CENTERS FOR DISEASE CONTROL

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World AIDS Day 1990

The World Health Organization (WHO) has designated "Women and AIDS" as the theme of World AIDS Day, December 1, 1990. WHO estimates that more than one third of the 8 million persons infected with HIV worldwide are women. On December 1, WHO, governments, and nongovernmental and community-based organizations around the world will mark this third annual World AIDS Day with special events designed to increase information, understanding, and compassion about AIDS and its impact on women.

Current Trends

AIDS in Women – United States

In the United States, the number of acquired immunodeficiency syndrome (AIDS) cases reported in women has been steadily increasing. In addition, AIDS cases in women account for an increasing proportion of all AIDS cases in the United States. By the end of 1990, reports to CDC of AIDS cases among women will exceed 15,000. From November 1989 through October 1990, women accounted for 11% of all reported cases in adults; from 1988 to 1989, diagnosed cases increased by 29% in women, compared with 18% in men. By 1987, AIDS was the eighth leading cause of death in women aged 15–44 years; based on current trends, AIDS will be among the five leading causes of death in this population in 1991 (*1*).

Human immunodeficiency virus (HIV) infection disproportionately affects women in racial/ethnic minority groups. Although black and Hispanic women constitute 19% of all U.S. women, they represent 72% of all U.S. women diagnosed with AIDS. In 1988, the death rate from HIV infection was nine times higher for black than for white women (*1*). These disproportionate rates largely reflect the occurrence of HIV infection among injecting drug users and their sex partners.

Although all states have reported AIDS in women, annual rates for states vary markedly. From November 1989 through October 1990, 4.3 cases were reported per

AIDS in Women — Continued

100,000 women in the United States. Five areas (the District of Columbia, Florida, New Jersey, New York, and Puerto Rico) reported >10 cases per 100,000 women.

Among all cases of AIDS in women, 85% occurred among women of childbearing age (15–44 years). Approximately one fourth of these women were 20–29 years of age at the time of diagnosis; many were probably infected as teenagers.

Reported By: Div of HIV/AIDS, Center for Infectious Diseases, CDC.

Editorial Note: Many women in the United States are unaware they are at risk for HIV infection, and HIV-infected women often remain undiagnosed until the onset of AIDS or until a perinatally infected child becomes ill. Many women with HIV infection are of lower socioeconomic status; therefore, prevention efforts, health care, and social services—including those for drug treatment—rely on public resources.

During 1991, in collaboration with state and local health agencies, CDC will continue to strengthen programs to prevent HIV transmission in women. These programs will 1) further define the risk factors for transmission and the natural history of disease in HIV-infected women; 2) study factors that facilitate or inhibit condom use and incorporate study findings into HIV-prevention strategies; 3) continue to assess women's knowledge of their HIV-risk status and its role in the use of health services; and 4) expand targeted HIV-intervention activities at selected sites. In addition, CDC will continue to collaborate with the U.S. Agency for International Development, the World Health Organization, other international agencies, and other countries to better understand and prevent HIV infection worldwide.

These efforts will assist in decreasing the occurrence of HIV infection and AIDS among women and increase the number of women who receive HIV-prevention services, early counseling and HIV detection, and referral to medical and support services. Prevention of HIV infection in women is critical for the control of the HIV epidemic in the United States and throughout the world.

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Epidemiologic Notes and Reports

Risk for Cervical Disease in HIV-Infected Women — New York City

Recent reports have suggested an association between human immunodeficiency virus (HIV) infection and cervical disease in women (*1–5*). This report summarizes findings from four studies in New York City that assessed the risk for cervical disease in women infected with HIV (*6–10*).

Among patients receiving care from two ambulatory-care clinics for HIV-infected women, the prevalence of cervical dysplasia on Papanicolaou (Pap) smear for HIV-positive women was eight and 11 times greater than the prevalence of dysplasia for women residing in the respective communities (*6*). Specifically, among clinic

Cervical Disease — Continued

patients, the proportions of HIV-positive women with dysplasia were 32% (10/31) and 33% (6/18); in contrast, among women in the communities, the prevalences of cervical dysplasia were 4% and 3%, respectively.

The association of HIV infection with cervical squamous intraepithelial lesions (SIL)* and human papillomavirus (HPV) infection of the cervix was prospectively investigated in 132 women attending a methadone maintenance clinic (*7,8*). Evidence for HPV infection was detected in 67% of symptomatic HIV-positive women, 31% of asymptomatic HIV-positive women, and 27% of HIV-negative women. HPV was more strongly associated with SIL in symptomatic (odds ratio [OR] = 29.3; 95% confidence interval [CI] = 1.6–551.9) and asymptomatic (OR = 8.8; 95% CI = 1.6–47.8) HIV-positive women than in HIV-negative women (OR = 2.3; 95% CI = 0.5–11.7). In women who were not infected with HPV, no association was found between HIV and SIL. The findings of this investigation suggest that HIV-induced immunosuppression may predispose to HPV-mediated cervical cytologic abnormalities.

The characteristics of cervical disease were assessed in women with known HIV status attending a medical center for evaluation of abnormal Pap smears (*9*). Colposcopic evaluations of 77 patients suggested that cervical intraepithelial neoplasia (CIN) was more severe and extensive in 25 HIV-positive women than in 52 HIV-negative women. Among the HIV-positive women, CIN was a higher grade and more likely to involve multifocal or extensive cervical lesions, multiple sites of the lower genital tract, and the perianal area. The investigators also reported that in a group of 37 patients who were <50 years of age and who had invasive cervical carcinoma, seven (19%) were HIV-positive. The seven HIV-positive patients had more advanced stages of disease and poorer outcomes following therapy than the 30 HIV-negative patients. These findings suggest that HIV infection may influence the rate of progression of both preinvasive and invasive cervical neoplasia.

Finally, among 32 HIV-infected women who were evaluated for cervical disease by Pap smear and colposcopically directed biopsies (*10*), three (9.4%) had abnormal cytology on Pap smear; however, for 27 (84.4%), histology was abnormal on biopsy, including 13 (40.6%) with CIN and 14 (43.8%) with chronic cervicitis. The findings of this study suggest that, in HIV-positive women, Pap smear and cervical biopsy results may correlate poorly.

Reported by: M Maiman, MD, R Fruchter, PhD, State Univ of New York Health Science Center, Brooklyn; R Klein, MD, Montefiore Medical Center/Albert Einstein Coll of Medicine; C Marte, MD, Community Health Project, Bellevue Hospital; S Schultz, MD, MA Chiasson, DrPH, New York City Dept of Health. Div of HIV/AIDS, Center for Infectious Diseases; Div of STD/HIV Prevention, Center for Prevention Svcs; Div of Chronic Disease Control and Community Intervention, Center for Chronic Disease Prevention and Health Promotion, CDC.

Editorial Note: The findings of the investigations in New York City are consistent with previous reports suggesting an association between HIV infection and cervical disease in women (*1–5*). However, methodologic concerns about these four studies emphasize the need for additional assessment of an association between HIV infection and cervical disease. For example, the increased prevalence of cervical dysplasia in the HIV-positive women at the two ambulatory-care clinics (*6*) may have been associated with other possible risk factors. In addition, the community controls used in that study may not be directly comparable to the study group, since the

*Low-grade SIL encompass cellular changes associated with human papillomavirus and mild dysplasia/cervical intraepithelial neoplasia (CIN) 1; high-grade SIL include moderate dysplasia/CIN 2, severe dysplasia/CIN 3, and carcinoma-in-situ/CIN 3 (*11*).

Cervical Disease — Continued

HIV-positive women may have been more likely to have had sexual contact with multiple partners, thereby independently increasing their risk for cervical disease. Other methodologic concerns related to these studies include limited sample sizes, limitations of cytologic screening for diagnostic purposes, and potential selection bias. Finally, the study of HIV-positive women who were evaluated by Pap smear and cervical biopsy was not blinded and lacked a control group (*10*).

These reports and other investigations have not determined whether HIV-infected women are at increased risk for cervical cancer. This risk may be assessed indirectly by examination of trends of cervical cancer rates in areas with high prevalences of HIV-infected women. For example, in New York City, where the prevalence of HIV infection in childbearing women (12.5 per 1000 in 1987–88) is one of the highest among U.S. cities, the incidence of cervical cancer in women aged 15–44 years did not increase from 1981 through 1986 (*12,13*). In the United States, approximately 85% of women with AIDS or HIV infection are of reproductive age (15–44 years). However, in 1987, cervical cancer rarely was listed among HIV-related deaths in women of reproductive age (*14*). Because the number of HIV-infected women has continued to increase since 1987, trends in cervical cancer rates will need to be examined for more recent years.

Clarification of the relationship between HIV infection and cervical cancer and dysplasia is also complicated by complexities related to interpretation of cervical cytologic abnormalities. Squamous cell carcinoma of the cervix and its precursors form a spectrum of disease, ranging from mild dysplasia (CIN 1) to invasive carcinoma. In addition, although dysplasia is the precursor of cervical cancer, not all dysplastic tissue progresses to invasive disease. Without therapy, cervical dysplasia can regress to normal tissue, persist without change, or progress to invasive disease. Whether HIV-induced immune suppression substantially alters the course and severity of cervical dysplasia is unknown, but the findings summarized in this report indicate a need for further investigation.

The etiology of cervical cancer may be multifactorial (*15*), including factors such as number of sex partners, age at first intercourse, infectious agents (particularly HPV), cigarette smoking, certain dietary deficiencies, and immunosuppression. The number of sex partners, both of women with cervical cancer and their sexual contacts, contributes independently to the risk, suggesting that cervical cancer is a sexually transmitted disease. Thus, the behavior that places women at risk for HIV infection may also increase their risk for cervical carcinoma and of acquiring viral infections that may be associated with cervical carcinoma. Therefore, epidemiologic studies that can adjust for potential confounding variables, such as sexual behavior, are needed to determine whether HIV infection places women at additional risk for cervical disease.

In 1988, a consensus recommendation for cervical cancer screening was adopted by the American Cancer Society, the National Cancer Institute, the American College of Obstetricians and Gynecologists, the American Medical Association, the American Nurses' Association, the American Academy of Family Physicians, and the American Medical Women's Association (*16*). The recommendation suggests that all women who are or who have been sexually active or who have reached age 18 years should have an annual Pap test and pelvic examination. After a woman has had three or more consecutive satisfactory normal annual examinations, the Pap test may be performed less frequently at the discretion of her physician. Another advisory group,

Cervical Disease — Continued

the U.S. Preventive Services Task Force, recommended in 1989 that Pap smears should begin with the onset of sexual activity and should be repeated every 1–3 years at the physician's discretion (*17*). The time interval between Pap tests recommended by the physician should be based on the presence of risk factors for cervical cancer. In accordance with these recommendations and information suggesting that HIV-infected women may be at increased risk for cervical disease, HIV-infected women should have a Pap smear annually.

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International Notes

Update: Acquired Immunodeficiency Syndrome — Europe

As of March 31, 1990, 35,376 cases of acquired immunodeficiency syndrome (AIDS) had been reported to the World Health Organization (WHO) Collaborating Centre on AIDS in Paris by 32 countries in the European Region (EURO).* This number represented an increase of 61.9% (13,519 new cases) in the total number of cases reported since March 1989 (Figure 1, Table 1) (*4*).

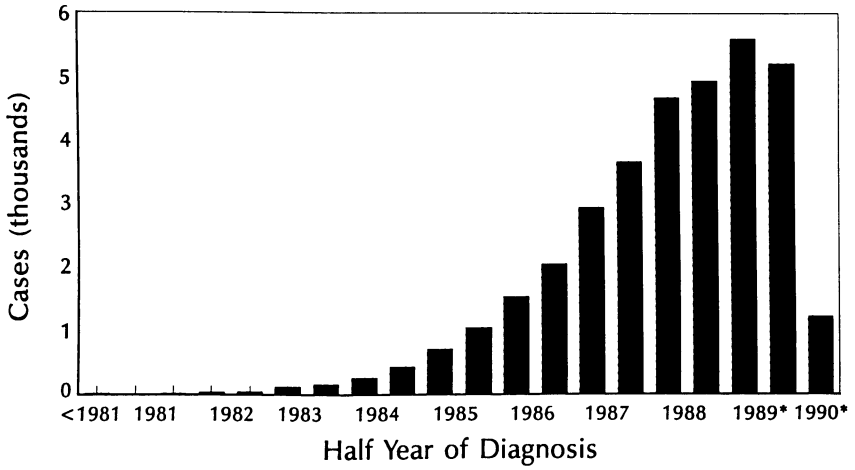
Of the 35,376 cases, 16,170 (45.7%) occurred in homosexual/bisexual men; 10,660 (30.1%) in intravenous-drug users (IVDUs); 2822 (8.0%) in persons reporting heterosexual contact with a person either infected with human immunodeficiency virus (HIV) or at risk for HIV infection; 1390 (3.9%) in transfusion recipients; 1151 (3.3%) in persons with coagulation disorders (e.g., hemophilia); 702 (2.0%) in male homosexual/bisexual IVDUs; 596 (1.7%) in children born to HIV-infected women; and 1885 (5.3%) in persons whose exposure was classified as "other/unknown."

Of the 34,177 cases in adults (persons ≥13 years of age), 4335 (12.7%) occurred in women. Of these, 2438 (56.2%) were in IVDUs; 1142 (26.3%), in women reporting heterosexual contact with a man either infected with HIV or at risk for HIV infection; 507 (11.7%), in transfusion recipients; 18 (0.4%), in women with coagulation disorders; and 230 (5.3%), in women whose exposure was classified as "other/unknown."

Cumulative AIDS incidence rates per million population were highest in Switzerland (190.2), France (173.2), Spain (135.1), Denmark (112.4), and Italy (105.3). In

*As of June 30, 1990, 38,314 cases of AIDS had been reported to WHO (*1*); however, these data do not include risk-factor information or the number of AIDS cases reported in France since March 1990.

FIGURE 1. Reported AIDS cases, by half year of diagnosis — Europe, through March 31, 1990*



Source: WHO Collaborating Centre on AIDS, Paris.
*Reporting incomplete for 1989 and 1990.

AIDS — Europe — Continued

TABLE 1. Cumulative AIDS cases reported by 32 countries and annual incidence rates and estimated cumulative incidence rates per million population — World Health Organization (WHO) European Region, through March 31, 1990

Country	Cumulative through March 1989	Cumulative through March 1990	Annual* cases	Annual incidence	Cumulative incidence
Albania	0	0	0	0.0	0.0
Austria	191	415	224	29.5	54.6
Belgium	474	651	177	17.9	65.8
Bulgaria	3	7	4	0.4	0.8
Czechoslovakia	17	23	6	0.4	1.5
Denmark	392	573	181	35.5	112.4
Federal Republic of Germany	3,086	4,653	1,567	25.5	75.7
Finland	42	58	16	3.2	11.6
France	6,409	9,718	3,309	59.0	173.2
German Democratic Republic	13	19	6	0.4	1.1
Greece	205	295	90	9.0	29.5
Hungary	21	34	13	1.2	3.2
Iceland	11	13	2	4.0	26.0
Ireland	88	142	54	15.4	40.6
Israel	79	109	30	6.7	24.2
Italy	3,494	6,068	2,574	44.7	105.3
Luxembourg	16	26	10	25.0	65.0
Malta	14	14	0	0.0	35.0
Monaco	0	2	2	85.5	85.5
Netherlands	791	1,189	398	26.7	79.8
Norway	111	153	42	10.0	36.4
Poland	8	35	27	0.7	0.9
Portugal	224	410	186	17.9	39.4
Romania†	10	478	468	20.2	20.6
San Marino	0	1	1	50.0	50.0
Spain	2,781	5,295	2,514	64.1	135.1
Sweden	280	406	126	14.8	47.8
Switzerland	806	1,255	449	68.0	190.2
Turkey	17	31	14	0.3	0.6
United Kingdom	2,192	3,157	965	16.8	55.1
Union of Soviet Socialist Republics	7	26	19	0.1	0.1
Yugoslavia	75	120	45	1.9	5.1
Total	**21,857**	**35,376**	**13,519**	—	—

*April 1989–March 1990.

†Through December 1989, Romania reported a total of 69 cases, including 48 in infants and children presumably infected by blood transfusions or through the use of unsterile equipment used to administer medical injections. By March 1990 (following an investigation by the Romanian Ministry of Health [MOH] in collaboration with WHO), an additional 409 cases had been reported (478 cumulative cases). Because most cases occurred in infants and young children and because diagnostic capabilities were limited, the Romanian MOH adopted a modification of the WHO Bangui clinical case definition (reported cases must have serologic evidence of HIV infection) for use in AIDS surveillance (*2,3*). These 409 cases subsequently were reclassified according to the WHO/CDC AIDS case definition used in the European Region and integrated in the European AIDS surveillance data in this report.

AIDS — Europe — Continued

comparison, the cumulative incidence rate in the United States was 515.7 per million population (*5*). Countries in Eastern Europe reported few cases, and rates in those countries were <6 per million (except in Romania, where the rate was 20 per million). In northern European countries, including Denmark, the Federal Republic of Germany, the Netherlands, Norway, Sweden, and the United Kingdom, at least 70% of reported cases occurred among homosexual/bisexual men; in two southern European countries—Italy and Spain—66% and 63% of cases, respectively, occurred among IVDUs.

Countries in EURO reported 1199 pediatric AIDS cases, including 560 (46.7%) from three countries—France, Italy, and Spain—and 428 (35.7%) from Romania. Vertical transmission (i.e., from mother to infant) was the principal mode of transmission in France (79%), Italy (89%), and Spain (70%); for these cases, 47% of mothers were IVDUs. In Romania, 241 (56.3%) pediatric cases occurred in children with histories of multiple hospitalizations and multiple injections, 169 (39.5%) in transfusion recipients, 13 (3.0%) in children born to HIV-infected mothers, and five (1.2%) in children with coagulation disorders; many of the transfusion recipients also had histories of multiple hospitalizations and multiple injections.

Adapted from WHO Wkly Epidemiol Rec *1990;65:239–43 as reported by: RA Ancelle-Park, MD, JB Brunet, MD, E Couturier-Moren, MD, WHO Collaborating Centre on AIDS, Paris, France. F Popovici, R Apetrei, N Beldescu, Romanian Ministry of Health. Surveillance Br, Div of HIV/AIDS, Center for Infectious Diseases, CDC.*

Editorial Note: In EURO, since March 1989, the countries reporting the largest relative annual percent increases in AIDS cases have been in Eastern Europe (Romania, 4680%; Poland, 338%; Union of Soviet Socialist Republics, 271%; and Bulgaria, 133%). Factors that may account for these recent relative increases may include the later introduction and recognition of HIV in these countries and/or improved AIDS surveillance and reporting. In Romania, a large outbreak of nosocomially transmitted HIV infection accounted for most AIDS cases reported in that country (*6*).

The outbreak in Romania represents the second report of a major nosocomial outbreak of HIV transmission (*6,7*). Most AIDS patients in Romania appear to have acquired HIV infection through transfusions of unscreened blood and through reuse of inadequately sterilized needles and syringes, which resulted from shortages of injection and sterilization equipment (*6*). This outbreak further demonstrates the serious potential for HIV transmission in medical facilities that lack sufficient medical supplies and have inadequate sterilization practices.

WHO, with technical assistance from CDC, has assisted the Romanian Ministry of Health in establishing national AIDS surveillance and HIV sentinel surveillance systems and in designing and conducting epidemiologic studies to further clarify the magnitude and patterns of HIV transmission among Romanian children. Information obtained from HIV/AIDS surveillance and from these studies is being used to help target, enhance, and evaluate AIDS prevention activities in Romania.

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AIDS — Europe — Continued

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Current Trends

Update: Public Health Surveillance for HIV Infection — United States, 1989 and 1990

Since 1981, state and territorial health departments have provided reports of acquired immunodeficiency syndrome (AIDS) to CDC; AIDS cases are now reported by all 50 states and the District of Columbia. Persons with reported cases of AIDS represent approximately 10% of the estimated one million persons currently infected with human immunodeficiency virus (HIV) (*1*). Consequently, many states have enacted statutes or promulgated public health regulations that mandate the reporting of HIV-infected persons; these reports may assist with early medical intervention and partner notification activities, provide a minimum estimate of the number of infected persons who have been tested and identified, and facilitate planning for medical and social services. This report summarizes current HIV-reporting practices by state.

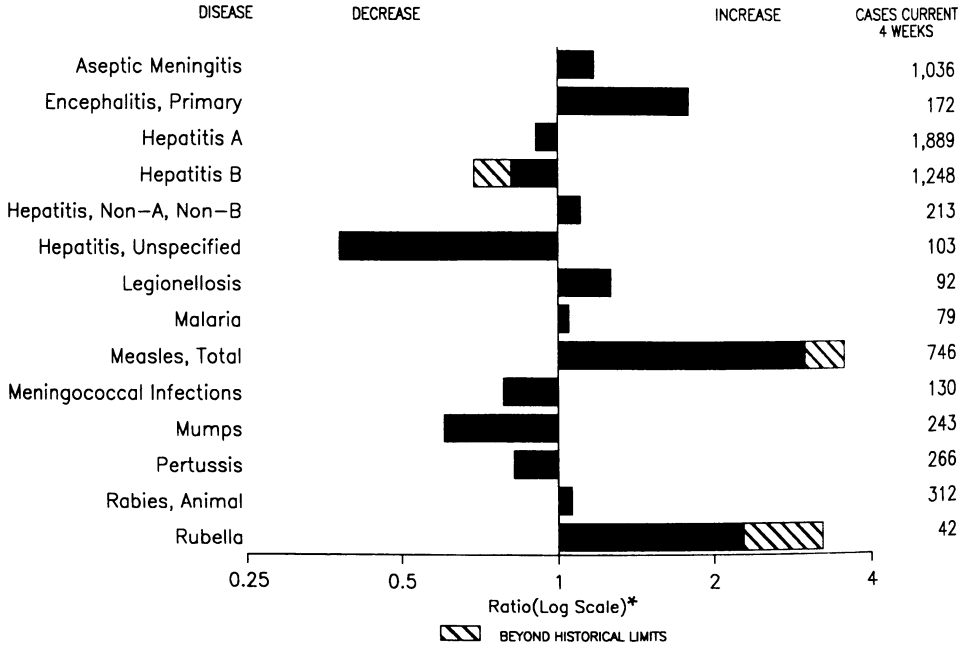
In telephone surveys conducted in 1989 and 1990, CDC requested all 50 states and the District of Columbia to provide information regarding current HIV-reporting practices. In most states, because of limited resources, reports of HIV infection are provided through passive surveillance systems; reports of HIV infection may originate from state public health laboratories, private laboratories, private physicians, or other health-care providers. However, because surveillance methods differ by state and are not yet standardized, data cannot be readily compared between states or to AIDS cases.

As of October 1990, 33 states required that HIV infection in persons who do not yet meet the criteria for CDC-defined AIDS be reported (Table 1, page 859); these states accounted for 34.4% of all AIDS cases reported in the United States through September 1990. As of October 1, 1990, 21 of the 33 states had enacted legislation or promulgated regulations that require reporting of HIV-infected persons by name to state or local health departments. These 21 states accounted for 12.6% of all reported AIDS cases. All 21 states require reported information to include the person's sex, age, and race/ethnicity; 19 states, the mode of transmission; six, the clinical status; and three, the CD4+ T-cell count. In 19 states, duplicate HIV reports are excluded. Sixteen of the 21 states with reporting by name also offer the option of anonymous HIV testing in some circumstances. Thus, patient names are not always provided.

In 12 of the 33 states, anonymous (i.e., without names or identifiers) individual reports of HIV infection must be provided to the state health department; these 12 states account for 21.8% of all reported AIDS cases. Eleven states require reporting of

(Continued on page 859)

FIGURE I. Notifiable disease reports, comparison of 4-week totals ending November 24, 1990, with historical data — United States



*Ratio of current 4-week total to mean of 15 4-week totals (from comparable, previous, and subsequent 4-week periods for past 5 years).

TABLE I. Summary — cases of specified notifiable diseases, United States, cumulative, week ending November 24, 1990 (47th Week)

	Cum. 1990		Cum. 1990
AIDS	37,786	Plague	2
Anthrax	-	Poliomyelitis, Paralytic*	-
Botulism: Foodborne	19	Psittacosis	99
Infant	55	Rabies, human	1
Other	6	Syphilis: civilian	43,862
Brucellosis	72	military	225
Cholera	4	Syphilis, congenital, age < 1 year	685
Congenital rubella syndrome	4	Tetanus	56
Diphtheria	4	Toxic shock syndrome	270
Encephalitis, post-infectious	87	Trichinosis	26
Gonorrhea: civilian	594,996	Tuberculosis	20,792
military	7,728	Tularemia	130
Leprosy	181	Typhoid fever	460
Leptospirosis	47	Typhus fever, tickborne (RMSF)	629
Measles: imported	1,078		
indigenous	24,190		

*Three cases of suspected poliomyelitis have been reported in 1990; five of 13 suspected cases in 1989 were confirmed and all were vaccine-associated.

TABLE II. Cases of specified notifiable diseases, United States, weeks ending November 24, 1990, and November 25, 1989 (47th Week)

Reporting Area	AIDS	Aseptic Menin-gitis	Encephalitis		Gonorrhea (Civilian)		Hepatitis (Viral), by type				Legionel-losis	Leprosy
			Primary	Post-in-fectious			A	B	NA,NB	Unspeci-fied		
	Cum. 1990	Cum. 1990	Cum. 1990	Cum. 1990	Cum. 1990	Cum. 1989	Cum. 1990	Cum. 1990	Cum. 1990	Cum. 1990	Cum. 1990	Cum. 1990
UNITED STATES	37,786	10,129	1,037	87	594,996	631,828	26,016	18,066	2,350	1,513	1,185	181
NEW ENGLAND	1,363	375	25	-	16,535	18,649	560	945	86	61	67	10
Maine	52	18	3	-	183	240	10	24	4	1	5	-
N.H.	64	40	-	-	265	167	7	40	6	3	4	-
Vt.	15	36	2	-	47	62	5	42	6	-	6	-
Mass.	752	119	11	-	6,949	7,241	368	583	60	55	43	9
R.I.	79	118	1	-	1,125	1,340	49	45	-	2	9	1
Conn.	401	44	8	-	7,966	9,599	121	211	10	-	-	-
MID. ATLANTIC	11,255	954	45	7	78,215	89,611	3,379	2,259	208	88	357	20
Upstate N.Y.	1,426	517	37	1	13,173	16,095	1,064	630	76	25	134	1
N.Y. City	6,541	132	3	3	30,620	35,149	487	553	25	43	83	14
N.J.	2,174	-	1	-	13,059	13,530	412	524	39	-	48	4
Pa.	1,114	305	4	3	21,363	24,837	1,416	552	68	20	92	1
E.N. CENTRAL	2,596	3,069	269	15	113,891	117,791	2,201	2,140	390	83	304	2
Ohio	575	591	84	4	33,223	30,949	224	362	79	12	98	-
Ind.	238	331	12	9	10,200	8,752	221	377	18	15	45	-
Ill.	1,056	703	87	2	35,697	38,025	1,066	412	44	17	26	1
Mich.	523	1,055	71	-	27,734	30,385	351	602	40	39	93	1
Wis.	204	389	15	-	7,037	9,680	339	387	209	-	42	-
W.N. CENTRAL	949	546	111	2	30,439	29,992	1,643	819	135	31	72	1
Minn.	176	112	70	1	3,710	3,392	232	100	25	-	8	-
Iowa	43	103	7	-	2,059	2,464	260	51	12	4	4	-
Mo.	537	205	7	1	18,414	18,304	447	523	69	20	37	-
N. Dak.	2	25	3	-	94	135	24	5	2	1	1	-
S. Dak.	6	9	6	-	268	257	354	7	4	-	2	-
Nebr.	55	42	7	-	1,655	1,417	104	31	4	-	12	1
Kans.	130	50	11	-	4,239	4,023	222	102	19	6	8	-
S. ATLANTIC	8,138	1,802	307	29	169,442	169,396	2,889	3,600	320	233	173	6
Del.	92	46	5	-	2,898	2,968	103	93	9	2	11	-
Md.	909	248	24	1	21,744	19,737	931	502	54	14	57	3
D.C.	630	9	-	-	12,267	9,773	15	39	4	-	2	-
Va.	666	344	51	1	16,238	14,830	283	236	42	162	13	-
W. Va.	59	53	60	-	1,214	1,332	20	81	4	9	4	-
N.C.	528	230	39	-	26,311	25,540	620	971	129	-	31	1
S.C.	319	22	1	-	13,348	15,242	40	567	15	9	24	-
Ga.	1,175	291	5	1	36,636	33,243	337	450	11	9	21	-
Fla.	3,760	559	122	26	38,786	46,731	540	661	52	28	10	2
E.S. CENTRAL	945	677	60	2	52,902	51,427	370	1,405	200	8	55	1
Ky.	162	184	25	-	5,228	4,954	87	469	55	6	22	-
Tenn.	310	145	26	2	16,937	17,299	181	760	123	-	19	1
Ala.	220	237	9	-	17,751	16,696	100	157	19	1	14	-
Miss.	253	111	-	-	12,986	12,478	2	19	3	1	-	-
W.S. CENTRAL	3,833	786	73	8	64,539	65,351	3,159	1,965	111	281	50	37
Ark.	181	31	5	-	7,806	7,598	518	80	11	26	9	-
La.	633	86	10	-	11,661	13,781	186	302	5	7	14	1
Okla.	170	79	3	6	5,496	5,738	530	152	26	24	17	-
Tex.	2,849	590	55	2	39,576	38,234	1,925	1,431	69	224	10	36
MOUNTAIN	1,000	372	23	2	12,037	13,369	4,142	1,309	200	120	46	3
Mont.	15	6	-	-	198	172	160	63	7	4	5	-
Idaho	24	9	-	-	127	158	84	77	8	-	3	-
Wyo.	2	8	1	-	131	97	58	15	5	1	2	-
Colo.	309	98	5	-	3,227	2,962	308	174	45	44	9	-
N. Mex.	103	20	1	-	1,102	1,207	881	178	14	10	4	-
Ariz.	275	161	9	-	4,668	5,421	1,825	438	68	44	12	2
Utah	96	27	3	-	346	412	535	92	27	7	4	-
Nev.	176	43	4	2	2,238	2,940	291	272	26	10	7	1
PACIFIC	7,707	1,548	124	22	56,996	76,242	7,673	3,624	700	608	61	101
Wash.	575	-	6	2	4,630	5,981	1,238	547	120	33	13	9
Oreg.	293	-	-	-	2,281	2,853	754	374	53	9	-	-
Calif.	6,675	1,345	110	19	48,690	66,063	5,423	2,574	510	554	46	74
Alaska	24	107	7	-	959	869	186	55	7	5	-	-
Hawaii	140	96	1	1	436	476	72	74	10	7	2	18
Guam	2	2	-	-	210	152	12	4	-	11	-	1
P.R.	1,529	66	7	-	653	972	155	548	13	26	-	6
V.I.	11	-	-	-	406	653	1	12	-	-	-	-
Amer. Samoa	-	1	-	31	63	54	34	-	-	-	-	10
C.N.M.I.	-	-	-	-	161	88	10	9	-	15	-	4

N: Not notifiable U: Unavailable C.N.M.I.: Commonwealth of the Northern Mariana Islands

TABLE II. (Cont'd.) Cases of specified notifiable diseases, United States, weeks ending November 24, 1990, and November 25, 1989 (47th Week)

Reporting Area	Malaria	Measles (Rubeola)					Menin-gococcal Infections	Mumps		Pertussis			Rubella		
		Indigenous		Imported*		Total									
	Cum. 1990	1990	Cum. 1990	1990	Cum. 1990	Cum. 1989	Cum. 1990	1990	Cum. 1990	1990	Cum. 1990	Cum. 1989	1990	Cum. 1990	Cum. 1989
UNITED STATES	1,077	77	24,190	1	1,078	15,003	2,148	82	4,645	39	3,780	3,486	27	1,083	351
NEW ENGLAND	88	-	265	-	27	379	168	-	42	4	388	368	-	8	6
Maine	2	-	28	-	2	1	14	-	-	-	20	25	-	1	-
N.H.	4	-	-	-	9	15	13	-	11	1	61	16	-	1	4
Vt.	7	-	-	-	1	3	13	-	2	-	7	6	-	-	1
Mass.	48	-	23	-	7	103	76	-	12	2	268	292	-	2	1
R.I.	8	-	27	-	3	41	13	-	5	-	7	11	-	1	-
Conn.	19	-	187	-	5	216	39	-	12	1	25	18	-	3	-
MID. ATLANTIC	225	30	1,362	-	157	995	334	6	327	4	524	289	-	11	36
Upstate N.Y.	45	-	204	-	112	154	124	-	129	1	314	123	-	10	14
N.Y. City	80	30	467	-	21	121	46	-	-	-	-	13	-	-	15
N.J.	74	-	311	-	15	455	66	-	89	-	31	35	-	-	7
Pa.	26	-	380	-	9	265	98	6	109	3	179	118	-	1	-
E.N. CENTRAL	72	-	3,368	-	143	5,361	282	6	493	8	889	522	-	162	29
Ohio	9	-	551	-	3	1,551	86	-	91	4	232	68	-	131	3
Ind.	3	-	417	-	1	112	29	-	21	4	140	46	-	-	-
Ill.	34	-	1,309	-	10	2,893	77	-	171	-	300	170	-	19	22
Mich.	17	-	348	-	125	334	67	6	161	-	81	44	-	9	1
Wis.	9	-	743	-	4	471	23	-	49	-	136	194	-	3	3
W.N. CENTRAL	21	-	902	-	17	757	71	2	156	-	210	223	-	53	6
Minn.	6	-	424	-	6	24	14	-	15	-	51	60	-	42	-
Iowa	2	-	25	-	1	13	1	-	23	-	18	15	-	4	1
Mo.	11	-	99	-	1	467	32	-	57	-	106	129	-	-	4
N. Dak.	-	-	-	-	-	-	1	-	-	-	2	4	-	1	-
S. Dak.	-	-	15	-	8	-	2	-	-	-	1	3	-	-	-
Nebr.	-	-	105	-	1	113	5	-	8	-	7	8	-	1	-
Kans.	2	-	234	-	-	140	16	2	53	-	25	4	-	5	1
S. ATLANTIC	213	3	935	-	375	721	393	24	1,888	5	310	350	-	21	10
Del.	6	-	8	-	3	40	4	-	6	-	9	1	-	-	-
Md.	57	1	195	-	18	102	46	11	1,066	-	62	74	-	2	2
D.C.	10	-	16	-	7	42	11	2	38	-	15	3	-	1	-
Va.	51	-	84	-	2	22	52	-	103	-	24	34	-	1	-
W. Va.	2	-	6	-	-	53	16	-	44	-	29	33	-	-	-
N.C.	17	2	22	-	15	190	67	3	304	2	77	72	-	1	1
S.C.	3	-	4	-	-	15	26	-	63	-	5	-	-	-	-
Ga.	16	-	99	-	259	18	63	4	93	3	41	50	-	1	-
Fla.	51	-	501	-	71	239	108	4	171	-	48	83	-	15	7
E.S. CENTRAL	22	-	194	-	4	239	129	3	106	4	159	203	-	4	5
Ky.	2	-	41	-	1	44	37	-	-	-	-	1	-	1	-
Tenn.	11	-	104	-	-	145	56	3	60	4	83	116	-	3	4
Ala.	9	-	23	-	2	50	32	-	19	-	68	75	-	-	1
Miss.	-	-	26	-	1	-	4	-	27	-	8	11	-	-	-
W.S. CENTRAL	63	-	4,201	-	95	3,311	151	26	691	-	187	366	25	91	50
Ark.	4	-	18	-	31	22	18	-	139	-	22	30	-	3	-
La.	7	-	10	-	-	109	33	-	113	-	32	26	-	-	5
Okla.	9	-	174	-	-	110	16	-	102	-	53	60	-	1	1
Tex.	43	-	3,999	-	64	3,070	84	26	337	-	80	250	25	87	44
MOUNTAIN	24	-	865	-	100	417	72	5	335	1	300	656	-	110	37
Mont.	1	-	-	-	1	13	11	-	1	-	35	39	-	15	1
Idaho	5	-	16	-	10	7	6	-	143	-	46	74	-	49	32
Wyo.	1	U	-	U	15	-	-	U	2	U	-	-	U	-	2
Colo.	3	-	91	-	47	98	23	-	25	1	112	100	-	4	1
N. Mex.	4	-	81	-	12	31	12	N	N	-	18	33	-	-	-
Ariz.	9	-	300	-	12	145	6	5	135	-	54	388	-	32	-
Utah	-	-	146	-	-	114	7	-	10	-	31	21	-	2	-
Nev.	1	-	231	-	3	9	7	-	19	-	4	1	-	8	1
PACIFIC	349	44	12,098	1	160	2,823	548	10	607	13	813	509	2	623	172
Wash.	29	-	202	-	69	54	70	2	57	9	216	184	-	-	-
Oreg.	18	-	169	-	44	66	65	N	N	1	107	18	1	75	4
Calif.	296	44	11615	1†	41	2,673	397	8	521	3	389	281	1	532	146
Alaska	2	-	78	-	2	1	11	-	4	-	7	1	-	-	-
Hawaii	4	-	34	-	4	32	5	-	25	-	94	25	-	16	22
Guam	3	U	-	U	1	4	2	U	5	U	1	1	U	-	-
P.R.	3	-	1,665	-	-	562	13	-	8	2	18	4	-	-	8
V.I.	-	U	21	U	3	4	-	U	13	U	-	-	U	-	-
Amer. Samoa	35	U	501	U	-	-	-	U	37	U	-	-	U	-	-
C.N.M.I.	-	U	31	U	-	-	-	U	8	U	4	-	U	-	-

*For measles only, imported cases includes both out-of-state and international importations.

N: Not notifiable U: Unavailable †International §Out-of-state

TABLE II. (Cont'd.) Cases of specified notifiable diseases, United States, weeks ending November 24, 1990, and November 25, 1989 (47th Week)

Reporting Area	Syphilis (Civilian) (Primary & Secondary)		Toxic-shock Syndrome	Tuberculosis		Tula-remia	Typhoid Fever	Typhus Fever (Tick-borne) (RMSF)	Rabies, Animal
	Cum. 1990	Cum. 1989	Cum. 1990	Cum. 1990	Cum. 1989	Cum. 1990	Cum. 1990	Cum. 1990	Cum. 1990
UNITED STATES	43,862	39,850	270	20,792	19,205	130	460	629	3,908
NEW ENGLAND	1,515	1,534	24	536	590	4	32	20	6
Maine	7	13	7	18	25	1	-	-	-
N.H.	49	13	1	3	24	-	-	1	3
Vt.	2	1	1	8	8	-	-	-	-
Mass.	616	456	13	294	330	3	30	17	-
R.I.	23	29	1	63	61	-	-	-	-
Conn.	818	1,022	1	150	142	-	2	2	3
MID. ATLANTIC	8,507	8,216	31	4,975	3,991	2	98	30	977
Upstate N.Y.	815	884	11	342	326	1	18	15	190
N.Y. City	3,774	3,930	5	3,121	2,263	-	54	2	-
N.J.	1,343	1,275	-	838	785	1	22	8	341
Pa.	2,575	2,127	15	674	617	-	4	5	446
E.N. CENTRAL	3,163	1,709	65	2,024	1,931	5	31	45	165
Ohio	482	152	21	364	333	1	6	34	11
Ind.	95	54	1	209	188	1	2	2	16
Ill.	1,336	764	14	985	904	3	14	2	29
Mich.	932	585	29	390	389	-	8	7	51
Wis.	318	154	-	76	117	-	1	-	58
W.N. CENTRAL	463	292	31	542	497	42	5	53	597
Minn.	83	51	5	105	97	-	-	-	222
Iowa	69	32	8	58	46	-	1	2	19
Mo.	252	152	8	271	236	32	3	35	28
N. Dak.	1	4	1	18	15	-	-	-	88
S. Dak.	2	1	-	13	26	4	-	2	191
Nebr.	14	24	3	16	21	3	-	1	4
Kans.	42	28	6	61	56	3	1	13	45
S. ATLANTIC	13,904	14,067	16	3,846	4,044	5	74	278	1,070
Del.	172	196	1	34	38	-	-	1	29
Md.	1,084	766	1	315	347	-	32	19	415
D.C.	1,023	746	1	143	149	-	-	2	-
Va.	838	548	3	349	333	2	8	24	186
W. Va.	18	15	-	69	70	-	1	1	37
N.C.	1,581	1,028	4	526	548	2	4	169	8
S.C.	951	761	2	421	461	1	1	41	123
Ga.	3,519	3,480	1	651	658	-	4	18	192
Fla.	4,718	6,527	3	1,338	1,440	-	24	3	80
E.S. CENTRAL	4,177	2,859	14	1,494	1,541	8	4	79	167
Ky.	99	53	3	338	356	2	1	11	47
Tenn.	1,769	1,305	8	437	496	6	1	58	27
Ala.	1,271	841	3	435	416	-	2	10	90
Miss.	1,038	660	-	284	273	-	-	-	3
W.S. CENTRAL	7,616	5,678	12	2,462	2,294	41	20	100	419
Ark.	553	347	-	299	264	31	-	21	34
La.	2,370	1,431	1	251	292	-	1	3	31
Okla.	242	108	8	187	194	9	3	70	123
Tex.	4,451	3,792	3	1,725	1,544	1	16	6	231
MOUNTAIN	775	628	29	481	467	19	20	12	209
Mont.	-	1	-	22	16	-	-	4	45
Idaho	6	1	2	12	25	-	-	1	7
Wyo.	2	6	2	5	-	6	-	1	49
Colo.	46	61	7	27	41	6	-	1	23
N. Mex.	40	26	3	94	84	4	-	1	12
Ariz.	552	320	9	227	225	-	18	1	38
Utah	20	16	5	38	37	3	-	3	16
Nev.	109	197	1	56	39	-	2	-	19
PACIFIC	3,742	4,867	48	4,432	3,850	4	176	12	298
Wash.	312	431	4	242	215	2	23	2	-
Oreg.	125	211	2	118	129	-	4	1	1
Calif.	3,279	4,202	41	3,846	3,290	-	139	4	275
Alaska	16	8	-	53	53	2	-	-	22
Hawaii	10	15	1	173	163	-	10	5	-
Guam	2	4	-	40	80	-	-	-	-
P.R.	296	492	-	102	276	-	2	-	40
V.I.	12	8	-	4	4	-	-	-	-
Amer. Samoa	-	-	-	12	7	-	1	-	-
C.N.M.I.	4	14	-	44	27	-	4	-	-

U: Unavailable

TABLE III. Deaths in 121 U.S. cities,* week ending November 24, 1990 (47th Week)

Reporting Area	All Causes, By Age (Years)						P&I**
	All Ages	≥65	45-64	25-44	1-24	<1	Total
NEW ENGLAND	606	403	109	51	22	21	51
Boston, Mass.	172	92	42	25	9	4	22
Bridgeport, Conn.	32	23	8	-	-	1	4
Cambridge, Mass.	26	22	3	-	1	-	1
Fall River, Mass.	21	14	6	1	-	-	-
Hartford, Conn.	59	36	9	9	3	2	4
Lowell, Mass.	20	15	5	-	-	-	-
Lynn, Mass.	16	14	2	-	-	-	-
New Bedford, Mass.	29	25	3	-	1	-	1
New Haven, Conn.	49	26	5	4	3	11	3
Providence, R.I.§	39	29	8	2	-	-	2
Somerville, Mass.	9	8	1	-	-	-	-
Springfield, Mass.	48	34	6	4	3	1	8
Waterbury, Conn.	27	22	2	2	1	-	2
Worcester, Mass.	59	43	9	4	1	2	4
MID. ATLANTIC	2,467	1,601	475	276	63	51	139
Albany, N.Y.	44	31	9	4	-	-	5
Allentown, Pa.	20	14	3	2	1	-	1
Buffalo, N.Y.	102	70	21	7	1	3	4
Camden, N.J.	38	31	-	5	-	2	-
Elizabeth, N.J.	33	25	5	3	-	-	3
Erie, Pa.†	50	38	11	-	1	-	4
Jersey City, N.J.	45	32	7	5	1	-	2
N.Y. City, N.Y.§	1,335	835	261	177	37	25	50
Newark, N.J.	78	31	16	19	7	5	6
Paterson, N.J.	28	19	2	4	1	2	2
Philadelphia, Pa.	297	196	64	22	8	7	21
Pittsburgh, Pa.†	61	50	6	3	-	2	4
Reading, Pa.	40	26	7	6	1	-	11
Rochester, N.Y.	85	60	18	4	1	2	10
Schenectady, N.Y.	24	17	6	-	-	-	2
Scranton, Pa.†	19	15	4	-	-	-	-
Syracuse, N.Y.	101	71	19	6	3	2	10
Trenton, N.J.	25	14	4	6	1	-	3
Utica, N.Y.	20	12	6	2	-	-	1
Yonkers, N.Y.	22	14	6	1	-	1	-
E.N. CENTRAL	2,078	1,435	372	156	46	69	102
Akron, Ohio	31	19	3	4	2	3	-
Canton, Ohio	29	24	5	-	-	-	6
Chicago, Ill.§	564	362	125	45	10	22	16
Cincinnati, Ohio	88	65	13	5	1	4	7
Cleveland, Ohio	140	100	24	8	5	3	13
Columbus, Ohio	154	111	27	9	2	5	2
Dayton, Ohio	93	60	19	7	4	3	3
Detroit, Mich.	167	98	30	19	8	12	5
Evansville, Ind.§	42	33	7	2	-	-	1
Fort Wayne, Ind.	26	21	5	-	-	-	4
Gary, Ind.§	17	9	5	2	1	-	1
Grand Rapids, Mich.	73	56	12	2	2	1	9
Indianapolis, Ind.	219	145	47	16	4	7	11
Madison, Wis.§	37	28	5	3	-	1	1
Milwaukee, Wis.	110	91	8	9	2	-	7
Peoria, Ill.	39	31	7	1	-	-	4
Rockford, Ill.	33	27	5	-	-	1	2
South Bend, Ind.	38	32	4	1	1	-	2
Toledo, Ohio	131	91	19	13	2	6	7
Youngstown, Ohio	47	32	2	10	2	1	1
W.N. CENTRAL	652	457	110	55	14	16	34
Des Moines, Iowa	59	45	9	3	1	1	5
Duluth, Minn.	18	14	1	3	-	-	1
Kansas City, Kans.	19	13	6	-	-	-	2
Kansas City, Mo.§	108	77	20	8	2	1	5
Lincoln, Nebr.	32	23	4	4	-	1	3
Minneapolis, Minn.	170	107	30	21	6	6	9
Omaha, Nebr.	65	42	16	3	1	3	3
St. Louis, Mo.	118	85	16	12	3	2	-
St. Paul, Minn.	37	30	3	1	1	2	5
Wichita, Kans.	26	21	5	-	-	-	1

Reporting Area	All Causes, By Age (Years)						P&I**
	All Ages	≥65	45-64	25-44	1-24	< 1	Total
S. ATLANTIC	1,195	747	239	141	39	29	49
Atlanta, Ga.	77	44	18	12	1	2	1
Baltimore, Md.	342	214	71	36	10	11	17
Charlotte, N.C.	83	52	21	6	3	1	5
Jacksonville, Fla.	67	46	6	12	2	1	3
Miami, Fla.	74	36	19	13	5	1	-
Norfolk, Va.	36	22	6	4	4	-	1
Richmond, Va.	23	14	8	-	1	-	-
Savannah, Ga.	44	32	6	4	-	2	1
St. Petersburg, Fla.	62	50	5	5	1	1	3
Tampa, Fla.	125	79	21	16	4	5	11
Washington, D.C.§	232	136	50	33	8	5	7
Wilmington, Del.	30	22	8	-	-	-	-
E.S. CENTRAL	673	437	149	47	20	20	34
Birmingham, Ala.	90	49	25	13	1	2	2
Chattanooga, Tenn.	74	50	16	6	2	-	7
Knoxville, Tenn.	84	55	20	3	3	3	4
Louisville, Ky.	76	55	11	2	2	6	1
Memphis, Tenn.§	181	118	38	13	7	5	11
Mobile, Ala.	66	42	13	6	3	2	2
Montgomery, Ala.	34	19	12	1	1	1	4
Nashville, Tenn.	68	49	14	3	1	1	3
W.S. CENTRAL	969	588	211	107	30	33	66
Austin, Tex.	46	32	8	3	1	2	3
Baton Rouge, La.	33	27	3	-	2	1	-
Corpus Christi, Tex.	24	15	5	3	-	1	-
Dallas, Tex.	144	76	36	24	5	3	2
El Paso, Tex.	41	19	11	7	1	3	3
Fort Worth, Tex	79	56	15	5	1	2	7
Houston Tex	205	106	49	33	9	8	27
Little Rock, Ark.	42	22	13	2	-	5	4
New Orleans, La.	99	63	19	10	6	1	-
San Antonio, Tex.	154	102	31	12	4	5	8
Shreveport, La.	41	31	5	3	-	2	2
Tulsa, Okla.	61	39	16	5	1	-	10
MOUNTAIN	557	362	119	39	19	18	37
Albuquerque, N. Mex.	74	46	16	3	5	4	6
Colo. Springs, Colo.	39	27	8	3	-	1	3
Denver, Colo.	42	25	12	2	1	2	3
Las Vegas, Nev.	95	59	32	4	-	-	1
Ogden, Utah	12	9	3	-	-	-	2
Phoenix, Ariz.	127	74	25	16	7	5	7
Pueblo, Colo.	23	20	3	-	-	-	2
Salt Lake City, Utah	37	21	6	3	3	4	2
Tucson, Ariz.	108	81	14	8	3	2	11
PACIFIC	1,466	1,009	234	143	33	42	102
Berkeley, Calif.	16	10	1	5	-	-	2
Fresno, Calif.	72	43	10	12	2	5	4
Glendale, Calif.	9	8	1	-	-	-	-
Honolulu, Hawaii	80	65	8	1	2	4	10
Long Beach, Calif.	73	46	13	11	1	2	11
Los Angeles Calif.	280	199	49	16	9	3	13
Oakland, Calif.	92	61	13	10	6	2	8
Pasadena, Calif.	22	14	1	5	-	2	-
Portland, Oreg.	146	104	25	13	2	2	8
Sacramento, Calif.	109	76	22	9	1	1	7
San Diego, Calif.	107	78	12	11	4	1	14
San Francisco, Calif.	115	70	25	15	1	4	5
San Jose, Calif.	164	117	26	12	2	7	12
Seattle, Wash.	89	55	10	16	1	7	4
Spokane, Wash.	40	30	5	3	-	2	3
Tacoma, Wash.	52	33	13	4	2	-	1
TOTAL	10,663††	7,039	2,018	1,015	286	299	614

*Mortality data in this table are voluntarily reported from 121 cities in the United States, most of which have populations of 100,000 or more. A death is reported by the place of its occurrence and by the week that the death certificate was filed. Fetal deaths are not included.

**Pneumonia and influenza.

†Because of changes in reporting methods in these 3 Pennsylvania cities, these numbers are partial counts for the current week. Complete counts will be available in 4 to 6 weeks.

††Total includes unknown ages.

§Data not available. Figures are estimates based on average of past available 4 weeks.

HIV Infection — Continued

sex and age; nine, race/ethnicity; and six, the mode of transmission. None require reports on clinical status or CD4+ T-cell count. Because reporting is anonymous, duplicate test reports cannot be excluded with certainty.

The CDC surveys did not collect detailed information on the variety of reporting practices among states that do not have legal requirements for the reporting of asymptomatic persons identified with HIV infection by public or private sector health-care providers. However, among the 17 remaining states and the District of Columbia, reports of HIV infections may be required only in selected cases (e.g., in some criminal cases or for incarcerated persons). Two states (Maryland and Washington) require reporting by name of symptomatic HIV-infected persons only. Several states are considering either implementing or changing existing HIV-reporting rules or regulations. Some states receive reports provided on a voluntary basis by state public health laboratories and/or health-care providers.

TABLE 1. Status of HIV-infection reporting — United States, October 1, 1990

HIV reporting required		
Name*	**Anonymous†**	**HIV reporting not required§**
Alabama	Georgia	Alaska
Arizona	Illinois	California
Arkansas	Iowa	Connecticut
Colorado	Kansas	Delaware
Idaho	Kentucky	District of Columbia
Indiana	Maine	Florida
Michigan¶	Montana	Hawaii
Minnesota	Nevada	Louisiana
Mississippi	New Jersey**	Maryland††
Missouri	Oregon	Massachusetts
North Carolina	Rhode Island	Nebraska
North Dakota	Texas	New Hampshire
Ohio		New Mexico
Oklahoma		New York
South Carolina		Pennsylvania
South Dakota		Tennessee
Utah		Vermont
Virginia		Washington††
West Virginia		
Wisconsin		
Wyoming		

*Names of HIV-infected persons are provided to local or state health departments.
†Individual reports of persons with HIV infection are provided to local or state health departments. Reports may contain demographic and transmission category information but do not record identifiers.
§Some states receive HIV reports on a voluntary basis.
¶Names are reported to the local health department only.
**New Jersey has passed but not implemented legislation requiring HIV reporting by name; current reporting regulations allow the implementation of anonymous HIV reporting only.
††Requires HIV reports with names for symptomatic HIV-infected persons only.

HIV Infection — Continued

Reported by: State health departments. Div of HIV/AIDS, Center for Infectious Diseases, CDC.

Editorial Note: In May 1989, the Council of State and Territorial Epidemiologists (CSTE) recommended that CDC provide technical assistance to states with required HIV-infection reporting to implement a standardized surveillance system for the reporting of HIV-infected persons. CSTE also recommended that states that require HIV reporting should provide data on HIV-infected persons (but without personal identifiers) to CDC. The recommended elements for a standardized HIV-reporting system include age, sex, race/ethnicity; transmission category; state of residence; laboratory test results and clinical status; and an identifier that can be used to exclude duplicate reports (*2*). A standardized HIV-infection reporting system that is similar to that used for national AIDS surveillance has been developed.

Twenty of the states that require reporting by name submit to CDC reports of HIV-infected persons who do not meet the CDC AIDS case definition; these reports to CDC do not contain names and other personal identifying information. All 50 states and the District of Columbia will continue to report persons who meet the AIDS case definition.

The standardized HIV report form includes the recommended elements as well as information on source of test report, referrals for medical treatment, and partner notification. Persons to be included are those determined to be infected with HIV based on the criteria defined jointly by CDC and the Association of State and Territorial Public Health Laboratory Directors for the interpretation and use of Western blot assays for HIV serodiagnosis (*3*).

At the local and state levels, reports of HIV-infected persons may be used to implement and evaluate the impact of partner notification for preventing transmission, to contact and counsel HIV-positive persons who have not returned for test results, and to provide access to medical follow-up including CD4 cell testing and therapy. The roles of private-sector providers and others in HIV-prevention activities can be monitored in states with HIV reporting with identifiers that also collect information on source of HIV report. In some states, CD4 cell testing is conducted in conjunction with HIV reporting. For example, in South Carolina, HIV-positive persons are routinely provided CD4 cell testing; HIV reporting may be used to monitor access to and use of treatment regimens. HIV reporting also may assist in monitoring trends in the HIV/AIDS epidemic by detecting at-risk segments of the population (e.g., adolescents) before the onset of AIDS (*4*). In some settings, HIV testing and reporting may provide an early indication of the spread of HIV among persons without recognized high-risk behaviors (*5*).

The implementation of HIV reporting has raised such concerns as whether HIV-infected persons may be less willing to be tested (*6*). Therefore, assessment of the public health usefulness of HIV reporting will require careful evaluation of the completeness of testing and reporting, the representativeness of infected persons who are reported, and the impact of HIV reporting on prevention goals, patient management, and AIDS case surveillance. CDC is initiating such evaluations in collaboration with five state health departments (Alabama, Arizona, Colorado, Mississippi, and Missouri). Reports of persons with HIV infection cannot be considered to accurately measure the prevalence of HIV nor represent the population of HIV-infected persons. Therefore, AIDS case surveillance data and blinded HIV-seroprevalence surveys will continue to be the primary means for HIV/AIDS surveillance (*7*).

HIV Infection — Continued

Despite limitations in HIV reporting, assessment of the public health impact of the HIV/AIDS epidemic should be enhanced by surveillance of the entire spectrum of HIV-related disease through seroprevalence studies, HIV-infection reporting, and AIDS case surveillance. Moreover, by using measures to maintain confidentiality, the implementation of a standardized system for HIV reporting to state health departments can enhance the ability of local, state, and national agencies to project the levels of required resources. Public health surveillance for HIV infection is assisting in the establishment of a framework for providing partner notification and treatment services in some states.

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Epidemiologic Notes and Reports

Multistate Outbreak of Poisonings Associated with Illicit Use of Gamma Hydroxy Butyrate

On August 7, 1990, the San Francisco Bay Area Regional Poison Control Center notified the regional office of the Food and Drug Administration (FDA) and the California Department of Health Services of acute poisonings attributed to ingestion of gamma hydroxy butyrate (GHB), which recently has been illicitly marketed nationwide. Manifestations included gastrointestinal symptoms, central nervous system (CNS) and respiratory depression, and uncontrolled movements. Subsequent surveillance, based on contacts among poison-control centers, led to the recognition that similar poisonings had been independently identified in several states. This report summarizes findings from the preliminary investigation of this problem.

From June 4 through November 28, 1990, at least 57 cases of illness attributed to GHB exposure have been reported from California (25 cases, 17 from the San Francisco area); Georgia (15, all from the greater Atlanta area); Florida (seven, six from the greater Tampa area); South Carolina (three); Minnesota (two); Arizona (two); and Ohio, Texas, and Virginia (one each). Patients have presented with histories of ingesting ½–3 teaspoons of GHB dissolved in water; ingestion is followed within 15–60 minutes by onset of one or more of the following: vomiting, drowsiness,

GHB Poisonings — Continued

hypnagogic state, hypotonia, and/or vertigo. Loss of consciousness, irregular and depressed respiration, tremors, or myoclonus may follow. Seizure-like activity, bradycardia, hypotension, and/or respiratory arrest have also been reported. Spontaneous resolution occurs in 2–96 hours. The severity and duration of symptoms appear to depend on the dose of GHB and/or the presence of other CNS depressants, most frequently ethanol. In 11 of 12 Georgia patients, four of five Florida patients, and three of four California patients for whom concurrent drug status was known, other psychoactive drugs—including ethanol, benzodiazepines, cannabis, and amphetamines—also had been used.

Although no deaths have been reported, most patients have required emergency room care; at least 11 were hospitalized, and nine required ventilator support or other intensive care. Therapeutic efforts consisted of nonspecific supportive care.

On November 8, FDA issued an advisory warning that GHB use outside of FDA-approved physician-supervised protocols was unsafe and illicit and should stop (*1*). Persons who have used GHB and have symptoms should consult a physician. Ill persons, physicians, and emergency room staff are encouraged to report suspected cases of GHB-related illness to their regional poison-control centers and state health departments. FDA's investigation into the source(s) of this illicit distribution is ongoing. Sale of GHB was banned by California on November 8 and by Florida on November 9.

Reported by: JE Dyer, PharmD, San Francisco Bay Area Regional Poison Control Center; R Kreutzer, MD, A Quattrone, PhD, KW Kizer, MD, California Dept of Health Svcs. RJ Geller, MD, Georgia Poison Control Center; JD Smith, Georgia Dept of Human Resources. SA Normann, PharmD, Florida Poison Information Center; AJ Hill, RA Calder, MD, State Epidemiologist, Florida Dept of Health and Rehabilitative Svcs. T Litovitz, MD, American Association of Poison Control Centers. Food and Drug Administration. Div of Environmental Hazards and Health Effects, Center for Environmental Health and Injury Control, CDC.

Editorial Note: In the United States, the only legal use of GHB ($HOOC\text{-}CH_2\text{-}CH_2\text{-}CH_2OH$) has been under specific FDA exemptions for investigational research protocols (e.g., treatment of narcolepsy). In Europe, GHB has also been used as an anesthetic adjunct and experimentally to treat posthypoxic cerebral edema and ethanol withdrawal. During controlled clinical use, the same dose of GHB sometimes caused different responses in different patients and different responses in the same person at different times (M. Mamelak, personal communication, 1990).

GHB has been illegally marketed under a variety of names, including Gamma Hydroxybutyric Acid, Sodium Oxybate, Sodium Oxybutyrate, Gamma Hydroxybutyrate Sodium, Gamma-OH, 4-Hydroxy Butyrate, Gamma Hydrate, and Somatomax PM. It is distributed as the sodium salt in powder or tablet form and is commonly dissolved in water.

GHB has been marketed illicitly to body builders since at least May 1990; it also has been promoted illicitly for weight control and as a sleep aid. In addition, GHB has been illicitly touted as a "replacement" for L-tryptophan, which had been marketed as a food supplement but was recalled in November 1989 when the epidemic of eosinophilia-myalgia syndrome was recognized (*2*).

GHB allegedly produces a "high," which has led to its further use as an illicit drug. Although the concurrent use of other drugs with similar toxicities may confuse the clinical, toxicologic, and epidemiologic presentation of this problem, the reported symptoms of GHB toxicity are the same as the known pharmacologic effects of the drug. A causal association between use of GHB and these poisonings is also supported by the rapid onset of symptoms after ingestion of GHB, more severe and

GHB Poisonings — Continued

prolonged symptoms associated with larger doses of GHB, and occurrence of illness in persons who have not used other drugs.

GHB is produced by the body as a normal metabolite and is not a nutritional requirement. In the brain, GHB increases dopamine levels, has effects through the endogenous opioid system, and probably has effects through other independent receptor-dependent mechanisms. GHB is present in many peripheral sites, including the kidney, heart, skeletal muscle, and brown fat. GHB is well absorbed orally, readily crosses the blood-brain barrier, and is subsequently metabolized to carbon dioxide and water without active metabolites (*3,4*). Effects include amnesia and hypotonia from doses as low as 10 mg/kg, a normal sequence of REM and non-REM sleep from 20–30 mg/kg doses (1–3 g per dose were used in U.S. narcolepsy studies [*5*]), and anesthesia from doses of approximately 50 mg/kg. In doses >50 mg/kg, GHB decreases cardiac output and subsequently produces increasingly severe respiratory depression, seizure-like activity, and/or coma (*4,5*). Other effects suggest that, during hypoxia and other energy-limiting conditions, GHB may play a role in reducing energy-substrate demand and consumption and in preventing the production of free radicals (*4*).

GHB acts synergistically with ethanol to produce CNS and respiratory depression; ethanol also increases the endogenous levels of GHB (*4*). GHB may potentiate the effects of narcotic analgesics and skeletal muscle relaxants and may be potentiated by the actions of benzodiazepines and neuroleptics (*5*). Although antagonism may occur with d-amphetamine, naloxone, haloperidol, and drugs used for absence seizures (*4*), these experimental antagonists have not been assessed as possible treatments for GHB overdose. Anecdotally, naloxone has not been effective in treating a limited number of GHB-related poisonings.

The focus of public education efforts should be that products such as GHB that are promoted for physiologic effects act on the body as drugs. In this context, advertising terms such as "natural," "organic," or "supplement" do not imply safety or legality.

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Workplace Exposures to Corrosion-Inhibiting Chemicals from a Steam Humidification System — Ohio, 1988

On December 5, 1988, at 11:45 a.m., boiler steam was released to humidify an electrical components manufacturing plant in Ohio. At noon, employees returning from lunch noticed an odor described as musty, pungent, "ammonia-like," or "radiator-like," and the work area was evacuated. During the next several hours, 77 (64%) of the 121 employees working in the plant became ill; symptoms included rapid

Chemical Exposure — Continued

onset of headache; nausea; vomiting; dizziness; and eye, nose, and throat irritation. Forty employees were evaluated by the company nurse; 11 of these received further examination at local hospitals but were subsequently released. The steam humidification was turned off in most work areas by 1:15 p.m.

On December 8, boiler steam was reintroduced into the work area, producing the same odor and resulting in evacuation of affected areas; no illnesses were reported. Company management and the local union jointly requested an investigation of the problem by CDC's National Institute for Occupational Safety and Health (NIOSH). Investigators determined that during the third week of September, two corrosion-inhibiting chemicals, diethylaminoethanol (DEAE) and cyclohexylamine (CHA), had been added to the boiler water at four times normal strength, as recommended by the supplier; the boiler was left idle, and the concentration of DEAE and CHA was not diluted before the boiler was used on December 5.

Persons working in the humidified area on December 5 were at increased risk for becoming ill (illness defined as the presence of at least two of the above symptoms), compared with employees in other areas of the plant that were not humidified by steam (relative risk: 4.3; 95% confidence interval = 2.1–9.1). On December 9, after workers had left for the day, steam was released into the work area, and samples of air and boiler water were collected for analysis (*1*). DEAE and CHA were not detected in either air or water.

Reported by: Hazard Evaluations and Technical Assistance Br, Div of Surveillance, Hazard Evaluations, and Field Studies, National Institute for Occupational Safety and Health, CDC.

Editorial Note: When present in boiler water, DEAE and CHA can become airborne in boiler steam, which can result in inhalational and/or dermal uptake by exposed persons. Higher acute exposures through this mechanism are more likely if these chemicals are added to a steam-generating system in a single large quantity rather than continuously in small amounts.

Most boilers require daily addition of fresh water to compensate for losses from escaping steam and drained condensate. Although the amount of water added to this boiler between the outbreak and the time when samples were obtained is not known, dilution of the treated boiler water during the intervening 4 days may account for the failure to detect DEAE or CHA.

DEAE and CHA are both strong mucosal irritants. In one report, a laboratory worker who was inadvertently exposed for <30 seconds to DEAE at an estimated concentration of 100 ppm (480 mg/m^3) developed nausea and vomiting within 5 minutes (*2*). No data are available on human health risks associated with long-term, low-level airborne exposure to these amines.* The Occupational Safety and Health Administration (OSHA) permissible exposure limits (PELs) for DEAE and CHA are, respectively, 50 mg/m^3 (10 ppm) and 40 mg/m^3 (10 ppm) (*4*) and are established at levels intended to prevent mucosal irritation symptoms. NIOSH has no recommended exposure limit for either substance.

NIOSH has previously investigated three clusters of illnesses related to exposure to boiler steam that contained DEAE or related corrosion-inhibiting chemicals. In 1981, 24 employees in the office area of a production building developed skin rashes;

*Under certain conditions, it is theoretically possible that DEAE (or related compounds) in boiler water may be converted to nitrosamines, which are suspected human carcinogens. No experimental evidence exists to indicate whether this occurs, particularly in boiler systems of the type discussed here (*3*).

Chemical Exposure — Continued

many of the employees also reported dry throats, headaches, and chest tightness (*5*). Investigators concluded that the dermatitis resulted from exposure to a condensation or reaction product of DEAE that had been added to the air-handling system. In 1982, employees in a museum where DEAE had been added to a humidification system reported eye irritation and dermatitis (*6*). Air sampling detected DEAE concentrations of only 0.05 mg/m^3 and 0.04 mg/m^3, and direct contact with released DEAE that had subsequently condensed on surfaces was proposed as an exposure pathway (*6*). In 1988, hospital staff nurses reported symptoms of eye and upper respiratory tract irritation after the introduction of CHA and morpholine (a similar nitrogen-containing corrosion inhibitor) into boiler water used to humidify a nursery and neonatal intensive care unit (NIOSH, unpublished data).

The OSHA PELs for DEAE and CHA were promulgated for the protection of industrial workers and are not intended to protect members of the general public, which may include children, the elderly, those in ill health, and others who may be particularly sensitive to the effects of these substances. As a result of the investigation in this report, NIOSH recommended that the electronics manufacturer discontinue use of amine-based corrosion-inhibiting chemicals in boiler steam that is intentionally released to humidify occupied buildings. At least one major supplier of corrosion-inhibiting chemicals has recognized this potential health hazard associated with DEAE and, in 1983, advised its customers against such use (Union Carbide Corporation, unpublished data, 1985).

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The data in this report are provisional, based on weekly reports to CDC by state health departments. The reporting week concludes at close of business on Friday; compiled data on a national basis are officially released to the pubiic on the succeeding Friday. Accounts of interesting cases, outbreaks, environmental hazards, or other public health problems of current interest to health officials, as well as matters pertaining to editorial or other textual considerations should be addressed to: Editor, *Morbidity and Mortality Weekly Report*, Mailstop C-08, Centers for Disease Control, Atlanta, Georgia 30333; telephone (404) 332-4555.

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