

# HIV/AIDS

**SURVEILLANCE**

**YEAR-END EDITION**

**U.S. AIDS cases reported through December 1990**

**Issued January 1991**

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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).



**U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES**  
Public Health Service  
Centers for Disease Control  
Center for Infectious Diseases  
Division of HIV/AIDS



The *HIV/AIDS Surveillance Report* is published each month by the Division of HIV/AIDS, Center for Infectious Diseases, Centers for Disease Control, Atlanta, GA 30333. An expanded, year-end edition is published each January. All data contained in the *Report* are provisional.

Suggested Citation: Centers for Disease Control. HIV/AIDS Surveillance Report, January 1991:  
1-22

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

Center for Infectious Diseases.....Frederick A. Murphy, D.V.M., Ph.D.  
*Director*

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

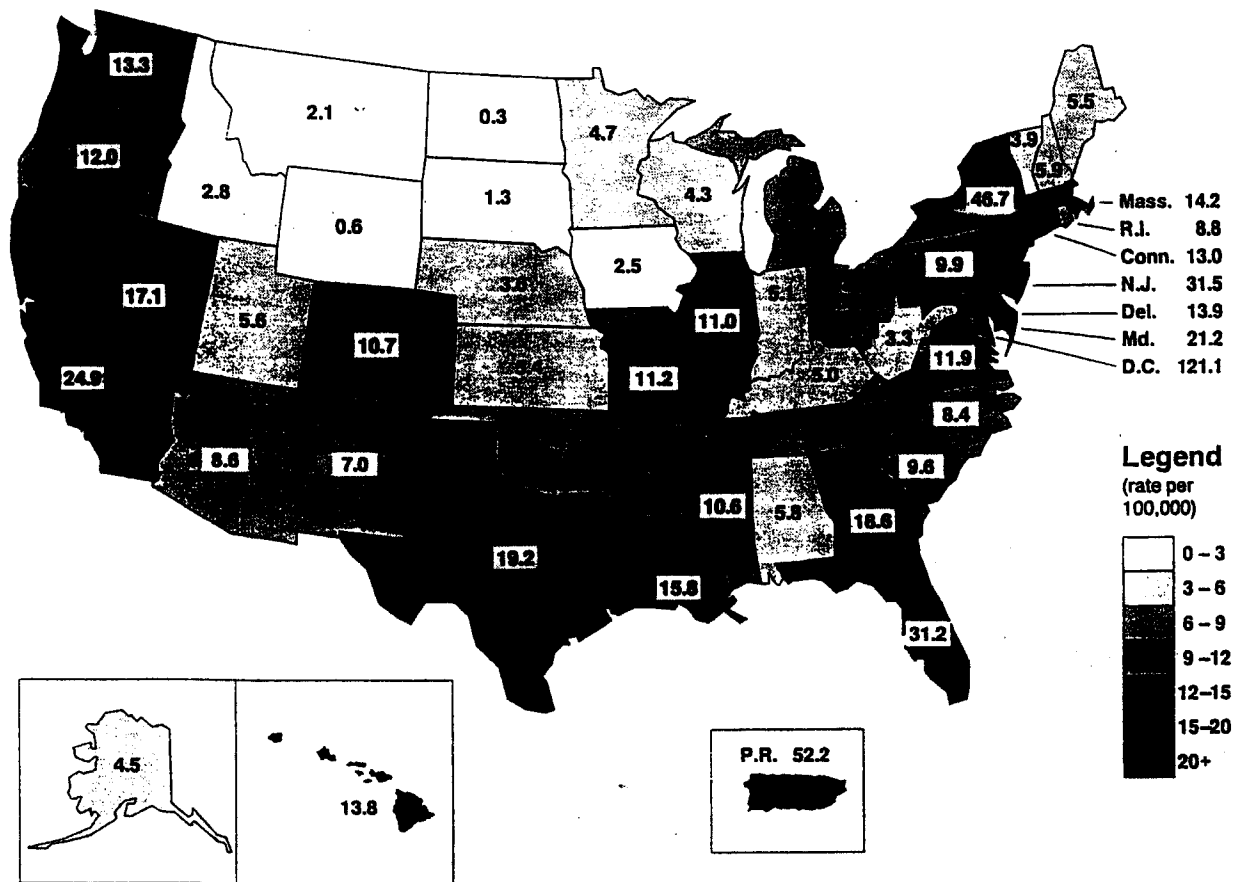
Surveillance Branch.....Ruth L. Berkelman, M.D.  
*Chief*

Reporting and Analysis Section.....Harold Van Patten  
*Acting Chief*

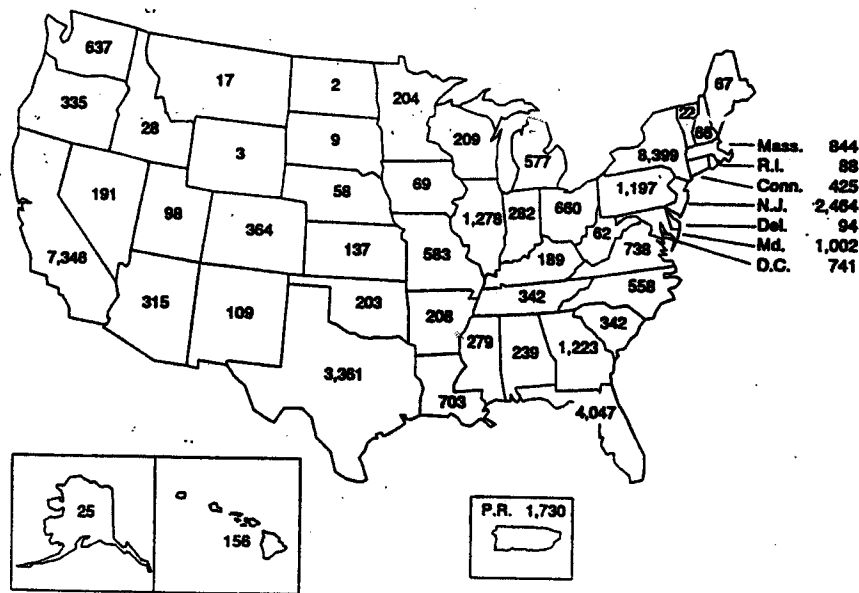
Statistics and Data Management Branch.....W. Meade Morgan, Ph.D.  
*Chief*  
Xenophon M. Santas  
*Computer Specialist*

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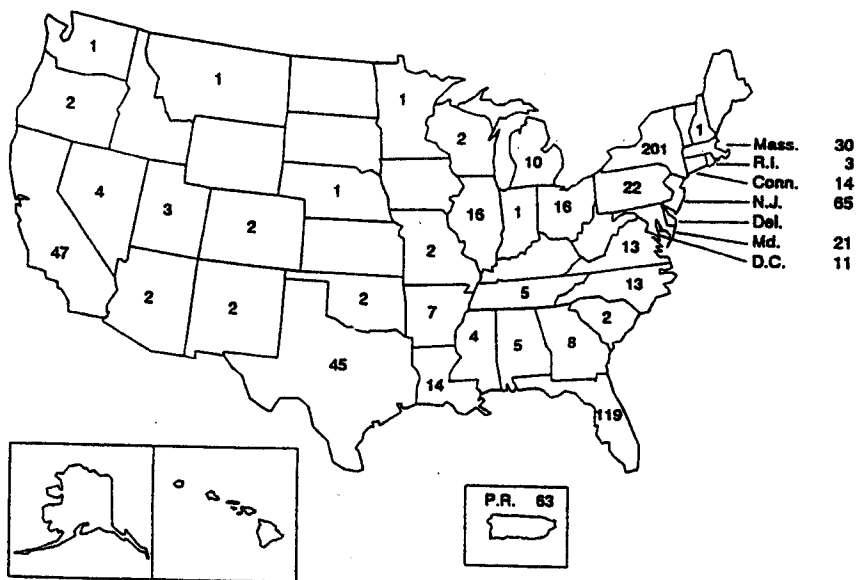
Figure 1. AIDS annual rates per 100,000 population, for cases reported in 1990, United States



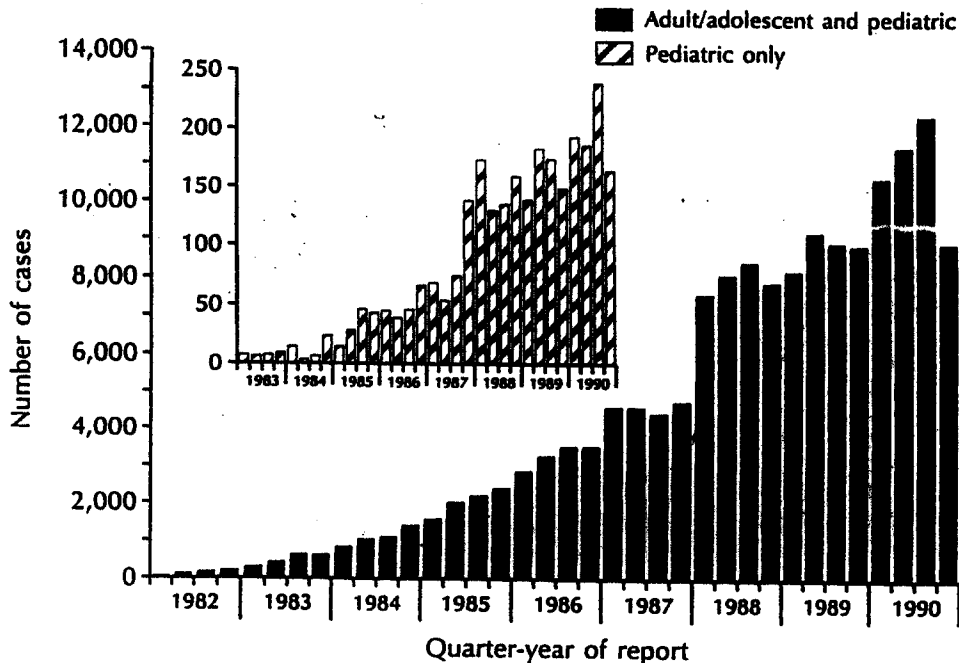
**Figure 2. Adult/adolescent and pediatric AIDS cases, reported in 1990, United States**



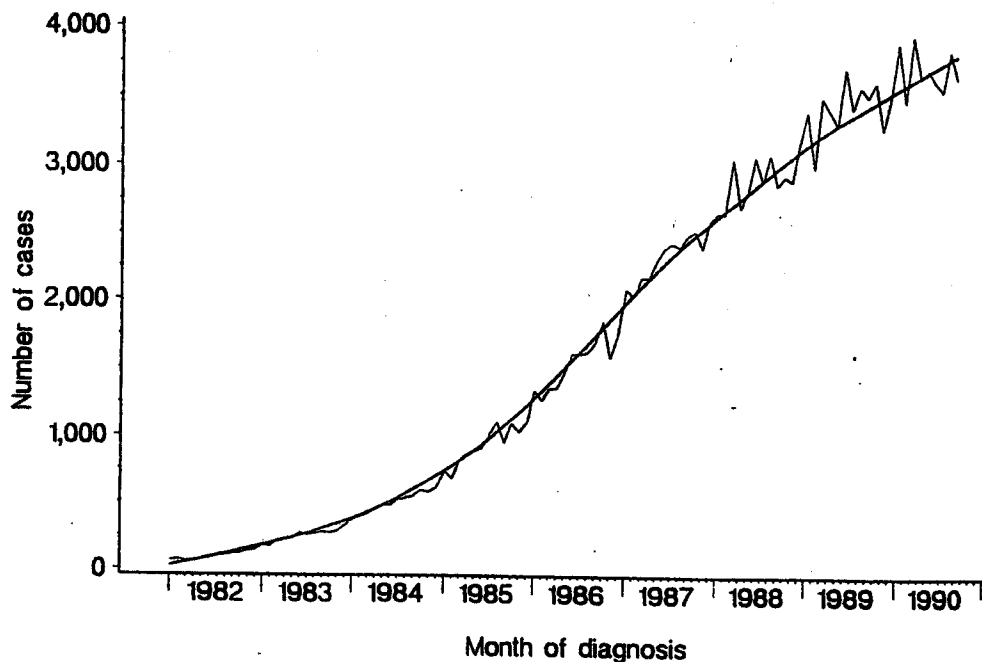
**Figure 3. Pediatric AIDS cases, reported in 1990, United States**



**Figure 4. AIDS cases by quarter-year of report, reported January 1982 through December 1990, United States**



**Figure 5. AIDS cases by month of diagnosis, adjusted for reporting delays,<sup>1</sup> January 1982 through September 1990, United States**



<sup>1</sup>See technical notes for explanation of adjusting and smoothing of data. Adjusted numbers of diagnosed cases for the most recent 3 months are not shown because of the imprecision of these estimates.

**Table 1. AIDS cases and annual rates per 100,000 population, by state, reported in 1989 and 1990; and cumulative totals, by state and age group, through December 1990<sup>1</sup>**

State of residence	1989		1990		Cumulative totals		
	No.	Rate	No.	Rate	Adults/ adolescents	Children < 13 years old	Total
Alabama	216	5.2	239	5.8	873	21	894
Alaska	17	3.1	25	4.5	97	2	99
Arizona	332	9.3	315	8.6	1,290	8	1,298
Arkansas	79	3.3	208	8.6	445	10	455
California	6,467	22.4	7,346	24.9	30,462	212	30,674
Colorado	387	11.5	364	10.7	1,585	9	1,594
Connecticut	431	13.3	425	13.0	1,805	63	1,868
Delaware	81	12.1	94	13.9	310	4	314
District of Columbia	496	80.7	741	121.1	2,672	40	2,712
Florida	3,479	27.5	4,047	31.2	13,607	386	13,993
Georgia	1,102	17.1	1,223	18.6	4,226	44	4,270
Hawaii	180	16.1	156	13.8	627	2	629
Idaho	23	2.3	28	2.8	77	2	79
Illinois	1,139	9.8	1,278	11.0	4,661	67	4,728
Indiana	397	7.1	282	5.1	1,007	10	1,017
Iowa	56	2.0	69	2.5	229	3	232
Kansas	114	4.5	137	5.4	442	3	445
Kentucky	114	3.1	189	5.0	500	5	505
Louisiana	508	11.5	703	15.8	2,251	39	2,290
Maine	66	5.4	67	5.5	219	2	221
Maryland	717	15.3	1,002	21.2	3,075	68	3,143
Massachusetts	755	12.8	844	14.2	3,270	72	3,342
Michigan	506	5.5	577	6.2	1,973	32	2,005
Minnesota	176	4.1	204	4.7	823	8	831
Mississippi	165	6.3	279	10.6	650	10	660
Missouri	442	8.6	583	11.2	1,821	12	1,833
Montana	13	1.6	17	2.1	55	1	56
Nebraska	33	2.1	58	3.6	184	2	186
Nevada	181	16.7	191	17.1	626	7	633
New Hampshire	37	3.3	66	5.9	190	5	195
New Jersey	2,230	28.7	2,464	31.5	10,091	280	10,371
New Mexico	94	6.1	109	7.0	346	3	349
New York	6,010	33.5	8,399	46.7	33,694	802	34,496
North Carolina	447	6.8	558	8.4	1,628	36	1,664
North Dakota	8	1.2	2	0.3	20	—	20
Ohio	486	4.5	660	6.1	2,259	40	2,299
Oklahoma	167	5.1	203	6.2	699	11	710
Oregon	228	8.2	335	12.0	1,014	5	1,019
Pennsylvania	1,073	8.9	1,197	9.9	4,362	75	4,437
Rhode Island	88	8.8	88	8.8	372	10	382
South Carolina	331	9.4	342	9.6	1,023	21	1,044
South Dakota	4	0.6	9	1.3	25	—	25
Tennessee	266	5.4	342	6.9	1,092	15	1,107
Texas	2,397	14.0	3,361	19.2	11,320	111	11,431
Utah	74	4.3	98	5.6	331	8	339
Vermont	20	3.6	22	3.9	77	1	78
Virginia	390	6.4	738	11.9	2,018	35	2,053
Washington	499	10.6	637	13.3	2,147	12	2,159
West Virginia	55	2.9	62	3.3	177	2	179
Wisconsin	130	2.7	209	4.3	623	4	627
Wyoming	16	3.3	3	0.6	34	—	34
<b>U.S. total</b>	<b>33,722</b>	<b>13.6</b>	<b>41,595</b>	<b>16.6</b>	<b>153,404</b>	<b>2,620</b>	<b>156,024</b>
Guam	1	0.7	2	1.4	8	—	8
Pacific Islands, U.S.	—	—	1	0.5	2	—	2
Puerto Rico	1,478	44.7	1,730	52.2	4,798	162	4,960
Virgin Islands, U.S.	29	25.2	11	9.4	75	4	79
<b>Total</b>	<b>35,230</b>	<b>14.0</b>	<b>43,339</b>	<b>17.0</b>	<b>158,287</b>	<b>2,786</b>	<b>161,073</b>

<sup>1</sup>During December 1990, 3,496 cases and 2,265 deaths among adults/adolescents and 52 cases and 18 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 in 1989 and 1990; and cumulative totals, by area and age group, through December 1990**

Metropolitan area of residence	1989		1990		Cumulative totals		
	No.	Rate	No.	Rate	Adults/adolescents	Children <13 years old	Total
Akron, Ohio	23	3.5	29	4.4	106	—	106
Albany-Schenectady, N.Y.	71	8.3	83	9.7	326	3	329
Albuquerque, N.M.	51	10.2	49	9.6	176	1	177
Allentown, Pa.	32	4.7	59	8.6	155	4	159
Anaheim, Calif.	283	12.3	376	16.1	1,319	9	1,328
Atlanta, Ga.	860	30.6	941	32.6	3,237	25	3,262
Austin, Tex.	203	26.2	233	29.1	716	7	723
Bakersfield, Calif.	36	6.7	35	6.4	115	—	115
Baltimore, Md.	477	20.2	647	27.2	1,843	49	1,892
Baton Rouge, La.	51	9.4	59	10.8	192	4	196
Bergen-Passaic, N.J.	210	16.3	350	27.1	1,322	27	1,349
Birmingham, Ala.	75	8.1	74	7.9	279	6	285
Boston, Mass.	586	15.6	604	16.1	2,549	51	2,600
Bridgeport, Conn.	136	16.6	115	14.0	541	20	561
Buffalo, N.Y.	66	6.9	93	9.8	259	2	261
Charleston, S.C.	66	12.7	75	14.1	231	—	231
Charlotte, N.C.	90	8.0	95	8.3	322	7	329
Chicago, Ill.	929	14.9	1,076	17.2	3,945	51	3,996
Cincinnati, Ohio	63	4.3	132	9.0	347	6	353
Cleveland, Ohio	126	6.9	144	7.9	578	10	588
Columbus, Ohio	111	8.2	140	10.2	499	4	503
Dallas, Tex.	540	21.3	794	30.5	2,787	14	2,801
Dayton, Ohio	56	5.9	68	7.2	229	6	235
Denver, Colo.	318	19.1	305	18.0	1,301	5	1,306
Detroit, Mich.	353	8.1	394	9.1	1,377	23	1,400
El Paso, Tex.	33	5.5	32	5.2	106	1	107
Fort Lauderdale, Fla.	615	50.9	846	68.8	2,459	49	2,508
Fort Worth, Tex.	153	11.5	200	14.6	624	8	632
Fresno, Calif.	49	7.8	64	10.0	194	2	196
Gary, Ind.	41	6.7	19	3.1	90	—	90
Grand Rapids, Mich.	27	4.0	35	5.1	103	1	104
Greensboro, N.C.	71	7.6	96	10.2	252	6	258
Greenville, S.C.	39	6.2	41	6.5	125	—	125
Harrisburg, Pa.	48	8.1	34	5.7	159	4	163
Hartford, Conn.	144	12.9	152	13.5	545	15	560
Honolulu, Hawaii	122	14.4	116	13.5	483	2	485
Houston, Tex.	906	27.4	1,368	40.5	4,758	46	4,804
Indianapolis, Ind.	197	15.8	131	10.4	472	3	475
Jacksonville, Fla.	200	21.7	284	30.1	771	25	796
Jersey City, N.J.	311	57.6	354	65.7	1,693	43	1,736
Kansas City, Mo.	239	15.0	290	18.0	991	4	995
Knoxville, Tenn.	22	3.6	31	5.1	111	1	112
Lake County, Ill.	21	4.2	16	3.1	73	2	75
Las Vegas, Nev.	126	19.3	156	23.2	465	7	472
Little Rock, Ark.	31	6.0	82	15.7	181	5	186
Los Angeles, Calif.	2,351	26.9	2,372	26.8	10,762	93	10,855
Louisville, Ky.	45	4.6	73	7.5	206	2	208
Memphis, Tenn.	85	8.6	106	10.6	350	6	356
Miami, Fla.	1,011	55.0	1,060	57.0	4,060	163	4,223
Middlesex, N.J.	194	19.6	165	16.5	800	24	824
Milwaukee, Wis.	72	5.2	115	8.2	353	2	355
Minneapolis-Saint Paul, Minn.	158	6.5	179	7.3	733	6	739
Monmouth-Ocean City, N.J.	184	18.7	201	20.1	655	23	678
Nashville, Tenn.	79	8.0	114	11.4	361	6	367
Nassau-Suffolk, N.Y.	362	13.7	398	15.0	1,610	39	1,649
New Haven, Conn.	111	13.9	130	16.2	570	27	597
New Orleans, La.	313	23.8	390	29.6	1,421	20	1,441
New York, N.Y.	4,976	57.8	7,282	84.3	29,255	728	29,983
Newark, N.J.	956	50.7	985	52.2	4,216	126	4,342
Norfolk, Va.	74	5.3	186	13.0	449	7	456

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

Metropolitan area of residence	1989		1990		Cumulative totals		
	No.	Rate	No.	Rate	Adults/ adolescents	Children <13 years old	Total
Oakland, Calif.	404	19.8	606	29.3	2,031	14	2,045
Oklahoma City, Okla.	87	8.9	101	10.2	356	—	356
Omaha, Neb.	23	3.7	39	6.2	121	1	122
Orlando, Fla.	160	15.9	262	25.2	734	8	742
Oxnard-Ventura, Calif.	31	4.7	39	5.8	146	—	146
Philadelphia, Pa.	782	15.8	898	18.1	3,305	52	3,357
Phoenix, Ariz.	239	11.4	228	10.6	943	5	948
Pittsburgh, Pa.	157	7.6	135	6.5	552	2	554
Portland, Oreg.	173	14.4	269	22.3	801	2	803
Providence, R.I.	81	8.9	85	9.3	348	9	357
Raleigh-Durham, N.C.	97	13.9	115	16.1	355	10	365
Richmond, Va.	93	10.9	137	15.8	385	7	392
Riverside-San Bernardino, Calif.	256	10.8	280	11.4	1,007	15	1,022
Rochester, N.Y.	63	6.4	83	8.4	346	3	349
Sacramento, Calif.	168	11.8	151	10.4	634	9	643
Saint Louis, Mo.	181	7.3	294	11.8	815	7	822
Salt Lake City, Utah	60	5.5	90	8.2	293	5	298
San Antonio, Tex.	195	14.4	239	17.2	798	12	810
San Diego, Calif.	510	21.0	670	26.8	2,308	19	2,327
San Francisco, Calif.	1,786	111.4	2,124	131.5	9,404	17	9,421
San Jose, Calif.	118	8.1	193	13.2	707	8	715
San Juan, P.R.	875	55.1	1,138	71.3	3,000	106	3,106
Scranton, Pa.	25	3.4	45	6.1	123	3	126
Seattle, Wash.	372	19.6	477	24.8	1,631	10	1,641
Springfield, Mass.	43	7.2	86	14.5	194	10	204
Syracuse, N.Y.	39	6.0	39	6.0	156	5	161
Tacoma, Wash.	38	6.7	40	6.9	139	2	141
Tampa-Saint Petersburg, Fla.	385	18.8	417	19.9	1,528	26	1,554
Toledo, Ohio	23	3.7	38	6.2	111	3	114
Tucson, Ariz.	61	9.4	58	8.8	243	2	245
Tulsa, Okla.	50	6.8	55	7.4	198	3	201
Washington, D.C.	856	22.6	1,293	33.5	4,527	69	4,596
West Palm Beach, Fla.	331	39.0	354	40.3	1,363	52	1,415
Wilmington, Del.	64	11.0	83	14.2	259	3	262
Worcester, Mass.	40	5.9	54	7.9	176	4	180
<b>Metropolitan area subtotal<sup>1</sup></b>	<b>29,044</b>	<b>19.9</b>	<b>36,288</b>	<b>24.6</b>	<b>135,244</b>	<b>2,333</b>	<b>137,577</b>
<b>All other areas</b>	<b>6,186</b>	<b>5.8</b>	<b>7,051</b>	<b>6.6</b>	<b>23,043</b>	<b>453</b>	<b>23,496</b>
<b>Total</b>	<b>35,230</b>	<b>14.0</b>	<b>43,339</b>	<b>17.0</b>	<b>158,287</b>	<b>2,786</b>	<b>161,073</b>

<sup>1</sup> 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 in 1989 and 1990; and cumulative totals, by age group and exposure category, through December 1990, United States**

Adult/adolescent exposure category	Males		Females		Totals		Cumulative total <sup>1</sup>
	1989	1990	1989	1990	1989	1990	
	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	
Male homosexual/bisexual contact	19,891 (64)	23,738 (63)	—	—	19,891 (58)	23,738 (56)	94,126 (59)
Intravenous (IV) drug use (female and heterosexual male)	6,218 (20)	7,689 (20)	1,871 (51)	2,329 (48)	8,089 (23)	10,018 (24)	34,398 (22)
Male homosexual/bisexual contact and IV drug use	2,214 (7)	2,295 (6)	—	—	2,214 (6)	2,295 (5)	10,557 (7)
Hemophilia/coagulation disorder	283 (1)	329 (1)	6 (0)	11 (0)	289 (1)	340 (1)	1,386 (1)
Heterosexual contact:	778 (3)	1,054 (3)	1,232 (34)	1,657 (34)	2,010 (6)	2,711 (6)	8,440 (5)
Sex with IV drug user	390	469	770	1,062	1,160	1,531	4,470
Sex with bisexual male	—	—	109	129	109	129	498
Sex with person with hemophilia	1	2	20	26	21	28	79
Born in Pattern-II <sup>2</sup> country	247	305	132	117	379	422	2,036
Sex with person born in Pattern-II country	19	22	12	22	31	44	130
Sex with transfusion recipient with HIV infection	13	24	22	40	35	64	151
Sex with HIV-infected person, risk not specified	108	232	167	261	275	493	1,076
Receipt of blood transfusion, blood components, or tissue <sup>3</sup>	469 (2)	501 (1)	308 (8)	365 (7)	777 (2)	866 (2)	3,684 (2)
Other/undetermined <sup>4</sup>	1,093 (4)	2,061 (5)	222 (6)	528 (11)	1,315 (4)	2,589 (6)	5,696 (4)
<b>Adult/adolescent subtotal</b>	<b>30,946 (100)</b>	<b>37,667 (100)</b>	<b>3,639 (100)</b>	<b>4,890 (100)</b>	<b>34,585 (100)</b>	<b>42,557 (100)</b>	<b>158,287 (100)</b>
<b>Pediatric (&lt;13 years old) exposure category</b>							
Hemophilia/coagulation disorder	24 (7)	31 (7)	1 (0)	—	25 (4)	31 (4)	139 (5)
Mother with/at risk for HIV infection:	282 (84)	342 (82)	283 (92)	339 (92)	565 (88)	681 (87)	2,327 (84)
IV drug use	139	167	123	147	262	314	1,163
Sex with IV drug user	67	75	61	75	128	150	487
Sex with bisexual male	8	3	7	5	15	8	48
Sex with person with hemophilia	—	1	—	1	—	2	9
Born in Pattern-II country	27	20	28	20	55	40	213
Sex with person born in Pattern-II country	1	2	2	4	3	6	12
Sex with transfusion recipient with HIV infection	1	1	5	—	6	1	12
Sex with HIV-infected person, risk not specified	10	15	16	21	26	36	98
Receipt of blood transfusion, blood components, or tissue	4	5	6	7	10	12	47
Has HIV infection, risk not specified	25	53	35	59	60	112	238
Receipt of blood transfusion, blood components, or tissue	25 (7)	26 (6)	15 (5)	13 (4)	40 (6)	39 (5)	252 (9)
Undetermined	5 (1)	16 (4)	10 (3)	15 (4)	15 (2)	31 (4)	68 (2)
<b>Pediatric subtotal</b>	<b>336 (100)</b>	<b>415 (100)</b>	<b>309 (100)</b>	<b>367 (100)</b>	<b>645 (100)</b>	<b>782 (100)</b>	<b>2,786 (100)</b>
<b>Total</b>	<b>31,282</b>	<b>38,082</b>	<b>3,948</b>	<b>5,257</b>	<b>35,230</b>	<b>43,339</b>	<b>161,073</b>

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

<sup>2</sup> See technical notes.

<sup>3</sup> Includes 14 transfusion recipients who received blood screened for HIV antibody, and 1 tissue recipient.

<sup>4</sup> "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 6.

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

Adult/adolescent exposure category	White, not Hispanic	Black, not Hispanic	Hispanic	Asian/Pacific Islander	American Indian/Alaskan Native	Total <sup>4</sup>
	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)
Male homosexual/bisexual contact	67,049 (76)	15,966 (36)	10,051 (40)	733 (74)	123 (54)	94,126 (59)
Intravenous (IV) drug use (female and heterosexual male)	6,954 ( 8)	17,232 (39)	10,050 (40)	44 ( 4)	36 (17)	34,398 (22)
Male homosexual/bisexual contact and IV drug use	6,112 ( 7)	2,852 ( 6)	1,526 ( 6)	21 ( 2)	30 (13)	10,557 ( 7)
Hemophilia/coagulation disorder	1,153 ( 1)	95 ( 0)	110 ( 0)	16 ( 2)	8 ( 4)	1,386 ( 1)
Heterosexual contact:	1,799 ( 2)	5,039 (11)	1,535 ( 6)	37 ( 4)	10 ( 4)	8,440 ( 5)
<i>Sex with IV drug user</i>	980	2,264	1,191	16	7	4,470
<i>Sex with bisexual male</i>	274	155	58	9	1	498
<i>Sex with person with hemophilia</i>	68	7	3	1	—	79
<i>Born in Pattern-II<sup>1</sup> country</i>	8	2,004	16	4	—	2,036
<i>Sex with person born in     Pattern-II country</i>	41	80	8	—	—	130
<i>Sex with transfusion recipient     with HIV infection</i>	96	26	26	1	—	151
<i>Sex with HIV-infected     person, risk not specified</i>	332	503	233	6	—	21,076
Receipt of blood transfusion, blood components, or tissue <sup>2</sup>	2,580 ( 3)	638 ( 1)	380 ( 2)	70 ( 7)	6 ( 3)	3,684 ( 2)
Other/undetermined <sup>3</sup>	2,093 ( 2)	2,205 ( 5)	1,278 ( 5)	64 ( 6)	12 ( 5)	5,696 ( 4)
<b>Adult/adolescent subtotal</b>	<b>87,740(100)</b>	<b>44,027(100)</b>	<b>24,930(100)</b>	<b>985(100)</b>	<b>227(100)</b>	<b>158,287(100)</b>
<b>Pediatric (&lt;13 years old) exposure category</b>						
Hemophilia/coagulation disorder	95 (16)	18 ( 1)	23 ( 3)	3 (25)	—	139 ( 5)
Mother with/at risk for HIV infection:	366 (61)	1,326 (92)	617 (86)	4 (33)	6(100)	2,327 (84)
<i>IV drug use</i>	181	657	318	1	2	1,163
<i>Sex with IV drug user</i>	77	211	196	1	1	487
<i>Sex with bisexual male</i>	18	21	9	—	—	48
<i>Sex with person with hemophilia</i>	6	2	1	—	—	9
<i>Born in Pattern-II country</i>	2	209	2	—	—	213
<i>Sex with person born in     Pattern-II country</i>	—	11	—	—	—	12
<i>Sex with transfusion recipient     with HIV infection</i>	5	3	3	—	—	12
<i>Sex with HIV-infected     person, risk not specified</i>	20	46	29	1	1	98
<i>Receipt of blood transfusion,     blood components, or tissue</i>	16	19	12	—	—	47
<i>Has HIV infection, risk not     specified</i>	41	147	47	1	2	238
Receipt of blood transfusion, blood components, or tissue	133 (22)	56 ( 4)	58 ( 8)	5 (42)	—	252 ( 9)
Undetermined	8 ( 1)	39 ( 3)	21 ( 3)	—	—	68 ( 2)
<b>Pediatric subtotal</b>	<b>602(100)</b>	<b>1,439(100)</b>	<b>719(100)</b>	<b>12(100)</b>	<b>6(100)</b>	<b>2,786(100)</b>
<b>Total</b>	<b>88,342</b>	<b>45,466</b>	<b>25,649</b>	<b>997</b>	<b>233</b>	<b>161,073</b>

<sup>1</sup> See technical notes.

<sup>2</sup> Includes 14 transfusion recipients who received blood screened for HIV antibody, and 1 tissue recipient.

<sup>3</sup> "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 to follow-up, or refused interview; and patients whose mode of exposure to HIV remains undetermined after investigation. See Figure 6.

<sup>4</sup> Includes 386 persons whose race/ethnicity is unknown.

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

Male exposure category	White, not Hispanic	Black, not Hispanic	Hispanic	Asian/Pacific Islander	American Indian/Alaskan Native	Total <sup>4</sup>
	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)
Male homosexual/bisexual contact	67,049 (80)	15,966 (44)	10,051 (46)	733 (81)	123 (63)	94,126 (66)
Intravenous (IV) drug use (heterosexual)	5,305 ( 6)	12,676 (35)	8,442 (39)	30 ( 3)	22 (11)	26,540 (19)
Male homosexual/bisexual contact and IV drug use	6,112 ( 7)	2,852 ( 8)	1,526 ( 7)	21 ( 2)	30 (15)	10,557 ( 7)
Hemophilia/coagulation disorder	1,127 ( 1)	89 ( 0)	108 ( 0)	16 ( 2)	8 ( 4)	1,352 ( 1)
Heterosexual contact:	570 ( 1)	2,442 ( 7)	340 ( 2)	9 ( 1)	2 ( 1)	3,367 ( 2)
<i>Sex with IV drug user</i>	355	713	212	5	2	1,287
<i>Sex with person with hemophilia</i>	5	—	1	—	—	6
<i>Born in Pattern-II<sup>1</sup> country</i>	4	1,462	11	3	—	1,483
<i>Sex with person born in Pattern-II country</i>	34	36	7	—	—	77
<i>Sex with transfusion recipient with HIV infection</i>	27	14	7	—	—	49
<i>Sex with HIV-infected person, risk not specified</i>	145	217	102	1	—	465
Receipt of blood transfusion, blood components, or tissue <sup>2</sup>	1,658 ( 2)	341 ( 1)	199 ( 1)	44 ( 5)	2 ( 1)	2,252 ( 2)
Other/undetermined <sup>3</sup>	1,798 ( 2)	1,624 ( 5)	1,080 ( 5)	50 ( 6)	8 ( 4)	4,600 ( 3)
<b>Male subtotal</b>	<b>83,619 (100)</b>	<b>35,990 (100)</b>	<b>21,746 (100)</b>	<b>903 (100)</b>	<b>195 (100)</b>	<b>142,794 (100)</b>
<b>Female exposure category</b>						
IV drug use	1,649 (40)	4,556 (57)	1,608 (51)	14 (17)	16 (50)	7,858 (51)
Hemophilia/coagulation disorder	26 ( 1)	6 ( 0)	2 ( 0)	—	—	34 ( 0)
Heterosexual contact:	1,229 (30)	2,597 (32)	1,195 (38)	28 (34)	8 (25)	5,073 (33)
<i>Sex with IV drug user</i>	625	1,551	979	11	5	3,183
<i>Sex with bisexual male</i>	274	155	58	9	1	498
<i>Sex with person with hemophilia</i>	63	7	2	1	—	73
<i>Born in Pattern-II country</i>	4	542	5	1	—	553
<i>Sex with person born in Pattern-II country</i>	7	44	1	—	—	53
<i>Sex with transfusion recipient with HIV infection</i>	69	12	19	1	—	102
<i>Sex with HIV-infected person, risk not specified</i>	187	286	131	5	2	611
Receipt of blood transfusion, blood components, or tissue	922 (22)	297 ( 4)	181 ( 6)	26 (32)	4 (13)	1,432 ( 9)
Other/undetermined	295 ( 7)	581 ( 7)	198 ( 6)	14 (17)	4 (13)	1,096 ( 7)
<b>Female subtotal</b>	<b>4,121 (100)</b>	<b>8,037 (100)</b>	<b>3,184 (100)</b>	<b>82 (100)</b>	<b>32 (100)</b>	<b>15,493 (100)</b>
<b>Total</b>	<b>87,740</b>	<b>44,027</b>	<b>24,930</b>	<b>985</b>	<b>227</b>	<b>158,287</b>

<sup>1</sup> See technical notes.

<sup>2</sup> Includes 14 transfusion recipients who received blood screened for HIV antibody, and 1 tissue recipient.

<sup>3</sup> "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 6.

<sup>4</sup> Includes 341 males and 37 females whose race/ethnicity is unknown.

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

Exposure category	13-19 years old			20-24 years old		
	1989	1990	Cumulative total	1989	1990	Cumulative total
	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)
Male homosexual/bisexual contact	35 (28)	27 (16)	165 (26)	789 (54)	820 (50)	3,803 (57)
Intravenous (IV) drug use (female and heterosexual male)	18 (14)	15 (9)	70 (11)	271 (19)	292 (18)	1,089 (16)
Male homosexual/bisexual contact and IV drug use	3 (2)	4 (2)	27 (4)	130 (9)	132 (8)	619 (9)
Hemophilia/coagulation disorder	39 (31)	53 (32)	192 (31)	32 (2)	35 (2)	169 (3)
Heterosexual contact:	18 (14)	36 (21)	87 (14)	161 (11)	204 (12)	649 (10)
<i>Sex with IV drug user</i>	15	27	58	94	132	371
<i>Sex with bisexual male</i>	1	1	4	12	8	51
<i>Sex with person with hemophilia</i>	—	1	1	8	3	15
<i>Born in Pattern-II<sup>1</sup> country</i>	—	2	13	19	19	109
<i>Sex with person born in     Pattern-II country</i>	—	—	—	2	5	9
<i>Sex with transfusion recipient     with HIV infection</i>	—	1	1	1	5	7
<i>Sex with HIV-infected     person, risk not specified</i>	2	4	10	25	32	87
Receipt of blood transfusion, blood components, or tissue	5 (4)	11 (7)	47 (7)	11 (1)	26 (2)	101 (2)
Undetermined <sup>2</sup>	8 (6)	22 (13)	41 (7)	57 (4)	128 (8)	290 (4)
<b>Total</b>	<b>126 (100)</b>	<b>168 (100)</b>	<b>629 (100)</b>	<b>1,451 (100)</b>	<b>1,637 (100)</b>	<b>6,720 (100)</b>

<sup>1</sup> See technical notes.

<sup>2</sup> "Undetermined" refers to patients whose mode of exposure to HIV is unknown. This includes patient 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 6.

**Table 7. AIDS cases by age at diagnosis and exposure category, reported through December 1990, United States**

Age at diagnosis (years)	Male homosexual/bisexual contact		IV drug use (female and heterosexual male)		Male homosexual/bisexual contact and IV drug use		Hemophilia/coagulation disorder		Heterosexual contact: sex with person with/at risk for HIV infection	
	No.	(%)	No.	(%)	No.	(%)	No.	(%)	No.	(%)
Under 5	—		—		—		7	( 0)	—	
5-12	—		—		—		132	( 9)	—	
13-19	165	( 0)	70	( 0)	27	( 0)	192	(13)	74	( 1)
20-24	3,803	( 4)	1,089	( 3)	619	( 6)	169	(11)	540	( 8)
25-29	15,460	(16)	4,869	(14)	2,210	(21)	218	(14)	1,375	(21)
30-34	22,383	(24)	9,706	(28)	3,158	(30)	205	(13)	1,490	(23)
35-39	20,224	(21)	9,654	(28)	2,472	(23)	168	(11)	1,045	(16)
40-44	13,959	(15)	5,136	(15)	1,198	(11)	118	( 8)	655	(10)
45-49	8,483	( 9)	2,163	( 6)	512	( 5)	109	( 7)	433	( 7)
50-54	4,697	( 5)	994	( 3)	206	( 2)	53	( 3)	291	( 5)
55-59	2,884	( 3)	488	( 1)	103	( 1)	39	( 3)	198	( 3)
60-64	1,369	( 1)	171	( 0)	34	( 0)	55	( 4)	142	( 2)
65 or older	699	( 1)	58	( 0)	18	( 0)	60	( 4)	161	( 3)
<b>Total</b>	<b>94,126</b>	<b>(100)</b>	<b>34,398</b>	<b>(100)</b>	<b>10,557</b>	<b>(100)</b>	<b>1,525</b>	<b>(100)</b>	<b>6,404</b>	<b>(100)</b>

Age at diagnosis (years)	Heterosexual contact: born in Pattern-II <sup>1</sup> country		Receipt of transfusion <sup>2</sup>		Mother with/at risk for HIV infection		Other/undetermined <sup>3</sup>		Total	
	No.	(%)	No.	(%)	No.	(%)	No.	(%)	No.	(%)
Under 5	—		125	( 3)	2,091	(90)	53	( 1)	2,276	( 1)
5-12	—		127	( 3)	236	(10)	15	( 0)	510	( 0)
13-19	13	( 1)	47	( 1)	—		41	( 1)	629	( 0)
20-24	109	( 5)	101	( 3)	—		290	( 5)	6,720	( 4)
25-29	476	(23)	232	( 6)	—		794	(14)	25,634	(16)
30-34	608	(30)	282	( 7)	—		1,063	(18)	38,895	(24)
35-39	407	(20)	301	( 8)	—		861	(15)	35,132	(22)
40-44	214	(11)	298	( 8)	—		793	(14)	22,371	(14)
45-49	90	( 4)	249	( 6)	—		579	(10)	12,618	( 8)
50-54	55	( 3)	275	( 7)	—		450	( 8)	7,021	( 4)
55-59	35	( 2)	350	( 9)	—		364	( 6)	4,461	( 3)
60-64	15	( 1)	459	(12)	—		229	( 4)	2,474	( 2)
65 or older	14	( 1)	1,090	(28)	—		232	( 4)	2,332	( 1)
<b>Total</b>	<b>2,036</b>	<b>(100)</b>	<b>3,936</b>	<b>(100)</b>	<b>2,327</b>	<b>(100)</b>	<b>5,764</b>	<b>(100)</b>	<b>161,073</b>	<b>(100)</b>

<sup>1</sup> See technical notes.

<sup>2</sup> Includes 14 transfusion recipients who received blood screened for HIV antibody, and 1 tissue recipient.

<sup>3</sup> "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 6.

**Table 8. AIDS cases by sex, age at diagnosis, and race/ethnicity, reported through December 1990, United States**

Males Age at diagnosis (years)	White, not Hispanic	Black, not Hispanic	Hispanic	Asian/Pacific Islander	American Indian/ Alaskan Native	Total <sup>1</sup>
	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)
Under 5	205 (0)	645 (2)	310 (1)	3 (0)	2 (1)	1,169 (1)
5-12	160 (0)	94 (0)	71 (0)	5 (1)	—	332 (0)
13-19	223 (0)	144 (0)	94 (0)	6 (1)	5 (3)	472 (0)
20-24	2,881 (3)	1,703 (5)	1,016 (5)	28 (3)	12 (6)	5,652 (4)
25-29	12,713 (15)	5,816 (16)	3,793 (17)	124 (14)	43 (22)	22,531 (16)
30-34	19,650 (23)	9,171 (25)	5,605 (25)	196 (22)	51 (26)	34,748 (24)
35-39	18,401 (22)	8,453 (23)	4,860 (22)	203 (22)	33 (17)	32,034 (22)
40-44	12,640 (15)	4,915 (13)	3,018 (14)	147 (16)	22 (11)	20,799 (14)
45-49	7,523 (9)	2,682 (7)	1,558 (7)	86 (9)	15 (8)	11,892 (8)
50-54	4,159 (5)	1,459 (4)	872 (4)	48 (5)	4 (2)	6,561 (5)
55-59	2,629 (3)	890 (2)	536 (2)	31 (3)	6 (3)	4,107 (3)
60-64	1,480 (2)	467 (1)	239 (1)	8 (1)	3 (2)	2,201 (2)
65 or older	1,320 (2)	290 (1)	155 (1)	26 (3)	1 (1)	1,797 (1)
Male subtotal	83,984 (100)	36,729 (100)	22,127 (100)	911 (100)	197 (100)	144,295 (100)
<b>Females</b>						
<b>Age at diagnosis (years)</b>						
Under 5	195 (4)	619 (7)	287 (8)	1 (1)	4 (11)	1,107 (7)
5-12	42 (1)	81 (1)	51 (1)	3 (3)	—	178 (1)
13-19	42 (1)	89 (1)	24 (1)	1 (1)	1 (3)	157 (1)
20-24	288 (7)	508 (6)	259 (7)	4 (5)	5 (14)	1,068 (7)
25-29	778 (18)	1,563 (18)	742 (21)	8 (9)	4 (11)	3,103 (21)
30-34	942 (22)	2,312 (26)	857 (24)	17 (20)	10 (28)	4,147 (28)
35-39	648 (15)	1,807 (21)	619 (18)	11 (13)	5 (14)	3,098 (18)
40-44	371 (9)	851 (10)	330 (9)	16 (19)	2 (6)	1,572 (9)
45-49	192 (4)	374 (4)	147 (4)	8 (9)	2 (6)	726 (4)
50-54	145 (3)	219 (3)	90 (3)	5 (6)	1 (3)	480 (3)
55-59	164 (4)	134 (2)	51 (1)	3 (3)	—	354 (2)
60-64	155 (4)	84 (1)	27 (1)	6 (7)	1 (3)	273 (2)
65 or older	396 (9)	96 (1)	38 (1)	3 (3)	1 (3)	535 (3)
Female subtotal	4,358 (100)	8,737 (100)	3,522 (100)	86 (100)	36 (100)	16,778 (100)
<b>Total</b>	<b>88,342</b>	<b>45,466</b>	<b>25,649</b>	<b>997</b>	<b>233</b>	<b>161,073</b>

<sup>1</sup> Includes 386 persons whose race/ethnicity is unknown.

**Table 9. AIDS cases and annual rates<sup>1</sup> per 100,000 population, by race/ethnicity, age group, and sex, reported in 1990, United States**

Race/ethnicity	Adults/adolescents						Children < 13 years old		Total	
	Males		Females		Total		No.	Rate	No.	Rate
	No.	Rate	No.	Rate	No.	Rate				
White, not Hispanic	20,943	27.4	1,236	1.5	22,179	14.0	163	0.5	22,342	11.7
Black, not Hispanic	10,263	92.4	2,539	20.0	12,802	53.8	384	5.2	13,186	42.3
Hispanic	6,026	71.9	1,069	12.6	7,095	42.0	227	3.6	7,322	31.6
Asian/Pacific Islander	238	9.4	19	0.7	257	4.8	3	0.2	260	3.8
American Indian/Alaskan Native	60	8.9	9	1.2	69	4.9	2	0.5	71	3.9
<b>Total<sup>2</sup></b>	<b>37,667</b>	<b>38.0</b>	<b>4,890</b>	<b>4.6</b>	<b>42,557</b>	<b>20.7</b>	<b>782</b>	<b>1.6</b>	<b>43,339</b>	<b>17.0</b>

<sup>1</sup> Race/ethnicity annual rates are calculated using 1990 census projections. See technical notes.

<sup>2</sup> Includes 158 persons whose race/ethnicity is unknown.

**Table 10. AIDS cases by year of diagnosis and definition category, diagnosed through December 1990, United States**

Definition category <sup>1</sup>	Year of diagnosis					Cumulative total No. (%)
	Before 1987	1987	1988	1989	1990	
	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	
Pre-1987 definition	37,239 ( 93)	21,908 (81)	23,264 (72)	24,388 (69)	17,154 (66)	123,953 (77)
1987 definition: <sup>2</sup>	2,680 ( 7)	5,152 (19)	9,208 (28)	11,158 (31)	8,922 (34)	37,120 (23)
<i>Specific disease</i>						
<i>presumptively diagnosed</i>	1,434	2,773	5,173	6,369	5,432	21,181
<i>Specific disease</i>						
<i>definitively diagnosed</i>	421	474	646	772	552	2,865
<i>HIV encephalopathy</i>	249	697	1,124	1,287	908	4,265
<i>HIV wasting syndrome</i>	576	1,208	2,265	2,730	2,030	8,809
<b>Total</b>	<b>39,919 (100)</b>	<b>27,060 (100)</b>	<b>32,472 (100)</b>	<b>35,546 (100)</b>	<b>26,076 (100)</b>	<b>161,073 (100)</b>

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

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

**Table 11. AIDS-indicator diseases diagnosed in patients reported in 1990, by age group, United States**

AIDS-indicator disease	Adults/adolescents		Children < 13 years old	
	No.	(%) <sup>1</sup>	No.	(%) <sup>1</sup>
Bacterial infections, multiple or recurrent	NA <sup>2</sup>		120	(15)
Candidiasis of bronchi, trachea, or lungs	1,004	( 2)	33	( 4)
Candidiasis of esophagus				
Definitive diagnosis	3,166	( 7)	59	( 8)
Presumptive diagnosis	2,473	( 6)	44	( 6)
Coccidioidomycosis, disseminated or extrapulmonary	110	( 0)	0	( 0)
Cryptococcosis, extrapulmonary	2,424	( 6)	8	( 1)
Cryptosporidiosis, chronic intestinal	777	( 2)	15	( 2)
Cytomegalovirus disease other than retinitis	1,597	( 4)	46	( 6)
Cytomegalovirus retinitis				
Definitive diagnosis	692	( 2)	2	( 0)
Presumptive diagnosis	591	( 1)	4	( 1)
HIV encephalopathy (dementia)	2,753	( 6)	103	(13)
Herpes simplex, with esophagitis, pneumonitis, or chronic mucocutaneous ulcers	1,486	( 3)	23	( 3)
Histoplasmosis, disseminated or extrapulmonary	452	( 1)	1	( 0)
Isosporiasis, chronic intestinal	65	( 0)	1	( 0)
Kaposi's sarcoma				
Definitive diagnosis	3,772	( 9)	1	( 0)
Presumptive diagnosis	857	( 2)	0	( 0)
Lymphoid interstitial pneumonia and/or pulmonary lymphoid hyperplasia	NA <sup>2</sup>			
Definitive diagnosis			67	( 9)
Presumptive diagnosis			91	(12)
Lymphoma, Burkitt's (or equivalent term)	289	( 1)	11	( 1)
Lymphoma, immunoblastic (or equivalent term)	882	( 2)	5	( 1)
Lymphoma, primary in brain	187	( 0)	1	( 0)
<i>Mycobacterium avium</i> or <i>M. kansasii</i> , disseminated or extrapulmonary				
Definitive diagnosis	1,847	( 4)	22	( 3)
Presumptive diagnosis	151	( 0)	0	( 0)
<i>M. tuberculosis</i> , disseminated or extrapulmonary				
Definitive diagnosis	1,009	( 2)	4	( 1)
Presumptive diagnosis	152	( 0)	0	( 0)
Mycobacterial disease, other, disseminated or extrapulmonary				
Definitive diagnosis	406	( 1)	7	( 1)
Presumptive diagnosis	230	( 1)	4	( 1)
<i>Pneumocystis carinii</i> pneumonia				
Definitive diagnosis	14,839	(35)	213	(27)
Presumptive diagnosis	5,978	(14)	74	( 9)
Progressive multifocal leukoencephalopathy	297	( 1)	1	( 0)
Salmonella septicemia, recurrent	190	( 0)	NA <sup>3</sup>	
Toxoplasmosis of brain				
Definitive diagnosis	850	( 2)	2	( 0)
Presumptive diagnosis	1,300	( 3)	1	( 0)
HIV wasting syndrome	7,187	(17)	124	(16)

<sup>1</sup>Percentages are based on 42,557 adult/adolescent and 782 pediatric cases reported to CDC in 1990. The sum of percentages is greater than 100, because some patients have more than one disease.

<sup>2</sup> Not applicable as indicator of AIDS in adults/adolescents.

<sup>3</sup> Tabulated above in "Bacterial infections, multiple or recurrent."



**Table 12. AIDS cases, case-fatality rates, and deaths, by half-year and age group, through December 1990, United States**

Half-year	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	81.8	30	6	66.7	1
1981 Jan.-June	92	93.5	38	8	62.5	2
July-Dec.	201	91.0	85	6	100.0	6
1982 Jan.-June	394	90.4	151	14	78.6	9
July-Dec.	686	88.8	283	15	80.0	5
1983 Jan.-June	1,262	92.2	517	32	93.8	13
July-Dec.	1,630	91.7	916	42	78.6	16
1984 Jan.-June	2,544	89.4	1,377	49	83.7	25
July-Dec.	3,338	90.1	1,920	62	72.6	24
1985 Jan.-June	4,822	89.2	2,754	94	74.5	44
July-Dec.	6,192	87.5	3,749	127	74.0	68
1986 Jan.-June	8,136	85.9	4,921	134	73.1	64
July-Dec.	9,778	83.1	6,262	178	66.9	84
1987 Jan.-June	12,594	82.4	7,282	219	62.1	113
July-Dec.	14,002	76.1	7,663	245	58.4	157
1988 Jan.-June	15,796	69.4	8,884	236	50.0	129
July-Dec.	16,122	62.8	10,099	318	45.3	151
1989 Jan.-June	17,728	52.5	11,330	309	42.7	154
July-Dec.	17,219	43.4	12,705	290	38.3	160
1990 Jan.-June	16,459	29.8	11,614	263	24.3	135
July-Dec.	9,215	16.2	6,620	139	18.0	78
<b>Total<sup>1</sup></b>	<b>158,287</b>	<b>62.8</b>	<b>99,372</b>	<b>2,786</b>	<b>51.7</b>	<b>1,441</b>

<sup>1</sup>Death totals include 172 adults/adolescents and 3 children known to have died, but whose dates of death are unknown.

**Table 13. AIDS deaths by race/ethnicity, age at death, and sex, occurring in 1988 and 1989, and cumulative totals reported through December 1990, United States<sup>1</sup>**

Race/ethnicity and age at death <sup>2</sup>	Males			Females			Both Sexes		
	1988	1989	Cumulative total	1988	1989	Cumulative total	1988	1989	Cumulative total
<b>White, not Hispanic</b>									
Under 15	43	41	202	27	41	141	70	82	343
15-24	238	267	1,254	28	33	140	266	300	1,394
25-34	3,175	4,029	17,586	191	234	952	3,366	4,263	18,538
35-44	3,723	4,916	20,556	128	154	609	3,851	5,070	21,165
45-54	1,607	2,102	8,715	41	59	233	1,648	2,161	8,948
55 or older	873	1,012	4,481	131	107	581	1,004	1,119	5,062
All ages	9,659	12,367	52,869	546	628	2,659	10,205	12,995	55,528
<b>Black, not Hispanic</b>									
Under 15	70	70	366	72	77	369	142	147	735
15-24	197	191	904	58	57	279	255	248	1,183
25-34	1,768	2,049	9,016	479	577	2,344	2,247	2,626	11,360
35-44	1,738	2,335	8,803	345	456	1,673	2,083	2,791	10,476
45-54	573	723	2,878	76	123	389	649	846	3,267
55 or older	266	337	1,271	52	53	229	318	390	1,500
All ages	4,612	5,705	23,275	1,082	1,343	5,301	5,694	7,048	28,576
<b>Hispanic</b>									
Under 15	37	39	189	31	46	169	68	85	358
15-24	109	119	540	29	31	121	138	150	661
25-34	1,089	1,353	5,445	195	231	883	1,284	1,584	6,328
35-44	1,016	1,334	5,124	130	161	599	1,146	1,495	5,723
45-54	354	485	1,782	34	50	147	388	535	1,929
55 or older	147	192	692	14	24	77	161	216	76
All ages	2,752	3,522	13,800	433	543	2,005	3,185	4,065	15,805
<b>Asian/Pacific Islander</b>									
Under 15	2	—	7	1	1	2	3	1	9
15-24	3	4	14	1	—	2	4	4	16
25-34	33	39	156	3	4	14	36	43	170
35-44	44	61	217	4	7	20	48	68	237
45-54	17	27	96	4	2	10	21	29	106
55 or older	8	14	55	4	3	12	12	17	67
All ages	107	145	547	17	17	61	124	162	608
<b>American Indian/Alaskan Native</b>									
Under 15	—	1	2	—	—	1	—	1	3
15-24	3	2	10	—	—	1	3	2	11
25-34	7	10	48	1	1	9	8	11	57
35-44	4	11	35	—	3	5	4	14	40
45-54	3	4	17	—	1	2	3	5	19
55 or older	2	—	7	—	—	1	2	—	8
All ages	19	28	119	1	5	20	20	33	139
<b>All racial/ethnic groups</b>									
Under 15	152	151	767	131	166	683	283	317	1,450
15-24	551	583	2,728	116	121	544	667	704	3,272
25-34	6,079	7,491	32,287	869	1,048	4,208	6,948	8,539	36,495
35-44	6,541	8,677	34,800	607	783	2,910	7,148	9,460	37,710
45-54	2,559	3,346	13,507	155	235	781	2,714	3,581	14,288
55 or older	1,301	1,560	6,521	202	188	902	1,503	1,748	7,423
All ages	17,183	21,808	90,753	2,080	2,541	10,060	19,263	24,349	100,813

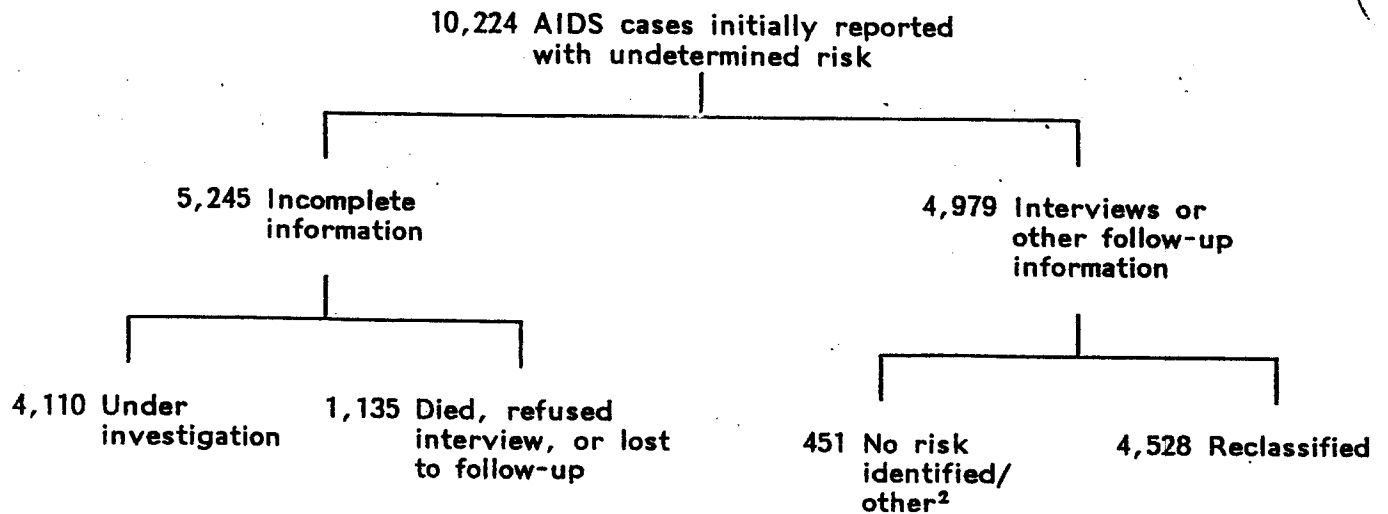
<sup>1</sup> Data tabulations for 1988 and 1989 are based on date of death occurrence. Data for deaths occurring in 1990 are incomplete and not tabulated separately, but are included in the cumulative totals. Tabulations for 1988 and 1989 may increase as additional deaths are reported to the CDC.

<sup>2</sup> Data tabulated under "All ages" include 175 persons whose age at death is unknown. Data tabulated under "All racial/ethnic groups" include persons whose race/ethnicity is unknown.

**Table 14. Adult/adolescent AIDS cases by single and multiple exposure categories, reported through December 1990, United States**

Exposure category	AIDS cases	
	No.	( %)
<b>Single mode of exposure</b>		
Male homosexual/bisexual contact	90,407	(57)
Intravenous (IV) drug use (female and heterosexual male)	29,520	(19)
Hemophilia/coagulation disorder	855	(1)
Heterosexual contact	8,040	(5)
Receipt of blood transfusion, blood component, or tissue	3,684	(2)
Other/undetermined	5,696	(4)
<b>Single mode of exposure subtotal</b>	<b>138,202</b>	<b>(87)</b>
<b>Multiple modes of exposure</b>		
Male homosexual/bisexual contact; IV drug use	9,495	(6)
Male homosexual/bisexual contact; hemophilia	34	(0)
Male homosexual/bisexual contact; heterosexual contact	1,904	(1)
Male homosexual/bisexual contact; receipt of transfusion	1,670	(1)
IV drug use; hemophilia	42	(0)
IV drug use; heterosexual contact	3,905	(2)
IV drug use; receipt of transfusion	701	(0)
Hemophilia; heterosexual contact	9	(0)
Hemophilia; receipt of transfusion	509	(0)
Heterosexual contact; receipt of transfusion	400	(0)
Male homosexual/bisexual contact; IV drug use; hemophilia	8	(0)
Male homosexual/bisexual contact; IV drug use; heterosexual contact	749	(0)
Male homosexual/bisexual contact; IV drug use; receipt of transfusion	263	(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	92	(0)
IV drug use; hemophilia; heterosexual contact	2	(0)
IV drug use; hemophilia; receipt of transfusion	19	(0)
IV drug use; heterosexual contact; receipt of transfusion	206	(0)
Hemophilia; heterosexual contact; receipt of transfusion	13	(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	35	(0)
IV drug use; hemophilia; heterosexual contact; receipt of transfusion	3	(0)
<b>Multiple modes of exposure subtotal</b>	<b>20,085</b>	<b>(13)</b>
<b>Total</b>	<b>158,287</b>	<b>(100)</b>

**Figure 6. Results of investigations of adult/adolescent AIDS cases with undetermined risk reported through December 1990<sup>1</sup>**



<sup>1</sup> Excludes 68 children under 13 years of age who have an undetermined risk: 60 children are under investigation and 8 have dir refused interview; or were lost to follow-up. An additional 108 children who were initially reported with an undetermined risk ha been reclassified after investigation.

<sup>2</sup> **Health-care workers.** 3 of the 451 adults/adolescents are classified as "other" and are health-care workers who seroconverted HIV and developed AIDS after occupational exposure to HIV-infected blood. For the remaining 448, the mode of exposure to H remains undetermined after investigation. 69 of these are health-care workers, 63 of whom responded to a standardized questionnaire. 36 (57%) 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. **Heterosexual transmission.** 393 of the 448 patients who had no risk identified after follow-up responded to a standardized questionnaire; 126 (35%) of 359 persons responding to questions related to sexually transmitted disease gave a history of such disease and 84 (34%) of 247 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.

## 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.<sup>1</sup> 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

cities and 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). The cities and counties which comprise each metropolitan area in Table 2 are listed in the Bureau of Census publication, "State and Metropolitan Area Data Book, 1986."

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.

"Homosexual/bisexual contact" cases include men who report sexual contact with other men. "Heterosexual contact" cases include persons who report either specific heterosexual contact with a

<sup>1</sup>Included 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.

person with, or at increased risk for, HIV infection (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 sub-Saharan 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 rates in Table 1 and Table 2 are extrapolations based on U.S. Bureau of Census data from the 1980 census and from 1988 post-census estimates. Each 12-month rate is the number of cases for a 12-month period divided by the 1989 or 1990 extrapolation, multiplied by 100,000.

The denominators for computing race-specific rates (Table 9, included only in the year-end edition) are based on 1990 census projections published in U.S. Bureau of Census publications, "Projections of the Population of the United States, by Age, Sex, and Race, 1988 to 2080," and "Projections of the Hispanic Population, 1983 to 2080." Race-specific rates are the number of cases reported for a particular race/ethnicity during the preceding 12-month period divided by the 1990 census projection 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 extrapolation from recent trends." In: C. Castillo-Chavez, *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 30% 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. (*MMWR* 1990;39:81-86.)