ⁴	961 (3)	1,904 (5)	192 (6)	427 (10)	1,153 (4)	2,331 (6)	4,932 (4)
Adult/adolescent subtotal	29,248 (100)	35,800 (100)	3,377 (100)	4,428 (100)	32,625 (100)	40,228 (100)	140,822 (100)
Pediatric (<13 years old) exposure category							
Hemophilia/coagulation disorder	32 (9)	30 (8)	1 (0)	—	33 (5)	30 (4)	125 (5)
Mother with/at risk for HIV infection:	271 (78)	299 (80)	255 (92)	325 (90)	526 (85)	624 (85)	2,035 (83)
<i>IV drug use</i>	138	144	111	150	249	294	1,025
<i>Sex with IV drug user</i>	57	70	59	70	116	140	424
<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>	29	22	26	24	55	46	202
<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	—	4	3	7	3	11
<i>Sex with HIV-infected person, risk not specified</i>	12	13	12	20	24	33	86
<i>Receipt of blood transfusion, blood components, or tissue</i>	3	7	7	3	10	10	41
<i>Has HIV infection, risk not specified</i>	22	35	30	43	52	78	181
Receipt of blood transfusion, blood components, or tissue	36 (10)	26 (7)	13 (5)	16 (4)	49 (8)	42 (6)	238 (10)
Undetermined	7 (2)	17 (5)	7 (3)	19 (5)	14 (2)	36 (5)	66 (3)
Pediatric subtotal	346 (100)	372 (100)	276 (100)	360 (100)	622 (100)	732 (100)	2,464 (100)
Total	29,594	36,172	3,653	4,788	33,247	40,960	143,286

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 12 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 July 1990, United States

Adult/adolescent exposure category	White, not Hispanic No. (%)	Black, not Hispanic No. (%)	Hispanic No. (%)	Asian/Pacific Islander No. (%)	American Indian/ Alaskan Native No. (%)	Total⁴ No. (%)
Male homosexual/bisexual contact	60,322 (76)	14,107 (36)	8,873 (41)	643 (75)	109 (55)	84,241 (60)
Intravenous (IV) drug use (female and heterosexual male)	6,139 (8)	15,162 (39)	8,802 (40)	35 (4)	33 (17)	30,256 (21)
Male homosexual/bisexual contact and IV drug use	5,618 (7)	2,560 (7)	1,375 (6)	16 (2)	26 (13)	9,609 (7)
Hemophilia/coagulation disorder	1,051 (1)	84 (0)	97 (0)	14 (2)	8 (4)	1,258 (1)
Heterosexual contact:	1,500 (2)	4,398 (11)	1,219 (6)	30 (3)	9 (5)	7,175 (5)
<i>Sex with IV drug user</i>	833	1,926	972	13	6	3,759
<i>Sex with bisexual male</i>	235	137	50	6	1	430
<i>Sex with person with hemophilia</i>	57	6	1	—	—	64
<i>Born in Pattern-II¹ country</i>	5	1,860	11	4	—	1,886
<i>Sex with person born in Pattern-II country</i>	35	65	5	—	—	106
<i>Sex with transfusion recipient with HIV infection</i>	79	19	15	1	—	116
<i>Sex with HIV-infected person, risk not specified</i>	256	385	165	6	2	814
Receipt of blood transfusion, blood components, or tissue ²	2,388 (3)	561 (1)	324 (1)	68 (8)	3 (2)	3,351 (2)
Other/undetermined ³	1,860 (2)	1,901 (5)	1,062 (5)	55 (6)	11 (6)	4,932 (4)
Adult/adolescent subtotal	78,878(100)	38,773 (100)	21,752(100)	861(100)	199(100)	140,822(100)
Pediatric (<13 years old) exposure category						
Hemophilia/coagulation disorder	86 (16)	17 (1)	18 (3)	3 (25)	—	125 (5)
Mother with/at risk for HIV infection:	313 (59)	1,167 (92)	541 (85)	4 (33)	5(100)	2,035 (83)
<i>IV drug use</i>	155	580	285	1	2	1,025
<i>Sex with IV drug user</i>	68	183	171	1	—	424
<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	199	1	—	—	202
<i>Sex with person born in Pattern-II country</i>	—	9	—	—	—	10
<i>Sex with transfusion recipient with HIV infection</i>	5	3	3	—	—	11
<i>Sex with HIV-infected person, risk not specified</i>	15	39	29	1	1	86
<i>Receipt of blood transfusion, blood components, or tissue</i>	14	16	11	—	—	41
<i>Has HIV infection, risk not specified</i>	31	116	31	1	2	181
Receipt of blood transfusion, blood components, or tissue	128 (24)	52 (4)	53 (8)	5 (42)	—	238 (10)
Undetermined	8 (1)	36 (3)	22 (3)	—	—	66 (3)
Pediatric subtotal	535(100)	1,272 (100)	634(100)	12(100)	5(100)	2,464(100)
Total	79,413	40,045	22,386	873	204	143,286

¹ See technical notes.

² Includes 12 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 365 persons whose race/ethnicity is unknown.

Table 5. Adult/adolescent AIDS cases by sex, exposure category, and race/ethnicity, reported through July 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	60,322 (80)	14,107 (44)	8,873 (46)	643 (81)	109 (63)	84,241 (66)
Intravenous (IV) drug use (heterosexual)	4,687 (6)	11,163 (35)	7,416 (39)	23 (3)	18 (10)	23,379 (18)
Male homosexual/bisexual contact and IV drug use	5,618 (7)	2,560 (8)	1,375 (7)	16 (2)	26 (15)	9,609 (8)
Hemophilia/coagulation disorder	1,027 (1)	78 (0)	96 (1)	14 (2)	8 (5)	1,227 (1)
Heterosexual contact:	474 (1)	2,164 (7)	253 (1)	6 (1)	2 (1)	2,904 (2)
<i>Sex with IV drug user</i>	299	607	167	2	2	1,077
<i>Sex with person with hemophilia</i>	4	—	—	—	—	4
<i>Born in Pattern-II¹ country</i>	3	1,359	8	3	—	1,377
<i>Sex with person born in Pattern-II country</i>	31	25	4	—	—	60
<i>Sex with transfusion recipient with HIV infection</i>	23	10	2	—	—	36
<i>Sex with HIV-infected person, risk not specified</i>	114	163	72	1	—	350
Receipt of blood transfusion, blood components, or tissue ²	1,537 (2)	299 (1)	169 (1)	43 (5)	1 (1)	2,055 (2)
Other/undetermined ³	1,615 (2)	1,396 (4)	911 (5)	46 (6)	8 (5)	4,012 (3)
Male subtotal	75,280 (100)	31,767 (100)	19,093 (100)	791 (100)	172 (100)	127,427 (100)
Female						
exposure category						
IV drug use	1,452 (40)	3,999 (57)	1,386 (52)	12 (17)	15 (56)	6,877 (51)
Hemophilia/coagulation disorder	24 (1)	6 (0)	1 (0)	—	—	31 (0)
Heterosexual contact:	1,026 (29)	2,234 (32)	966 (36)	24 (34)	7 (26)	4,271 (32)
<i>Sex with IV drug user</i>	534	1,319	805	11	4	2,682
<i>Sex with bisexual male</i>	235	137	50	6	1	430
<i>Sex with person with hemophilia</i>	53	6	1	—	—	60
<i>Born in Pattern-II country</i>	2	501	3	1	—	509
<i>Sex with person born in Pattern-II country</i>	4	40	1	—	—	46
<i>Sex with transfusion recipient with HIV infection</i>	56	9	13	1	—	80
<i>Sex with HIV-infected person, risk not specified</i>	142	222	93	5	2	464
Receipt of blood transfusion, blood components, or tissue	851 (24)	262 (4)	155 (6)	25 (36)	2 (7)	1,296 (10)
Other/undetermined	245 (7)	505 (7)	151 (6)	9 (13)	3 (11)	920 (7)
Female subtotal	3,598 (100)	7,006 (100)	2,659 (100)	70 (100)	27 (100)	13,395 (100)
Total	78,878	38,773	21,752	861	199	140,822

¹ See technical notes.

² Includes 12 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 324 males and 35 females whose race/ethnicity is unknown.

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

Exposure category	13-19 years old			20-24 years old		
	Aug.1988- July 1989	Aug. 1989- July 1990	Cumulative total	Aug. 1988- July 1989	Aug. 1989- July 1990	Cumulative total
	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)
Male homosexual/bisexual contact	35 (30)	33 (21)	154 (28)	799 (57)	818 (51)	3,464 (57)
Intravenous (IV) drug use (female and heterosexual male)	17 (14)	13 (8)	62 (11)	233 (17)	290 (18)	967 (16)
Male homosexual/bisexual contact and IV drug use	2 (2)	4 (3)	24 (4)	116 (8)	147 (9)	580 (10)
Hemophilia/coagulation disorder	36 (31)	48 (31)	173 (31)	44 (3)	30 (2)	154 (3)
Heterosexual contact:	14 (12)	31 (20)	70 (13)	134 (10)	184 (12)	549 (9)
<i>Sex with IV drug user</i>	8	21	43	78	108	304
<i>Sex with bisexual male</i>	—	1	3	10	6	43
<i>Sex with person with hemophilia</i>	—	1	1	4	6	14
<i>Born in Pattern-II¹</i>	3	2	13	16	25	104
<i>Sex with person born in Pattern-II country</i>	—	—	—	1	4	7
<i>Sex with transfusion recipient with HIV infection</i>	—	—	—	—	5	6
<i>Sex with HIV-infected person, risk not specified</i>	3	6	10	25	30	71
Receipt of blood transfusion, blood components, or tissue	11 (9)	7 (5)	43 (8)	21 (1)	17 (1)	91 (2)
Undetermined ²	3 (3)	19 (12)	32 (6)	54 (4)	114 (7)	255 (4)
Total	118 (100)	155 (100)	558 (100)	1,401 (100)	1,600 (100)	6,060 (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 July 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	183 (0)	568 (2)	278 (1)	3 (0)	2 (1)	1,037 (1)
5-12	146 (0)	81 (0)	55 (0)	5 (1)	—	289 (0)
13-19	212 (0)	130 (0)	80 (0)	5 (1)	4 (2)	432 (0)
20-24	2,656 (4)	1,524 (5)	911 (5)	27 (3)	12 (7)	5,141 (4)
25-29	11,459 (15)	5,194 (16)	3,342 (17)	107 (13)	38 (22)	20,180 (16)
30-34	17,755 (23)	8,154 (25)	4,989 (26)	174 (22)	44 (25)	31,189 (24)
35-39	16,538 (22)	7,420 (23)	4,243 (22)	173 (22)	28 (16)	28,487 (22)
40-44	11,270 (15)	4,262 (13)	2,617 (13)	126 (16)	20 (11)	18,347 (14)
45-49	6,679 (9)	2,328 (7)	1,335 (7)	80 (10)	15 (9)	10,461 (8)
50-54	3,788 (5)	1,295 (4)	769 (4)	41 (5)	3 (2)	5,912 (5)
55-59	2,399 (3)	801 (2)	473 (2)	27 (3)	5 (3)	3,718 (3)
60-64	1,316 (2)	415 (1)	204 (1)	8 (1)	3 (2)	1,951 (2)
65 or older	1,208 (2)	244 (1)	130 (1)	23 (3)	—	1,609 (1)
Male subtotal	75,609 (100)	32,416 (100)	19,426 (100)	799 (100)	174 (100)	128,753 (100)
Females						
Age at diagnosis (years)						
Under 5	170 (4)	549 (7)	257 (9)	1 (1)	3 (10)	981 (7)
5-12	36 (1)	74 (1)	44 (1)	3 (4)	—	157 (1)
13-19	34 (1)	70 (1)	20 (1)	1 (1)	1 (3)	126 (1)
20-24	246 (6)	440 (6)	223 (8)	3 (4)	3 (10)	919 (6)
25-29	685 (18)	1,373 (18)	628 (21)	8 (11)	3 (10)	2,705 (19)
30-34	818 (22)	2,086 (27)	724 (24)	15 (20)	10 (33)	3,662 (25)
35-39	572 (15)	1,559 (20)	529 (18)	7 (9)	5 (17)	2,678 (18)
40-44	303 (8)	714 (9)	265 (9)	13 (18)	2 (7)	1,299 (9)
45-49	166 (4)	304 (4)	116 (4)	7 (9)	—	597 (4)
50-54	129 (3)	183 (2)	60 (2)	5 (7)	1 (3)	378 (3)
55-59	148 (4)	117 (2)	42 (1)	3 (4)	—	312 (2)
60-64	138 (4)	74 (1)	23 (1)	5 (7)	1 (3)	241 (2)
65 or older	359 (9)	86 (1)	29 (1)	3 (4)	1 (3)	478 (3)
Female subtotal	3,804 (100)	7,629 (100)	2,960 (100)	74 (100)	30 (100)	14,533 (100)
Total	79,413	40,045	22,386	873	204	143,286

¹ Includes 365 persons whose race/ethnicity is unknown.

Table 8. AIDS cases, case-fatality rates, and deaths by half-year and age group, through July 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	92	92.4	38	8	62.5	2
July-Dec.	200	90.5	85	6	100.0	6
1982 Jan.-June	390	90.3	153	13	76.9	9
July-Dec.	683	88.7	282	15	80.0	4
1983 Jan.-June	1,254	91.6	512	32	93.8	13
July-Dec.	1,628	91.3	917	42	76.2	16
1984 Jan.-June	2,532	88.5	1,369	47	83.0	25
July-Dec.	3,328	89.3	1,907	63	73.0	24
1985 Jan.-June	4,791	88.0	2,722	96	71.9	43
July-Dec.	6,168	86.4	3,709	127	74.0	68
1986 Jan.-June	8,097	84.3	4,887	128	72.7	65
July-Dec.	9,713	81.3	6,190	174	66.7	83
1987 Jan.-June	12,460	79.4	7,183	217	59.9	112
July-Dec.	13,819	71.9	7,546	244	57.4	157
1988 Jan.-June	15,493	63.2	8,743	235	48.1	128
July-Dec.	15,715	55.2	9,891	304	41.1	148
1989 Jan.-June	16,889	43.2	10,934	290	41.0	151
July-Dec.	15,691	32.7	11,303	251	33.9	150
1990 Jan.-June	11,689	18.9	7,682	165	22.4	98
July-July	113	8.0	111	1	0.0	1
Total¹	140,822	61.3	86,339	2,464	53.0	1,305

¹ Death totals include 145 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 July 1990, United States

Definition category ¹	Year of diagnosis					Cumulative total
	Before Aug. 1986 No. (%)	Aug. 1986- July 1987 No. (%)	Aug. 1987- July 1988 No. (%)	Aug. 1988- July 1989 No. (%)	Aug. 1989- July 1990 No. (%)	
Pre-1987 definition	29,616 (94)	20,171 (87)	22,155 (74)	23,190 (70)	16,868 (67)	112,000 (78)
1987 definition: ²	1,778 (6)	3,134 (13)	7,953 (26)	10,156 (30)	8,265 (33)	31,286 (22)
<i>Specific disease</i>						
<i>presumptively diagnosed</i>	957	1,672	4,384	5,732	4,831	17,576
<i>Specific disease</i>						
<i>definitively diagnosed</i>	294	398	582	671	566	2,511
<i>HIV encephalopathy</i>	142	393	1,053	1,170	916	3,674
<i>HIV wasting syndrome</i>	385	671	1,934	2,583	1,952	7,525
Total	31,394 (100)	23,305 (100)	30,108 (100)	33,346 (100)	25,133 (100)	143,286 (100)

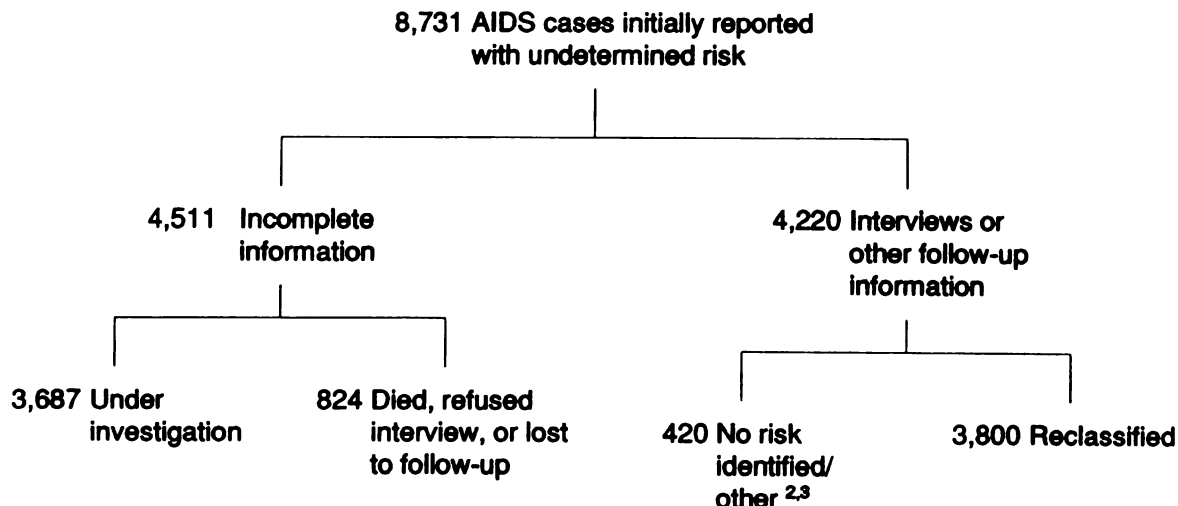
¹ Persons who meet the criteria for more than one definition category are classified in the definition category listed first.

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 July 1990, United States

Exposure category	AIDS cases	
	No.	(%)
Single mode of exposure		
Male homosexual/bisexual contact	80,880	(57)
Intravenous (IV) drug use (female and heterosexual male)	25,947	(18)
Hemophilia/coagulation disorder	760	(1)
Heterosexual contact	6,835	(5)
Receipt of transfusion of blood, blood component, or tissue	3,351	(2)
Other/undetermined	4,932	(4)
Single mode of exposure subtotal	122,705	(87)
Multiple modes of exposure		
Male homosexual/bisexual contact; IV drug use	8,665	(6)
Male homosexual/bisexual contact; hemophilia	30	(0)
Male homosexual/bisexual contact; heterosexual contact	1,692	(1)
Male homosexual/bisexual contact; receipt of transfusion	1,533	(1)
IV drug use; hemophilia	33	(0)
IV drug use; heterosexual contact	3,403	(2)
IV drug use; receipt of transfusion	661	(0)
Hemophilia; heterosexual contact	8	(0)
Hemophilia; receipt of transfusion	479	(0)
Heterosexual contact; receipt of transfusion	340	(0)
Male homosexual/bisexual contact; IV drug use; hemophilia	7	(0)
Male homosexual/bisexual contact; IV drug use; heterosexual contact	644	(0)
Male homosexual/bisexual contact; IV drug use; receipt of transfusion	253	(0)
Male homosexual/bisexual contact; hemophilia; heterosexual contact	3	(0)
Male homosexual/bisexual contact; hemophilia; receipt of transfusion	16	(0)
Male homosexual/bisexual contact; heterosexual contact; receipt of transfusion	87	(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	190	(0)
Hemophilia; heterosexual contact; receipt of transfusion	11	(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	18,117	(13)
Total	140,822	(100)

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



¹ Excludes 66 children under 13 years of age who have an undetermined risk: 60 children are under investigation and 6 have died, refused interview, or were lost to follow-up. An additional 99 children who were initially reported with an undetermined risk have been reclassified after investigation.

² **Health-care workers.** 3 of the 420 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 417, the mode of exposure to HIV remains undetermined after investigation. 65 of these are health-care workers, 58 of whom responded to a standardized questionnaire. 34 (59%) reported needlesticks and/or mucous membrane exposures to blood and other body fluids of patients. None of the source patients was known to be infected with HIV at the time of the exposure and none of the health-care workers was evaluated at the time of the exposure to document seroconversion to HIV antibody. See *MMWR*, "Update: Acquired Immunodeficiency Syndrome and Human Immunodeficiency Virus Infection Among Health-Care Workers," (April 22, 1988)37:229-234,239.

³ **Heterosexual transmission.** 350 of the 417 patients who had no risk identified after follow-up responded to a standardized questionnaire; 116 (36%) of 321 persons responding to questions related to sexually transmitted disease gave a history of such disease and 75 (34%) of 218 interviewed men reported sexual contact with a prostitute. Some of these persons may represent unreported or unrecognized heterosexual transmission of HIV. See *MMWR*, "Update: Heterosexual Transmission of AIDS and HIV Infection — U.S.," (June 23, 1989) 38:423-424,429-434.

Technical notes

Surveillance and reporting of AIDS

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

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

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

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

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

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

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

Exposure categories

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

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

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

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

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

Rates

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