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# Possible Transmission of Human Immunodeficiency Virus to a Patient during an Invasive Dental Procedure

CDC received a case report of acquired immunodeficiency syndrome (AIDS) in a young woman for whom an epidemiologic investigation had not established a source for her human immunodeficiency virus (HIV) infection (i.e., documented behavioral or other risk factors, including intravenous [IV]-drug use, sex with an HIV-infected person, or receipt of a blood transfusion or blood components). However, investigation revealed that 24 months before her AIDS diagnosis she had two teeth extracted by a dentist who had AIDS. Information on the dental procedure was obtained from interviews with the patient and reviews of her dental records and radiographs. This report summarizes the epidemiologic and laboratory findings of the investigation.*

The patient had two maxillary third molars extracted under local anesthesia in the dentist's office. The dentist had been diagnosed with AIDS 3 months before performing the procedure. Written documentation of the procedure was limited. Review of the radiographs indicated that the maxillary third molars were not impacted in bone. The patient reported that she received no general anesthetic or sedative and that during the procedure the dentist wore gloves and a mask. She did not recall, nor did review of the dental records reveal, any circumstances that would have exposed her to the dentist's blood (i.e., an injury to the dentist, such as a needlestick or cut with a sharp instrument). The patient had not received dental care from this dentist before the dental extractions.

Four weeks after the dental procedure, the patient sought medical evaluation for a sore throat. Review of her medical records revealed that she was afebrile, with moderately enlarged tonsils with ulcerations and moderately enlarged nontender anterior cervical lymph nodes. Rash, generalized lymphadenopathy, or fatigue were not reported or noted on the medical record. A "strep antigen" test was negative. The patient was diagnosed with pharyngitis and aphthous ulcers. Seventeen months after the procedure, she was diagnosed with oral candidiasis; 24 months after the procedure, she was diagnosed with *Pneumocystis carinii* pneumonia and was seropositive for HIV antibody. The patient reported no previous test for HIV infection.

Multiple interviews of the patient and her family and friends by health department staff and review of her medical and previous dental records did not identify factors that may have potentially placed her at risk for HIV infection. The patient reported no history of blood transfusions, IV-drug use, acupuncture, tattoos, or artificial insemi-

*Single copies of this article will be available free until July 27, 1991, from the National AIDS Information Clearinghouse, P.O. Box 6003, Rockville, MD 20850; telephone (800) 458-5231.

*Human Immunodeficiency Virus — Continued*

nation. Additionally, she denied a history of sexually transmitted diseases or pregnancies. VDRL and hepatitis B serologies were negative. The patient has never been employed in a health-care or other setting where she could have been exposed to HIV-infected blood or other body fluids. She reported two boyfriends before her diagnosis of AIDS; both were tested for HIV infection and were seronegative.

Blood specimens were obtained from the patient and the dentist. To determine the relatedness of the HIV strains from both persons, DNA was extracted from their peripheral blood mononuclear cells (PBMC). HIV sequences encoding the variable regions (V3, V4, and V5) and a constant region (C3) of the major external glycoprotein gp120 were selectively amplified using the polymerase chain reaction (PCR) (*1*). Amplified HIV DNA was molecularly cloned, and nucleotide sequences of multiple clones were determined. The relatedness of the sequences was analyzed by several computer-based methods in collaboration with Los Alamos National Laboratory.[†] This multifaceted analysis showed a similarity between the sequences from the patient and the dentist that was comparable to what has been observed for cases that have been epidemiologically linked (Los Alamos National Laboratory, unpublished data). Although the viral sequences from the dentist and the patient could be distinguished from each other, they were closer than what has been observed for pair-wise comparisons of sequences taken from the other North American isolates studied (*3*).

*Reported by: Div of HIV/AIDS and Hospital Infections Program, Center for Infectious Diseases; Dental Disease Prevention Activity, Center for Prevention Svcs; National Institute for Occupational Safety and Health, CDC.*

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[†]Viral sequences obtained from the samples taken from the dentist and the patient were shown to be distinct by the following criteria:

1. Each PBMC sample was split into two before extraction of DNA. PCR amplification of human leukocyte antigen (DQα) sequences was performed on each sample. The sequences were the same between samples from the same person, but the dentist and patient DNA samples were clearly different.
2. The average difference (4.6%, range: 2.0%–7.2%) between all viral V4-C3-V5 sequences present in the patient versus all those in the dentist was higher than the average difference between the viral sequences present within the dentist alone (3.5%, range: 1.2%–6.0%) and within the patient alone (2.0%, range: 0.4%–3.6%).
3. Viral sequences in the patient possessed some unique substitutions not found in the viral sequences from the dentist, and vice versa.

Viral sequences obtained from the samples taken from the dentist and the patient were judged to be closely related by the following criteria:

1. Individual consensus sequences deduced from single base substitutions (excluding insertions and deletions) in the patient's and dentist's viral sequence sets over the V3-V4-C3-V5 regions of the envelope gene differed by 1.2%. Corresponding DNA regions from 17 other distinct North American isolates gave pair-wise differences to the dentist's consensus viral sequence of 5.1%–10.2%, with an average of 8.1%. Similarly, comparison of the patient's consensus viral sequence to these 17 gave pair-wise differences of 5.9%–10.7%, with an average of 8.8%. The range of all pair-wise differences among the 17 was 4.7%–12.9%, with an average of 9.2%.
2. Unique patterns of nucleotide substitutions not found in any other virus isolate examined were shared between viral sequences found in the dentist and patient.
3. The average difference (4.6%) between all of the patient's viral sequences and all of the dentist's viral sequences over the V4-C3-V5 regions falls into a class of differences (3.4%–5.8%) similarly determined for viruses from known epidemiologically linked cases (*2*; Los Alamos National Laboratory, unpublished data). These include two instances of sexual transmission, one instance of perinatal transmission, and an instance in which a group of persons with hemophilia became infected from a single batch of factor VIII concentrate.

*Human Immunodeficiency Virus — Continued*

**Editorial Note:** The case reported here is consistent with transmission of HIV to a patient during an invasive dental procedure, although the possibility of another source of infection cannot be entirely excluded. No case of such transmission has been previously described.

In this report, the possibility that the patient may have been infected with HIV during the dental procedure is based on the following considerations: 1) the patient had an invasive procedure performed by a dentist with AIDS (such procedures have been associated with transmission of hepatitis B virus, which is also a bloodborne pathogen, to patients); 2) an epidemiologic investigation did not identify any other risk factors or behaviors that may have placed the woman at risk for HIV infection; and 3) viral DNA sequences from the patient and the dentist were closely related. These three considerations are discussed as follows.

First, although the dentist was infected with HIV, it is uncertain whether the patient was exposed to the dentist's blood during the extraction procedure. When interviewed more than 2 years after the procedure, the patient recalled that the dentist wore gloves and a mask. The dental records contained few details on the extraction procedure, but there was no mention of any circumstances that may have exposed the patient to the dentist's blood. Review of the dental records and radiographs suggest that the extraction should have been uncomplicated.

The dentist recalled occasional needlesticks with narrow-gauge needles used to administer local anesthetic. After the diagnosis of HIV infection, however, the dentist did not recall sustaining a needlestick or cut resulting in visible blood during a procedure. The dentist, who is negative for hepatitis B surface antigen, is no longer in practice. Although the dentist employed assistants, it could not be determined whether or to what extent the dentist was assisted in the procedure reported here; it is not known whether the assistants were tested for HIV infection. Details of the disinfection and sterilization practices of the dental office are unknown.

Second, although multiple interviews with this patient and other persons did not identify any established risk factors for HIV infection, such risk factors involve sensitive personal behaviors that may not always be revealed during interviews. In addition, the patient's HIV-infection status at the time of the dental procedure is unknown. The possibility that the patient may have been infected through another mode cannot be entirely excluded.

Third, the DNA sequence data indicate a high degree of similarity between the HIV strains infecting the patient and the dentist. HIV-1 exhibits considerable genetic variability, particularly in the selected regions of the envelope gene tested. This property may be helpful in evaluating the relatedness of viral strains isolated from different persons (*2*). However, use of DNA sequencing for this purpose is new, and there is a paucity of sequence data pertaining to the HIV-1 viruses of sex partners and other epidemiologically related patients. The quantitative criteria for determining epidemiologic linkage based on HIV sequences are just now being developed.

In addition, the occurrence of pharyngitis 4 weeks after the dental procedure is consistent with an acute retroviral syndrome following HIV infection. However, the symptoms in this patient did not include fever, rash, or generalized lymphadenopathy, which have been described in most cases of acute retroviral syndrome (*4*). Also, the time between the dental procedure and the development of AIDS (24 months) was short; 1% of infected homosexual/bisexual men and 5% of infected transfusion recipients develop AIDS within 2 years of infection (*5,6*).

*Human Immunodeficiency Virus — Continued*

Prospective investigations of HIV transmission from patients to health-care workers indicate that the risk for HIV transmission after percutaneous exposure to HIV-infected blood averages 0.4% (*7*). Four investigations have been reported that attempted to assess the risk of HIV transmission from infected health-care workers to their patients (*8–11*). In the largest study, 616 patients who underwent surgery by a general surgeon during the 7 years preceding his diagnosis of AIDS were tested for HIV antibody. One patient, an IV-drug user, was positive for HIV antibody (*8*). Viral strains from the patient and the surgeon were not characterized.

Transmission of hepatitis B virus (HBV), which has epidemiologic transmission patterns similar to HIV, from health-care workers to patients during invasive medical (primarily gynecologic surgery) and dental (primarily oral surgery) procedures has been reported (*12–15*). The dental procedures in which HBV was transmitted involved oral surgical procedures such as dental extractions. In these reported instances, the dental workers did not routinely wear gloves and were thought to have sustained puncture wounds or had skin lesions or microlacerations that allowed virus to contaminate instruments or open wounds of patients. Also, these health-care workers (when tested) have been positive for hepatitis B e antigen, a marker that indicates very high titers of virus in blood and correlates with increased transmissibility of HBV.

Restrictions on patient care for health-care workers with HIV infection have been considered by the American Medical Association (*16*), the American Hospital Association (*17*), the American Dental Association (*18*), the American College of Obstetricians and Gynecologists (*19*), the British government (*20*), CDC (*21*), and other organizations. Although the specific recommendations of these organizations vary to some extent, these recommendations generally have stated that the risk, if any, of HIV transmission from health-care workers to patients occurs during invasive procedures and that decisions regarding restrictions of patient care by infected workers who perform such procedures should be made on an individual basis.

The epidemiologic and laboratory findings in this investigation indicate possible transmission of HIV from the dentist to the patient. Regardless of the interpretation of the findings in this investigation, adherence to universal precautions, including prevention of blood contact between health-care workers and patients and proper sterilization and disinfection of patient-care equipment, is important for prevention of transmission of bloodborne pathogens in health-care settings (*21–23*). CDC is considering the implications of this case in its review of the guidelines for prevention of transmission of HIV and other bloodborne pathogens to patients during invasive procedures.

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## Asthma — United States, 1980–1987

Respiratory asthma* (*1*) is a common chronic disease that affects persons in all age groups. Since the early 1970s, the prevalence, morbidity, and mortality of asthma in the United States and other countries have been increasing (*2–5*). In 1988, related health-care expenditures for asthma in the United States exceeded $4 billion (CDC/Health Care Financing Administration, unpublished data). This report summarizes national trends in disease burden for asthma using data from the CDC's National Center for Health Statistics' multiple cause-of-death file†, National Ambulatory

**International Classification of Diseases, Ninth Revision, Clinical Modification*, rubric 493.
†A public-use tape file that contains a data record for all deaths processed by NCHS. Each data record includes multiple cause, underlying cause, and demographic data for a death (*6*).

*Asthma – Continued*

Medical Care Survey (NAMCS), National Hospital Discharge Survey, and National Health Interview Survey (NHIS) (*6–10*).

From 1980 to 1987, the death rate from asthma, as the underlying cause of death, increased 31% from 1.3 per 100,000 population (2891 deaths) to 1.7 per 100,000 (4360 deaths) (Figure 1). During this period, the rate for females increased 50% (from 1.2 to 1.8 per 100,000); the rate for males increased 23% (from 1.3 to 1.6 per 100,000). Death rates were generally higher for older age groups; the highest rates were in persons ≥65 years of age (7.9 per 100,000 in 1987).

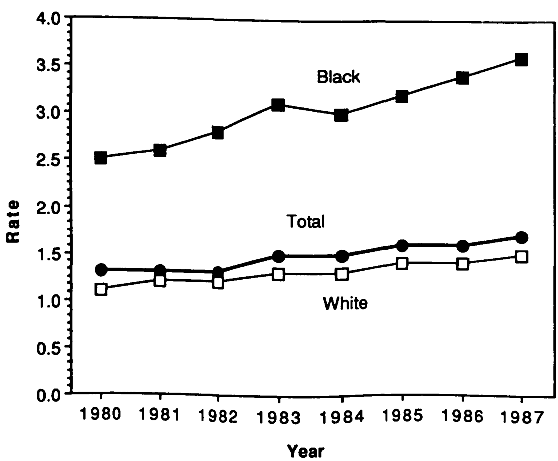
The annual asthma death rate was consistently higher for blacks than for whites; for blacks the rate increased 44% (from 2.5 to 3.6 per 100,000), compared with a 36% increase (from 1.1 to 1.5 per 100,000) for whites (Figure 1). The average annual black-white rate ratio was 2.6 for males and 2.2 for females.

Asthma is generally treated in outpatient settings. Of an estimated 640 million ambulatory-care visits in the 1985 NAMCS, 6.5 million (1%) visits were for asthma as a first-listed diagnosis. Whites had a higher rate (28.0 per 1000 population) of outpatient visits for asthma than blacks (24.3 per 1000 population); females had a higher rate (28.9 per 1000) than males (25.7 per 1000). Rates were highest for persons <20 and ≥65 years of age (33.1 and 33.3 per 1000, respectively). Females had higher rates of clinic visits than males at all ages except for those aged <20 years.

From 1980 through 1987, the hospital discharge rate for asthma as the first-listed diagnosis increased 6%, from 174.6 to 184.8 per 100,000 population (Figure 2). The highest age-specific hospitalization rates were consistently among those aged ≥65 years. However, the highest rate increase (24%) was among those aged <20 years (from 196.8 to 245.0 per 100,000). Females had higher hospital discharge rates than males each year; blacks were more than twice as likely as whites to be hospitalized.

Based on NHIS results for 1980 through 1987, the prevalence of asthma increased an estimated 29%, from 31.2 to 40.1 per 1000 population (from 6.8 to 9.6 million persons affected). The greatest increase occurred in persons <20 years of age (42%), reflecting a 69% increase among females in this age group. Among persons <20

**FIGURE 1. Age-adjusted death rates* for asthma as the underlying cause of death, by race and year — United States, 1980–1987**




*Per 100,000 persons, age-adjusted to the 1980 U.S. population.

*Asthma — Continued*

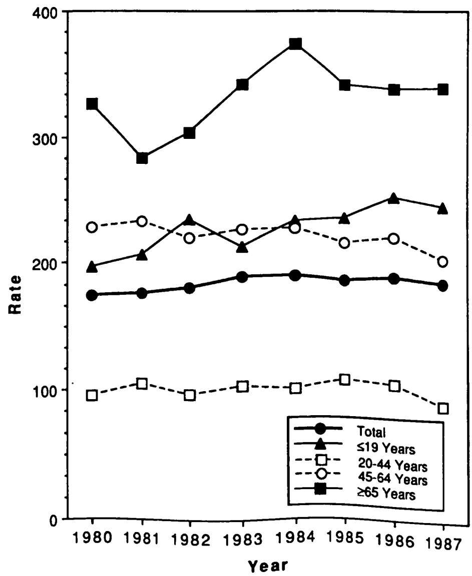
years of age, rates were higher for males than for females (59.9 and 41.0 per 1000, respectively, in 1987); however, for all age groups ≥20 years, rates were higher for females. Each year, blacks had slightly higher rates than whites (e.g., 44.2 per 1000 for blacks and 40.3 per 1000 for whites in 1987).

*Reported by: R Fulwood, MSPH, S Parker, PhD, SS Hurd, PhD, National Heart, Lung, and Blood Institute, National Institutes of Health. Chronic Disease Surveillance Br, Office of Surveillance and Analysis, Center for Chronic Disease Prevention and Health Promotion, CDC.*

**Editorial Note:** The Year 2000 Health Objectives for the Nation seek to reduce morbidity from asthma (*11*)—yet, the data in this report show increases in morbidity and mortality from asthma and underscore substantial age-, race-, and gender-specific differences. Factors that may contribute to these increases include exposure to infections and other "triggers" for bronchoconstriction and inflammation, patterns of health-care use, patient compliance and understanding of treatment, current medical regimen (*5*), air quality (*12*), and the severity and prevalence of disease. The exacerbation of asthma is hypothesized to be primarily an inflammatory process of the bronchial airways (*13*). To better characterize the epidemiology of asthma in North America and Europe, the National Task Force on Asthma Morbidity and Mortality is collaborating with the European community in a survey of asthma prevalence. In addition, other studies are focusing on the natural history of asthma and the importance of respiratory viral infections (*14*), allergens, and other environmental or occupational exposures in the initiation and exacerbation of asthma.

In March 1989, the National Heart, Lung, and Blood Institute, National Institutes of Health, implemented the National Asthma Education Program (NAEP) to establish management guidelines for clinicians and to develop a comprehensive asthma

**FIGURE 2. Age-adjusted hospital discharge rates* for asthma as the first-listed diagnosis, by age and year — National Hospital Discharge Survey, United States, 1980–1987**




*Per 100,000 persons, age-adjusted to the 1980 U.S. population.

*Asthma – Continued*

education campaign for health professionals and patients in the United States. Goals of the program are to: 1) raise awareness that asthma is a serious chronic disease, 2) help ensure that patients recognize symptoms of asthma and that health professionals diagnose asthma, and 3) ensure effective control of asthma by encouraging partnership among patients, physicians, and other health professionals by using updated treatment regimens and education programs.

The NAEP determines its program direction and strategies through a coordinating committee comprised of national medical and health professional associations, voluntary health organizations, and federal agencies. The NAEP has also convened an expert panel to outline management protocols for acute and chronic asthma in children and adults. Since patient education is an integral part of asthma management (*15–17*), the report will emphasize the importance of patient education. The NAEP has also organized subcommittees to address school asthma education, professional education, and patient and public education while focusing on high-risk and minority populations for comprehensive programs and activities.

The findings in this report suggest that, to reduce morbidity and preventable mortality associated with asthma, health-care personnel and public health officials must promote timely and aggressive medical treatment (*13*) and physician-patient co-management (*18*). In addition, there is a need for consensus on an epidemiologic working definition for asthma (*19*) (e.g., diagnostic criteria and a case definition). Public health officials should also address issues of smoking, air quality, access to regular health care, and education in schools as these impact on asthma.

For more information about the NAEP, contact the National Asthma Education Program Information Center at (301) 951-3260.

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*Asthma – Continued*

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## Outbreak of Measles in a Private International School – Geneva, Switzerland, 1989

On March 3, 1989, the medical adviser of a private international school in Geneva telephoned the department of the Cantonal Medical Officer to report the occurrence of five cases of measles. The Geneva health services rapidly implemented prospective and retrospective surveillance that identified 12 other cases; in the subsequent 2-week period, nine new cases occurred, bringing the total to 26 cases among the 741 students at the school (Table 1).

The first case occurred during the week of January 11–17 (Figure 1) in a student from a central African country who had spent the Christmas holidays with his family. After report of the first cases, an information letter in English and French was sent to the parents, and a meeting was arranged at the school in preparation for an internal

**TABLE 1. Country of origin of students and number of measles cases observed during an outbreak in a private international school – Geneva, Switzerland, January–March 1989**

| Country | No. students | No. cases |
|---|---|---|
| United States of America | 125 | 4 |
| Switzerland | 103 | 1 |
| United Kingdom | 43 | 0 |
| France | 40 | 2 |
| Italy | 36 | 4 |
| Iran (Islamic Republic of) | 23 | 0 |
| Japan | 21 | 0 |
| Spain | 18 | 2 |
| Lebanon | 17 | 0 |
| Netherlands | 16 | 0 |
| Libyan Arab Jamahiriya | 14 | 1 |
| Finland | 13 | 0 |
| Greece | 13 | 3 |
| Egypt | 12 | 1 |
| Other* | 247 | 8 |
| **Total** | **741** | **26** |

*Includes Andorra, Bahrain, Cyprus, Mexico, Saudi Arabia, Sweden, Turkey, and Zaire; altogether more than 50 countries.

*Measles — Continued*

vaccination campaign. A series of articles on measles epidemics in communities were provided for the school nurse and made available to students and parents, and two vaccination sessions were organized at the school.

Students were not vaccinated if they submitted documentation of measles vaccination after the age of 15 months or a medical certificate stating that they had already had measles. Written authorization from their parents was required for their vaccination at the school. Boarders, whose parents generally could not be reached within the desired period, were vaccinated under the responsibility of the school.

Of the 255 students not already vaccinated against measles, 192 (26% of all students) were vaccinated during sessions organized at the school. The others were not vaccinated, either because they produced documentation of previous vaccination (198 [27%]); they were sick, absent, or had been vaccinated by a private physician when the epidemic occurred (63 [9%]); or the parents had not understood the information letter (288 [39%]) (in this case a second letter was sent). No new cases occurred after March 15.

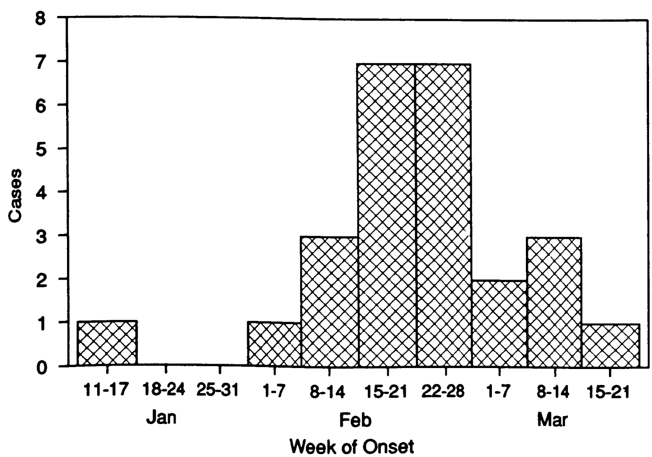
For more than one third of the students, parents failed to reply with permission to vaccinate. Subsequently, the Youth Health Department sent recommendations to the school concerning the maintenance of students' medical records and the possibility of improved future collaboration.

Measles elimination will prove difficult in Switzerland because of the following constraints: 1) measles vaccination is not compulsory, 2) there is a shortage of data on vaccination coverage, 3) communicable diseases are not reported by practitioners, and 4) the structures capable of taking effective action in the event of an outbreak are inadequate.

*Adapted from the* Weekly Epidemiological Record *1990;65:173–5. Based on a report by the Institute of Social and Preventive Medicine, University of Geneva. Div of Immunization, Center for Prevention Svcs, CDC.*

**Editorial Note:** This outbreak illustrates the potential for measles transmission in school settings, in particular when vaccination coverage is low. It is encouraging that

**FIGURE 1. Measles cases* in a private international school, by week of rash onset — Geneva, Switzerland, January–March 1989**




*Date of rash onset unknown for one case.

*Measles — Continued*

health authorities in Switzerland took aggressive steps to try to control the outbreak. Low vaccination coverage among school-aged children was also felt to be a contributing factor during a recent communitywide outbreak of measles in Quebec (*1*).

Documentation of measles vaccination is not required for school attendees in Quebec (*1*) or Switzerland. Many students who lack documentation of vaccination probably receive measles vaccine as a result of routine childhood vaccination programs; however, lack of systematic vaccination in this population leads to accumulation of susceptibles, and measles outbreaks can occur. School vaccination requirements in the United States have been highly effective in increasing vaccine coverage among school-aged children and in decreasing the incidence of measles (*2*).

Outbreaks of measles in school settings can occur even with universal school vaccination requirements and high vaccination coverage. Some persons may remain susceptible as a result of exemptions to vaccination, and 2%–5% will be susceptible because of vaccine failure. In 1989, 170 measles outbreaks in the United States involving predominantly school-aged persons accounted for 32% of all reported cases. As many as 89% of patients in these outbreaks had been vaccinated on or after their first birthday (*3*). Routine administration of a second dose of measles vaccine will help to reduce the number of school-aged children who are susceptible because of vaccine failure and decrease the likelihood of outbreaks in this setting (*4*).

The outbreak-control strategy used during this school outbreak is not appropriate for measles control in the United States. Voluntary vaccination programs in schools may not successfully interrupt transmission (*5*). The Immunization Practices Advisory Committee (ACIP) recommends that during outbreaks of measles in schools and colleges *all* students who cannot provide documentation of measles immunity* be revaccinated with measles-mump-rubella vaccine (MMR) or be excluded from the setting (*4*). During the Geneva outbreak, no students were given second doses of measles vaccine. Furthermore, only 61% of students were either vaccinated or provided documentation of a single dose of vaccine. It is unclear whether the relatively low level of vaccine coverage influenced the course of the outbreak or whether the outbreak ended spontaneously.

Ensuring high immunity levels at the appropriate age is essential for prevention of measles transmission; other preventive measures include surveillance, reporting of suspected cases to health authorities, and prompt intervention to control outbreaks.

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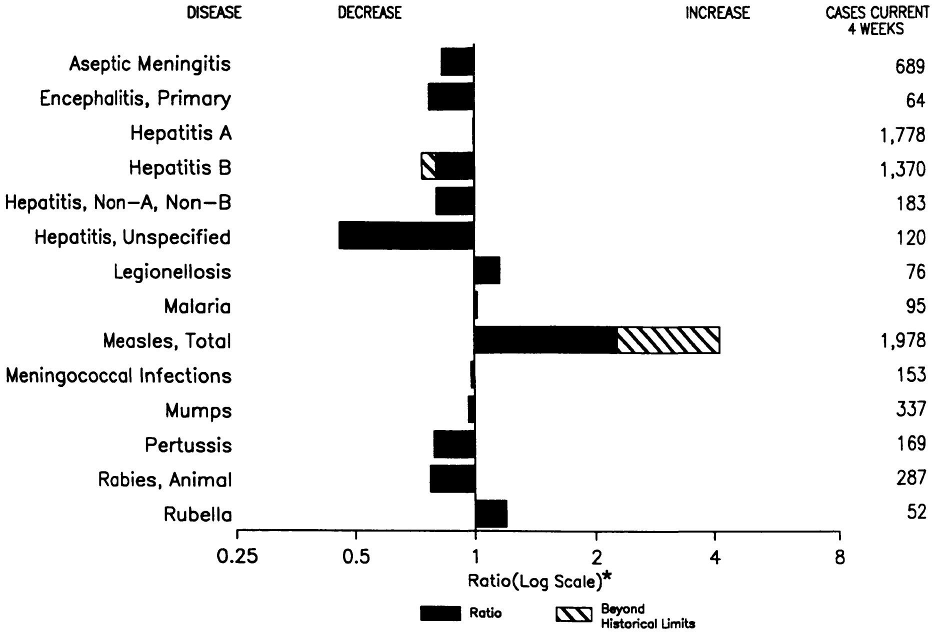
*Physician-documented measles, born before 1957, serologic evidence of immunity, or documentation of two doses of measles vaccine on or after the first birthday.

**FIGURE I. Notifiable disease reports, comparison of 4-week totals ending July 21, 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 July 21, 1990 (29th Week)**

| | Cum. 1990 | | Cum. 1990 |
|---|---|---|---|
| AIDS | 24,371 | Plague | 1 |
| Anthrax | - | Poliomyelitis, Paralytic* | - |
| Botulism: Foodborne | 1 | Psittacosis | 72 |
| Infant | 32 | Rabies, human | 1 |
| Other | 2 | Syphilis: civilian | 26,374 |
| Brucellosis | 37 | military | 143 |
| Cholera | 2 | Syphilis, congenital, age < 1 year | 45 |
| Congenital rubella syndrome | 2 | Tetanus | 27 |
| Diphtheria | 1 | Toxic shock syndrome | 193 |
| Encephalitis, post-infectious | 59 | Trichinosis | 15 |
| Gonorrhea: civilian | 362,115 | Tuberculosis | 11,775 |
| military | 4,976 | Tularemia | 54 |
| Leprosy | 98 | Typhoid fever | 206 |
| Leptospirosis | 26 | Typhus fever, tickborne (RMSF) | 232 |
| Measles: imported | 777 | | |
| indigenous | 15,318 | | |

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

# TABLE II. Cases of specified notifiable diseases, United States, weeks ending July 21, 1990, and July 22, 1989 (29th 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 | 24,371 | 3,210 | 368 | 59 | 362,115 | 373,359 | 16,045 | 11,198 | 1,145 | 949 | 594 | 98 |
| NEW ENGLAND | 904 | 128 | 12 | - | 9,999 | 10,461 | 328 | 579 | 37 | 40 | 30 | 5 |
| Maine | 36 | 6 | 1 | - | 116 | 161 | 5 | 24 | 4 | 1 | 3 | - |
| N.H. | 44 | 12 | - | - | 119 | 98 | 5 | 24 | 3 | 2 | 3 | - |
| Vt. | 8 | 12 | 2 | - | 33 | 39 | 4 | 30 | 3 | - | 5 | - |
| Mass. | 500 | 39 | 3 | - | 4,028 | 4,084 | 234 | 364 | 18 | 35 | 14 | 4 |
| R.I. | 48 | 43 | 1 | - | 589 | 747 | 32 | 29 | - | 2 | 5 | 1 |
| Conn. | 268 | 16 | 5 | - | 5,114 | 5,332 | 48 | 108 | 9 | - | - | - |
| MID. ATLANTIC | 7,676 | 332 | 31 | 4 | 49,577 | 55,240 | 2,303 | 1,608 | 129 | 67 | 171 | 17 |
| Upstate N.Y. | 1,135 | 159 | 26 | 1 | 7,532 | 8,339 | 602 | 404 | 32 | 20 | 74 | 1 |
| N.Y. City | 4,439 | 69 | 2 | 1 | 20,123 | 21,997 | 272 | 456 | 19 | 31 | 27 | 12 |
| N.J. | 1,381 | - | 1 | - | 8,643 | 7,682 | 238 | 359 | 29 | - | 25 | 3 |
| Pa. | 721 | 104 | 2 | 2 | 13,279 | 17,222 | 1,191 | 389 | 49 | 16 | 45 | 1 |
| E.N. CENTRAL | 1,634 | 467 | 79 | 11 | 69,793 | 66,864 | 1,198 | 1,385 | 83 | 58 | 140 | 1 |
| Ohio | 406 | 107 | 18 | 3 | 21,427 | 17,363 | 120 | 251 | 26 | 9 | 51 | - |
| Ind. | 137 | 93 | 2 | 6 | 6,129 | 4,949 | 70 | 269 | 5 | 14 | 29 | - |
| Ill. | 676 | 77 | 24 | 2 | 22,056 | 21,346 | 595 | 255 | 24 | 15 | 8 | 1 |
| Mich. | 273 | 164 | 33 | - | 16,232 | 17,547 | 216 | 387 | 22 | 20 | 37 | - |
| Wis. | 142 | 26 | 2 | - | 3,949 | 5,659 | 197 | 223 | 6 | - | 15 | - |
| W.N. CENTRAL | 565 | 134 | 34 | 1 | 18,963 | 17,214 | 937 | 531 | 79 | 22 | 34 | - |
| Minn. | 94 | 10 | 11 | 1 | 2,303 | 1,761 | 151 | 73 | 21 | - | - | - |
| Iowa | 25 | 15 | 4 | - | 1,416 | 1,427 | 190 | 40 | 7 | 2 | 3 | - |
| Mo. | 336 | 69 | 3 | - | 11,410 | 10,349 | 296 | 325 | 31 | 16 | 20 | - |
| N. Dak. | 2 | 7 | - | - | 55 | 75 | 10 | 4 | 2 | 1 | - | - |
| S. Dak. | 1 | 4 | 2 | - | 122 | 143 | 106 | 4 | 2 | - | - | - |
| Nebr. | 27 | 12 | 6 | - | 924 | 873 | 50 | 22 | 4 | - | 6 | - |
| Kans. | 80 | 17 | 8 | - | 2,733 | 2,586 | 134 | 63 | 12 | 3 | 5 | - |
| S. ATLANTIC | 5,220 | 712 | 90 | 17 | 104,001 | 101,515 | 1,932 | 2,140 | 180 | 137 | 83 | 4 |
| Del. | 60 | 22 | 3 | - | 1,741 | 1,676 | 78 | 57 | 6 | 2 | 5 | - |
| Md. | 510 | 83 | 13 | 1 | 11,817 | 10,914 | 709 | 294 | 24 | 8 | 22 | 2 |
| D.C. | 411 | 2 | - | - | 7,188 | 6,846 | 12 | 28 | 4 | - | - | - |
| Va. | 497 | 104 | 34 | 2 | 8,763 | 8,488 | 166 | 126 | 26 | 94 | 7 | - |
| W. Va. | 40 | 19 | 7 | - | 666 | 778 | 11 | 50 | 3 | 1 | 3 | - |
| N.C. | 312 | 70 | 23 | - | 16,653 | 15,370 | 417 | 610 | 75 | - | 15 | 1 |
| S.C. | 210 | 10 | 1 | - | 8,215 | 9,299 | 24 | 342 | 11 | 8 | 14 | - |
| Ga. | 706 | 120 | 4 | 1 | 23,165 | 19,591 | 191 | 248 | 5 | 7 | 12 | - |
| Fla. | 2,474 | 282 | 5 | 13 | 25,793 | 28,553 | 324 | 385 | 26 | 17 | 5 | 1 |
| E.S. CENTRAL | 553 | 319 | 32 | 1 | 29,653 | 28,841 | 219 | 845 | 76 | 5 | 42 | - |
| Ky. | 109 | 76 | 10 | - | 3,241 | 2,858 | 53 | 294 | 26 | 4 | 18 | - |
| Tenn. | 188 | 49 | 16 | 1 | 9,261 | 9,607 | 103 | 449 | 35 | - | 13 | - |
| Ala. | 121 | 137 | 6 | - | 9,616 | 9,017 | 62 | 98 | 13 | - | 11 | - |
| Miss. | 135 | 57 | - | - | 7,535 | 7,359 | 1 | 4 | 2 | 1 | - | - |
| W.S. CENTRAL | 2,484 | 338 | 13 | 6 | 36,637 | 38,694 | 1,630 | 1,072 | 51 | 158 | 33 | 24 |
| Ark. | 86 | 6 | 1 | - | 4,774 | 4,223 | 288 | 50 | 6 | 12 | 7 | - |
| La. | 404 | 48 | 4 | - | 7,499 | 8,064 | 108 | 179 | 2 | 5 | 11 | - |
| Okla. | 121 | 25 | 1 | 5 | 3,381 | 3,312 | 322 | 81 | 16 | 13 | 11 | - |
| Tex. | 1,873 | 259 | 7 | 1 | 20,983 | 23,095 | 912 | 762 | 27 | 128 | 4 | 24 |
| MOUNTAIN | 638 | 149 | 14 | - | 7,100 | 7,998 | 2,565 | 845 | 94 | 75 | 26 | - |
| Mont. | 7 | 2 | - | - | 100 | 109 | 68 | 40 | 2 | 4 | 1 | - |
| Idaho | 15 | - | - | - | 72 | 108 | 49 | 52 | 8 | - | 3 | - |
| Wyo. | 2 | 1 | 1 | - | 94 | 52 | 24 | 9 | 5 | 1 | - | - |
| Colo. | 188 | 34 | 3 | - | 1,408 | 1,793 | 161 | 93 | 26 | 26 | 3 | - |
| N. Mex. | 55 | 8 | - | - | 701 | 781 | 464 | 102 | 7 | 2 | 2 | - |
| Ariz. | 213 | 71 | 4 | - | 3,031 | 2,994 | 1,376 | 303 | 28 | 29 | 9 | - |
| Utah | 54 | 19 | 2 | - | 237 | 245 | 224 | 54 | 11 | 4 | 3 | - |
| Nev. | 104 | 14 | 4 | - | 1,457 | 1,916 | 199 | 192 | 7 | 9 | 5 | - |
| PACIFIC | 4,697 | 631 | 63 | 19 | 36,392 | 46,532 | 4,933 | 2,193 | 416 | 387 | 35 | 47 |
| Wash. | 327 | - | 4 | 1 | 2,986 | 3,824 | 845 | 348 | 75 | 16 | 8 | 3 |
| Oreg. | 172 | - | - | - | 1,421 | 1,663 | 499 | 241 | 26 | 7 | - | - |
| Calif. | 4,100 | 545 | 54 | 17 | 31,119 | 40,254 | 3,421 | 1,529 | 303 | 358 | 26 | 36 |
| Alaska | 23 | 37 | 4 | - | 579 | 515 | 111 | 37 | 3 | 1 | - | - |
| Hawaii | 75 | 49 | 1 | 1 | 287 | 276 | 57 | 38 | 9 | 5 | 1 | 8 |
| Guam | 1 | - | - | - | 123 | 79 | 7 | 1 | - | 7 | - | - |
| P.R. | 901 | 43 | 6 | - | 460 | 629 | 104 | 169 | 2 | 23 | - | - |
| V.I. | 4 | - | - | - | 241 | 377 | 1 | 8 | - | - | - | - |
| Amer. Samoa | - | 1 | - | - | 44 | 12 | 18 | - | - | - | - | 10 |
| C.N.M.I. | - | - | - | - | 104 | 57 | 9 | 6 | - | 15 | - | 3 |

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 July 21, 1990, and July 22, 1989 (29th 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 | 588 | 636 | 15,318 | 9 | 777 | 9,405 | 1,544 | 78 | 3,444 | 51 | 1,641 | 1,499 | 9 | 661 | 267 |
| NEW ENGLAND | 53 | - | 174 | - | 20 | 302 | 119 | - | 31 | 5 | 210 | 226 | - | 7 | 6 |
| Maine | 1 | - | 27 | - | 2 | - | 10 | - | - | - | 6 | 4 | - | - | - |
| N.H. | 4 | - | - | - | 8 | 8 | 5 | - | 7 | - | 12 | 5 | - | 1 | 4 |
| Vt. | 4 | - | - | - | 1 | 2 | 10 | - | 1 | - | 6 | 6 | - | - | 1 |
| Mass. | 30 | - | 15 | - | 4 | 41 | 57 | - | 8 | 3 | 172 | 193 | - | 2 | 1 |
| R.I. | 4 | - | 27 | - | 3 | 41 | 10 | - | 5 | - | 2 | 8 | - | 1 | - |
| Conn. | 10 | - | 105 | - | 2 | 210 | 27 | - | 10 | 2 | 12 | 10 | - | 3 | - |
| MID. ATLANTIC | 120 | 41 | 860 | - | 148 | 851 | 225 | 6 | 211 | 8 | 321 | 90 | - | 4 | 25 |
| Upstate N.Y. | 24 | - | 194 | - | 109 | 137 | 86 | 5 | 91 | 4 | 253 | 39 | - | 3 | 8 |
| N.Y. City | 41 | 20 | 201 | - | 21 | 70 | 27 | - | - | - | - | 2 | - | - | 15 |
| N.J. | 39 | - | 105 | - | 9 | 408 | 49 | - | 47 | - | 13 | 23 | - | - | 2 |
| Pa. | 16 | 21 | 360 | - | 9 | 236 | 63 | 1 | 73 | 4 | 55 | 26 | - | 1 | - |
| E.N. CENTRAL | 26 | 8 | 2,999 | - | 141 | 2,613 | 204 | 5 | 359 | 2 | 321 | 209 | - | 30 | 23 |
| Ohio | 5 | - | 452 | - | 3 | 661 | 67 | - | 75 | - | 86 | 33 | - | 1 | 3 |
| Ind. | 1 | 2 | 316 | - | 1 | 51 | 21 | - | 13 | 1 | 59 | 13 | - | - | - |
| Ill. | 9 | - | 1,159 | - | 10 | 1,655 | 49 | - | 114 | - | 87 | 77 | - | 17 | 18 |
| Mich. | 8 | 6 | 338 | - | 125 | 76 | 46 | 5 | 120 | 1 | 40 | 26 | - | 9 | 1 |
| Wis. | 3 | - | 734 | - | 2 | 170 | 21 | - | 37 | - | 49 | 60 | - | 3 | 1 |
| W.N. CENTRAL | 10 | 17 | 750 | - | 13 | 576 | 51 | 1 | 90 | 4 | 61 | 75 | - | 6 | 6 |
| Minn. | 1 | - | 314 | - | 3 | 12 | 10 | - | - | - | 6 | 13 | - | 1 | - |
| Iowa | 2 | - | 23 | - | 1 | 5 | 1 | - | 15 | - | 7 | 11 | - | 4 | 1 |
| Mo. | 6 | - | 78 | - | - | 314 | 20 | 1 | 43 | 1 | 38 | 45 | - | - | 4 |
| N. Dak. | - | - | - | - | - | - | - | - | - | - | 1 | - | - | 1 | - |
| S. Dak. | - | - | 15 | - | 8 | - | 2 | - | - | - | 1 | 1 | - | - | - |
| Nebr. | - | - | 97 | - | 1 | 112 | 5 | - | 3 | - | 2 | 3 | - | - | - |
| Kans. | 1 | 17 | 223 | - | - | 133 | 13 | - | 29 | 3 | 6 | 2 | - | - | 1 |
| S. ATLANTIC | 135 | 4 | 797 | 2 | 130 | 408 | 284 | 50 | 1,435 | 3 | 143 | 110 | 1 | 15 | 8 |
| Del. | 2 | - | 8 | - | 3 | 37 | 2 | - | 3 | - | 2 | 1 | - | - | - |
| Md. | 36 | 2 | 183 | 1§ | 19 | 51 | 32 | 26 | 854 | - | 39 | 10 | 1 | 2 | 2 |
| D.C. | 10 | - | 10 | - | 7 | 17 | 11 | - | 25 | - | 14 | - | - | 1 | - |
| Va. | 35 | 2 | 68 | - | 2 | 21 | 36 | 5 | 82 | - | 14 | 9 | - | 1 | - |
| W. Va. | 2 | - | 6 | - | - | 28 | 12 | - | 41 | - | 10 | 16 | - | - | - |
| N.C. | 10 | - | 9 | 1† | 15 | 167 | 42 | 19 | 204 | 3 | 35 | 21 | - | - | 1 |
| S.C. | - | - | 4 | - | - | - | 21 | - | 21 | - | 5 | - | - | - | - |
| Ga. | 11 | - | 80 | - | 26 | 2 | 51 | - | 56 | - | 14 | 16 | - | - | - |
| Fla. | 29 | - | 429 | - | 58 | 85 | 77 | - | 149 | - | 10 | 37 | - | 11 | 5 |
| E.S. CENTRAL | 14 | 2 | 114 | - | 2 | 174 | 89 | 1 | 70 | 6 | 93 | 65 | 1 | 2 | 2 |
| Ky. | 2 | - | 24 | - | - | 20 | 28 | - | - | - | - | 1 | - | - | - |
| Tenn. | 7 | - | 42 | - | - | 109 | 32 | - | 36 | 1 | 35 | 23 | - | 1 | 2 |
| Ala. | 5 | 2 | 19 | - | 2 | 45 | 27 | 1 | 10 | 5 | 53 | 34 | 1 | 1 | - |
| Miss. | - | - | 29 | - | - | - | 2 | - | 24 | - | 5 | 7 | - | - | - |
| W.S. CENTRAL | 27 | 18 | 3,802 | - | 87 | 2,940 | 107 | 4 | 556 | 1 | 40 | 122 | - | 2 | 36 |
| Ark. | 1 | - | 12 | - | 29 | 2 | 16 | - | 128 | - | 2 | 16 | - | 1 | - |
| La. | 1 | - | 10 | - | - | 9 | 26 | 2 | 90 | 1 | 13 | 6 | - | - | 5 |
| Okla. | 8 | 18 | 172 | - | - | 105 | 13 | - | 103 | - | 25 | 19 | - | 1 | 1 |
| Tex. | 17 | - | 3,608 | - | 58 | 2,824 | 52 | 2 | 235 | - | - | 81 | - | - | 30 |
| MOUNTAIN | 15 | 19 | 687 | 5 | 88 | 318 | 49 | 3 | 276 | 8 | 167 | 422 | - | 100 | 35 |
| Mont. | 1 | U | - | U | 1 | 13 | 9 | U | - | U | 24 | 17 | U | 13 | 1 |
| Idaho | 3 | - | 15 | 4§ | 10 | 2 | 5 | 1 | 141 | 3 | 35 | 57 | - | 48 | 32 |
| Wyo. | - | - | - | - | 11 | - | - | - | 2 | - | - | - | - | - | 1 |
| Colo. | 2 | 5 | 82 | 1§ | 41 | 61 | 15 | - | 19 | 4 | 57 | 31 | - | 4 | - |
| N. Mex. | 1 | - | 80 | - | 10 | 31 | 6 | N | N | - | 9 | 7 | - | - | - |
| Ariz. | 7 | 11 | 260 | - | 12 | 109 | 4 | 2 | 91 | 1 | 28 | 297 | - | 30 | - |
| Utah | - | - | 58 | - | - | 100 | 5 | - | 8 | - | 10 | 12 | - | 1 | - |
| Nev. | 1 | 3 | 192 | - | 3 | 2 | 5 | - | 15 | - | 4 | 1 | - | 4 | 1 |
| PACIFIC | 188 | 527 | 5,135 | 2 | 148 | 1,223 | 416 | 8 | 416 | 14 | 285 | 180 | 7 | 495 | 126 |
| Wash. | 16 | - | 202 | - | 69 | 36 | 50 | - | 38 | 5 | 68 | 63 | - | - | - |
| Oreg. | 12 | - | 142 | - | 44 | 16 | 46 | N | N | - | 20 | 7 | 1 | 8 | 2 |
| Calif. | 155 | 527 | 4,705 | - | 30 | 1,146 | 309 | 8 | 367 | 8 | 171 | 106 | 6 | 477 | 103 |
| Alaska | 2 | - | 78 | - | 2 | - | 7 | - | - | - | 4 | - | - | - | - |
| Hawaii | 3 | - | 8 | 2† | 3 | 28 | 4 | - | 11 | 1 | 22 | 4 | - | 10 | 21 |
| Guam | 2 | U | - | U | 1 | 2 | - | U | 2 | U | - | 1 | U | - | - |
| P.R. | 2 | - | 808 | - | - | 437 | 9 | - | 7 | - | 5 | 4 | - | - | 6 |
| V.I. | - | - | 21 | - | 3 | 4 | - | - | 7 | - | - | - | - | - | - |
| Amer. Samoa | 35 | U | 113 | U | - | - | - | U | 15 | U | - | - | U | - | - |
| C.N.M.I. | - | U | - | U | - | - | - | U | 7 | U | - | - | 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 July 21, 1990, and July 22, 1989 (29th 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 | 26,374 | 23,468 | 193 | 11,775 | 11,482 | 54 | 206 | 232 | 2,269 |
| NEW ENGLAND | 997 | 923 | 15 | 307 | 297 | 2 | 14 | 5 | 4 |
| Maine | 5 | 5 | 4 | - | 3 | - | - | - | - |
| N.H. | 40 | 6 | 1 | 3 | 16 | - | - | - | 2 |
| Vt. | 1 | - | - | 7 | 4 | - | - | - | - |
| Mass. | 377 | 282 | 8 | 145 | 152 | 2 | 13 | 4 | - |
| R.I. | 7 | 15 | 1 | 76 | 37 | - | - | - | - |
| Conn. | 567 | 615 | 1 | 76 | 85 | - | 1 | 1 | 2 |
| MID. ATLANTIC | 5,696 | 4,838 | 18 | 2,925 | 2,192 | 1 | 53 | 11 | 507 |
| Upstate N.Y. | 486 | 469 | 6 | 240 | 184 | - | 11 | 6 | 46 |
| N.Y. City | 2,546 | 2,128 | 5 | 1,763 | 1,247 | - | 27 | - | - |
| N.J. | 928 | 736 | - | 505 | 374 | 1 | 13 | 3 | 156 |
| Pa. | 1,736 | 1,505 | 7 | 417 | 387 | - | 2 | 2 | 305 |
| E.N. CENTRAL | 1,828 | 972 | 48 | 1,207 | 1,227 | - | 20 | 23 | 87 |
| Ohio | 294 | 73 | 18 | 197 | 227 | - | 4 | 18 | 3 |
| Ind. | 43 | 40 | 1 | 94 | 116 | - | 1 | - | 4 |
| Ill. | 729 | 445 | 7 | 597 | 550 | - | 11 | - | 19 |
| Mich. | 572 | 335 | 22 | 266 | 262 | - | 3 | 5 | 19 |
| Wis. | 190 | 79 | - | 53 | 72 | - | 1 | - | 42 |
| W.N. CENTRAL | 239 | 186 | 23 | 316 | 286 | 20 | - | 24 | 370 |
| Minn. | 50 | 24 | 1 | 58 | 58 | - | - | - | 145 |
| Iowa | 35 | 21 | 4 | 34 | 28 | - | - | - | 17 |
| Mo. | 128 | 93 | 11 | 151 | 121 | 17 | - | 19 | 13 |
| N. Dak. | 1 | 3 | - | 11 | 11 | - | - | - | 47 |
| S. Dak. | 1 | - | - | 9 | 15 | 2 | - | 1 | 113 |
| Nebr. | 8 | 17 | 3 | 14 | 13 | 1 | - | - | 4 |
| Kans. | 16 | 28 | 4 | 39 | 40 | - | - | 4 | 31 |
| S. ATLANTIC | 8,447 | 8,592 | 19 | 2,433 | 2,378 | 3 | 23 | 91 | 647 |
| Del. | 102 | 92 | 1 | 23 | 25 | - | - | 1 | 10 |
| Md. | 651 | 415 | 1 | 186 | 201 | - | 8 | 7 | 236 |
| D.C. | 556 | 514 | 1 | 88 | 101 | - | - | - | - |
| Va. | 426 | 305 | 2 | 181 | 203 | 1 | 2 | 8 | 118 |
| W. Va. | 33 | 9 | - | 39 | 43 | - | - | - | 23 |
| N.C. | 995 | 533 | 10 | 299 | 275 | 1 | 2 | 48 | 4 |
| S.C. | 540 | 445 | 2 | 272 | 277 | 1 | - | 24 | 79 |
| Ga. | 2,186 | 2,117 | - | 487 | 364 | - | 1 | 3 | 126 |
| Fla. | 2,958 | 4,162 | 2 | 858 | 889 | - | 10 | - | 51 |
| E.S. CENTRAL | 2,271 | 1,453 | 7 | 894 | 948 | 5 | 1 | 31 | 109 |
| Ky. | 39 | 35 | 2 | 221 | 226 | 1 | 1 | 5 | 28 |
| Tenn. | 887 | 588 | 3 | 234 | 262 | 4 | - | 21 | 27 |
| Ala. | 710 | 483 | 2 | 285 | 268 | - | - | 5 | 54 |
| Miss. | 635 | 347 | - | 154 | 192 | - | - | - | - |
| W.S. CENTRAL | 4,057 | 3,097 | 8 | 1,472 | 1,386 | 16 | 5 | 40 | 267 |
| Ark. | 281 | 192 | - | 185 | 148 | 11 | - | 7 | 22 |
| La. | 1,068 | 718 | 1 | 140 | 181 | - | - | 1 | - |
| Okla. | 124 | 53 | 7 | 113 | 121 | 5 | 2 | 29 | 80 |
| Tex. | 2,584 | 2,134 | - | 1,034 | 936 | - | 3 | 3 | 165 |
| MOUNTAIN | 462 | 424 | 21 | 280 | 262 | 6 | 19 | 5 | 106 |
| Mont. | - | 1 | - | 10 | 7 | - | - | 3 | 31 |
| Idaho | 6 | 1 | 1 | 8 | 12 | - | - | - | 1 |
| Wyo. | - | 3 | 2 | 3 | - | 1 | - | - | 33 |
| Colo. | 22 | 53 | 7 | 14 | 20 | 2 | - | - | 3 |
| N. Mex. | 24 | 17 | 3 | 56 | 48 | 3 | - | 1 | 6 |
| Ariz. | 333 | 124 | 6 | 139 | 125 | - | 17 | 1 | 25 |
| Utah | 5 | 11 | 2 | 18 | 24 | - | - | - | 5 |
| Nev. | 72 | 214 | - | 32 | 26 | - | 2 | - | 2 |
| PACIFIC | 2,377 | 2,983 | 34 | 1,941 | 2,506 | 1 | 71 | 2 | 172 |
| Wash. | 218 | 245 | 4 | 153 | 136 | 1 | 2 | - | - |
| Oreg. | 88 | 141 | - | 73 | 85 | - | 2 | - | 1 |
| Calif. | 2,053 | 2,587 | 29 | 1,604 | 2,153 | - | 63 | 2 | 149 |
| Alaska | 10 | 2 | - | 23 | 41 | - | - | - | 22 |
| Hawaii | 8 | 8 | 1 | 88 | 91 | - | 4 | - | - |
| Guam | 1 | 4 | - | 21 | 44 | - | - | - | - |
| P.R. | 204 | 315 | - | 66 | 167 | - | - | - | 30 |
| V.I. | 2 | 3 | - | 4 | 4 | - | - | - | - |
| Amer. Samoa | - | - | - | 8 | 2 | - | 1 | - | - |
| C.N.M.I. | 1 | 7 | - | 29 | 9 | - | 4 | - | - |

U: Unavailable

## TABLE III. Deaths in 121 U.S. cities,* week ending July 21, 1990 (29th Week)

| Reporting Area | All Causes, By Age (Years) | | | | | | P&I** |
|---|---|---|---|---|---|---|---|
| | All Ages | ≥65 | 45-64 | 25-44 | 1-24 | <1 | Total |
| NEW ENGLAND | 630 | 431 | 108 | 52 | 22 | 17 | 61 |
| Boston, Mass. | 165 | 96 | 34 | 18 | 11 | 6 | 20 |
| Bridgeport, Conn. | 44 | 30 | 7 | 7 | - | - | 2 |
| Cambridge, Mass. | 20 | 16 | 3 | 1 | - | - | 4 |
| Fall River, Mass. | 18 | 18 | - | - | - | - | - |
| Hartford, Conn. | 61 | 38 | 16 | 3 | 2 | 2 | 14 |
| Lowell, Mass. | 28 | 18 | 4 | 4 | 1 | 1 | 4 |
| Lynn, Mass. | 14 | 8 | 3 | 3 | - | - | - |
| New Bedford, Mass. | 23 | 18 | 3 | 2 | - | - | 1 |
| New Haven, Conn. | 60 | 47 | 9 | 2 | - | 2 | 3 |
| Providence, R.I. | 37 | 29 | 3 | 1 | 2 | 2 | 1 |
| Somerville, Mass. | 10 | 8 | 2 | - | - | - | - |
| Springfield, Mass. | 56 | 36 | 8 | 4 | 4 | 4 | 5 |
| Waterbury, Conn. | 43 | 31 | 7 | 4 | 1 | - | 2 |
| Worcester, Mass. | 51 | 38 | 9 | 3 | 1 | - | 5 |
| MID. ATLANTIC | 2,556 | 1,638 | 494 | 276 | 90 | 58 | 138 |
| Albany, N.Y. | 49 | 30 | 9 | 4 | 1 | 5 | 1 |
| Allentown, Pa. | 24 | 17 | 5 | 2 | - | - | - |
| Buffalo, N.Y. | 97 | 57 | 20 | 12 | 5 | 3 | 3 |
| Camden, N.J. | 40 | 26 | 5 | 4 | 3 | 2 | - |
| Elizabeth, N.J. | 16 | 10 | 5 | 1 | - | - | - |
| Erie, Pa.† | 40 | 29 | 9 | - | 1 | 1 | - |
| Jersey City, N.J. | 54 | 34 | 10 | 5 | 1 | 4 | 1 |
| N.Y. City, N.Y. | 1,298 | 800 | 253 | 176 | 49 | 20 | 57 |
| Newark, N.J. | 52 | 19 | 13 | 11 | 7 | 2 | 11 |
| Paterson, N.J. | 26 | 15 | 6 | 4 | - | 1 | 1 |
| Philadelphia, Pa. | 391 | 258 | 89 | 27 | 9 | 8 | 28 |
| Pittsburgh, Pa.† | 77 | 49 | 12 | 6 | 4 | 6 | 4 |
| Reading, Pa. | 33 | 30 | 2 | 1 | - | - | 3 |
| Rochester, N.Y. | 116 | 89 | 17 | 5 | 4 | 1 | 16 |
| Schenectady, N.Y. | 29 | 25 | 3 | 1 | - | - | 1 |
| Scranton, Pa.† | 37 | 28 | 3 | 4 | 2 | - | 2 |
| Syracuse, N.Y. | 112 | 77 | 21 | 7 | 4 | 3 | 4 |
| Trenton, N.J. | 25 | 17 | 4 | 4 | - | - | 2 |
| Utica, N.Y. | 15 | 11 | 4 | - | - | - | 1 |
| Yonkers, N.Y. | 25 | 17 | 4 | 2 | - | 2 | 3 |
| E.N. CENTRAL | 2,315 | 1,519 | 464 | 172 | 76 | 84 | 104 |
| Akron, Ohio | 64 | 46 | 8 | 5 | 1 | 4 | 11 |
| Canton, Ohio | 33 | 29 | 4 | - | - | - | 3 |
| Chicago, Ill.§ | 564 | 362 | 125 | 45 | 10 | 22 | 16 |
| Cincinnati, Ohio | 133 | 94 | 20 | 9 | 6 | 4 | 15 |
| Cleveland, Ohio | 162 | 106 | 30 | 13 | 8 | 5 | 3 |
| Columbus, Ohio | 163 | 97 | 38 | 9 | 9 | 10 | 2 |
| Dayton, Ohio | 126 | 85 | 27 | 7 | 3 | 4 | 6 |
| Detroit, Mich. | 235 | 139 | 48 | 27 | 14 | 7 | 5 |
| Evansville, Ind. | 34 | 23 | 7 | 1 | 2 | 1 | - |
| Fort Wayne, Ind. | 55 | 38 | 12 | 2 | 3 | - | 4 |
| Gary, Ind. | 17 | 8 | 5 | 2 | 2 | - | 2 |
| Grand Rapids, Mich. | 54 | 36 | 9 | 3 | - | 6 | 9 |
| Indianapolis, Ind. | 206 | 129 | 45 | 18 | 8 | 6 | 2 |
| Madison, Wis.§ | 36 | 24 | 8 | 4 | - | - | 3 |
| Milwaukee, Wis. | 144 | 106 | 22 | 9 | 2 | 5 | 5 |
| Peoria, Ill. | 41 | 27 | 10 | - | 2 | 2 | 5 |
| Rockford, Ill. | 41 | 26 | 11 | 3 | - | 1 | 1 |
| South Bend, Ind. | 55 | 41 | 8 | 6 | - | - | 4 |
| Toledo, Ohio | 94 | 63 | 18 | 6 | 3 | 4 | 4 |
| Youngstown, Ohio | 58 | 40 | 9 | 3 | 3 | 3 | 4 |
| W.N. CENTRAL | 786 | 539 | 145 | 53 | 25 | 24 | 39 |
| Des Moines, Iowa | 62 | 39 | 15 | 5 | 1 | 2 | 2 |
| Duluth, Minn. | 24 | 19 | 5 | - | - | - | 2 |
| Kansas City, Kans. | 28 | 19 | 5 | 3 | - | 1 | 1 |
| Kansas City, Mo. | 116 | 83 | 19 | 7 | 5 | 2 | 15 |
| Lincoln, Nebr. | 34 | 20 | 7 | 7 | - | - | 1 |
| Minneapolis, Minn. | 171 | 128 | 25 | 12 | 5 | 1 | 9 |
| Omaha, Nebr. | 94 | 55 | 21 | 7 | 5 | 6 | 6 |
| St. Louis, Mo. | 131 | 91 | 23 | 5 | 6 | 6 | 3 |
| St. Paul, Minn. | 85 | 57 | 18 | 5 | 2 | 3 | - |
| Wichita, Kans. | 41 | 28 | 7 | 2 | 1 | 3 | - |
| S. ATLANTIC | 1,302 | 770 | 286 | 146 | 47 | 51 | 42 |
| Atlanta, Ga. | 139 | 74 | 37 | 16 | 5 | 7 | 1 |
| Baltimore, Md. | 209 | 132 | 42 | 23 | 7 | 5 | 8 |
| Charlotte, N.C. | 95 | 49 | 22 | 15 | 4 | 5 | 6 |
| Jacksonville, Fla. | 104 | 55 | 23 | 10 | 7 | 8 | 4 |
| Miami, Fla. | 114 | 69 | 25 | 14 | 5 | 1 | 1 |
| Norfolk, Va. | 66 | 38 | 13 | 12 | 2 | 1 | 6 |
| Richmond, Va. | 71 | 46 | 16 | 4 | 3 | 2 | 4 |
| Savannah, Ga. | 44 | 34 | 8 | 2 | - | - | 2 |
| St. Petersburg, Fla. | 80 | 67 | 6 | 4 | 2 | 1 | 4 |
| Tampa, Fla.§ | 72 | 49 | 14 | 6 | 2 | 1 | 2 |
| Washington, D.C. | 274 | 127 | 78 | 38 | 10 | 20 | 4 |
| Wilmington, Del. | 34 | 30 | 2 | 2 | - | - | - |
| E.S. CENTRAL | 920 | 589 | 198 | 70 | 37 | 26 | 46 |
| Birmingham, Ala. | 127 | 84 | 24 | 6 | 4 | 9 | 3 |
| Chattanooga, Tenn. | 58 | 36 | 15 | 4 | 2 | 1 | 6 |
| Knoxville, Tenn. | 70 | 45 | 19 | 4 | 1 | 1 | 7 |
| Louisville, Ky. | 182 | 124 | 42 | 12 | 1 | 3 | 9 |
| Memphis, Tenn. | 178 | 110 | 34 | 18 | 12 | 4 | 8 |
| Mobile, Ala. | 123 | 78 | 26 | 14 | 4 | 1 | 2 |
| Montgomery, Ala. | 50 | 31 | 7 | 3 | 4 | 5 | 3 |
| Nashville, Tenn. | 132 | 81 | 31 | 9 | 9 | 2 | 8 |
| W.S. CENTRAL | 1,718 | 1,033 | 368 | 192 | 76 | 49 | 74 |
| Austin, Tex. | 57 | 36 | 9 | 8 | 4 | - | 9 |
| Baton Rouge, La. | 49 | 36 | 7 | 5 | - | 1 | 3 |
| Corpus Christi, Tex. | 36 | 22 | 6 | 3 | 3 | 2 | 2 |
| Dallas, Tex. | 205 | 106 | 51 | 25 | 11 | 12 | - |
| El Paso, Tex. | 73 | 52 | 12 | 5 | 3 | 1 | 8 |
| Fort Worth, Tex | 98 | 56 | 19 | 14 | 3 | 6 | 3 |
| Houston, Tex.§ | 734 | 436 | 169 | 89 | 24 | 16 | 18 |
| Little Rock, Ark. | 67 | 41 | 17 | 5 | 3 | 1 | 4 |
| New Orleans, La. | 131 | 75 | 29 | 16 | 9 | 2 | - |
| San Antonio, Tex. | 122 | 76 | 22 | 11 | 9 | 4 | 13 |
| Shreveport, La. | 43 | 24 | 7 | 3 | 5 | 4 | 5 |
| Tulsa, Okla. | 103 | 73 | 20 | 8 | 2 | - | 9 |
| MOUNTAIN | 630 | 393 | 119 | 77 | 28 | 13 | 34 |
| Albuquerque, N. Mex. | 79 | 41 | 19 | 7 | 9 | 3 | 6 |
| Colo. Springs, Colo. | 38 | 26 | 4 | 6 | 2 | - | 6 |
| Denver, Colo. | 83 | 46 | 22 | 8 | 3 | 4 | - |
| Las Vegas, Nev. | 127 | 76 | 30 | 18 | 2 | 1 | 9 |
| Ogden, Utah | 22 | 16 | 4 | 2 | - | - | 1 |
| Phoenix, Ariz. | 143 | 89 | 23 | 19 | 8 | 4 | 6 |
| Pueblo, Colo. | 24 | 17 | 3 | 4 | - | - | - |
| Salt Lake City, Utah | 35 | 24 | 4 | 5 | 2 | - | 1 |
| Tucson, Ariz. | 79 | 58 | 10 | 8 | 2 | 1 | 5 |
| PACIFIC | 1,984 | 1,308 | 333 | 205 | 72 | 53 | 125 |
| Berkeley, Calif. | 20 | 14 | 2 | 2 | 1 | 1 | - |
| Fresno, Calif. | 70 | 47 | 7 | 6 | 8 | 2 | 6 |
| Glendale, Calif. | 21 | 18 | 3 | - | - | - | 1 |
| Honolulu, Hawaii | 83 | 59 | 15 | 6 | 2 | 1 | 16 |
| Long Beach, Calif. | 72 | 46 | 15 | 8 | 2 | 1 | 8 |
| Los Angeles Calif. | 521 | 333 | 93 | 59 | 23 | 7 | 26 |
| Oakland, Calif. | 82 | 50 | 14 | 8 | 6 | 4 | 2 |
| Pasadena, Calif. | 53 | 42 | 4 | 5 | - | 2 | 3 |
| Portland, Oreg. | 162 | 120 | 24 | 13 | 2 | 3 | 4 |
| Sacramento, Calif. | 151 | 101 | 22 | 17 | 7 | 4 | 20 |
| San Diego, Calif. | 160 | 87 | 35 | 19 | 4 | 11 | 12 |
| San Francisco, Calif. | 144 | 80 | 27 | 26 | 4 | 4 | - |
| San Jose, Calif. | 191 | 132 | 33 | 15 | 6 | 5 | 15 |
| Seattle, Wash. | 153 | 105 | 24 | 15 | 5 | 4 | 5 |
| Spokane, Wash. | 49 | 33 | 10 | 2 | 2 | 2 | 6 |
| Tacoma, Wash. | 52 | 41 | 5 | 4 | - | 2 | 1 |
| TOTAL | 12,841†† | 8,220 | 2,515 | 1,243 | 473 | 375 | 663 |

*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.

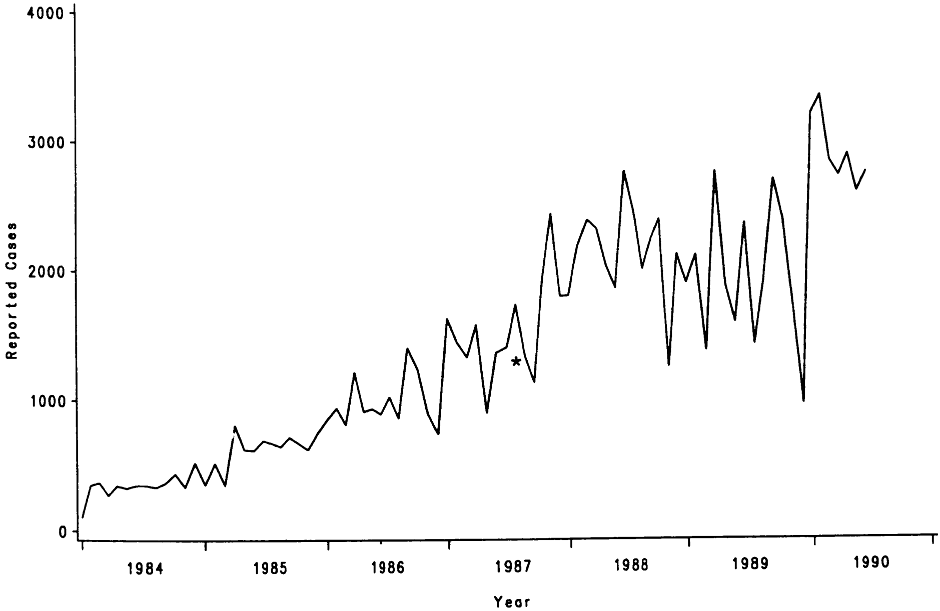
**Pneumonia and influenza.

†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.

**FIGURE II. Acquired immunodeficiency syndrome cases, by 4-week period of report – United States, 1984–1990**




*Change in case definition.

**FIGURE III. Tuberculosis cases, by 4-week period of report – United States, 1984–1990**

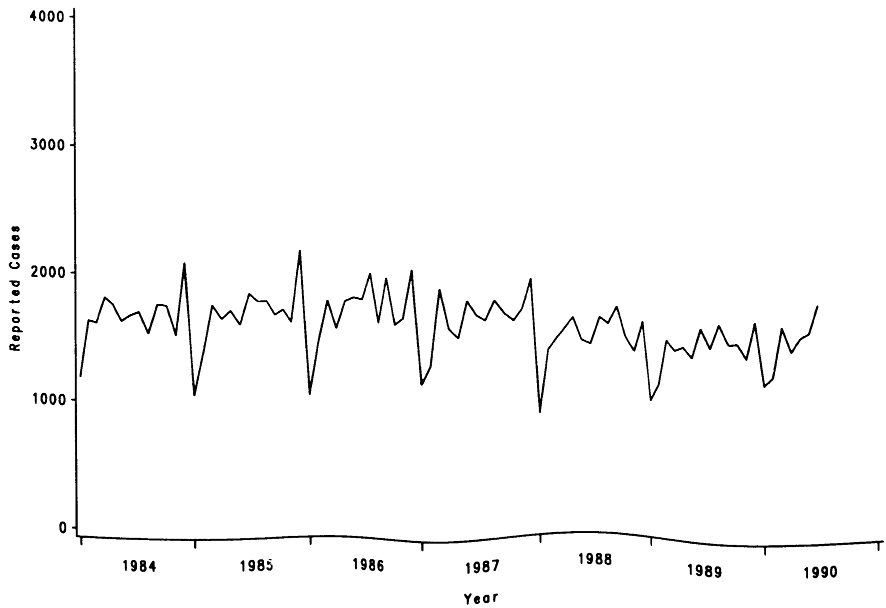


FIGURE IV. Gonorrhea cases, by 4-week period of report — United States, 1984–1990

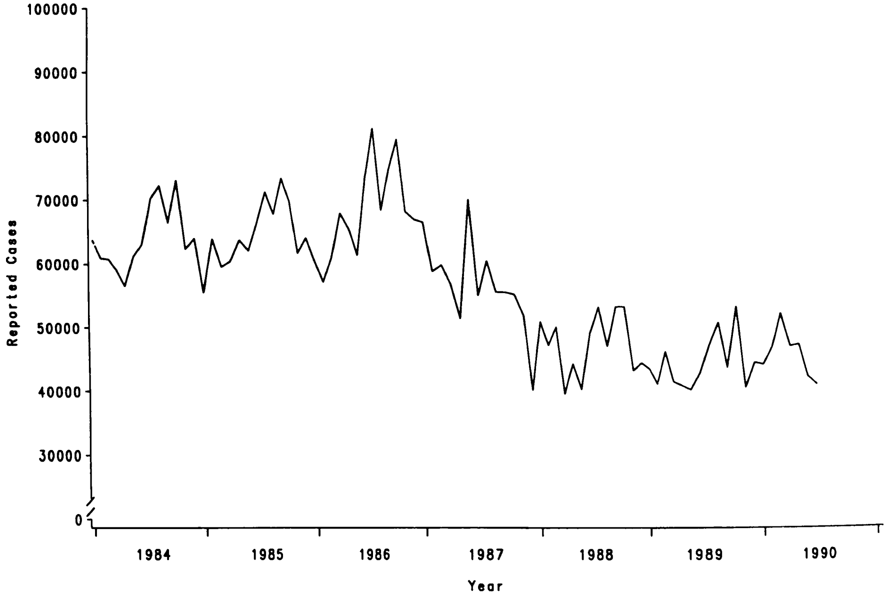
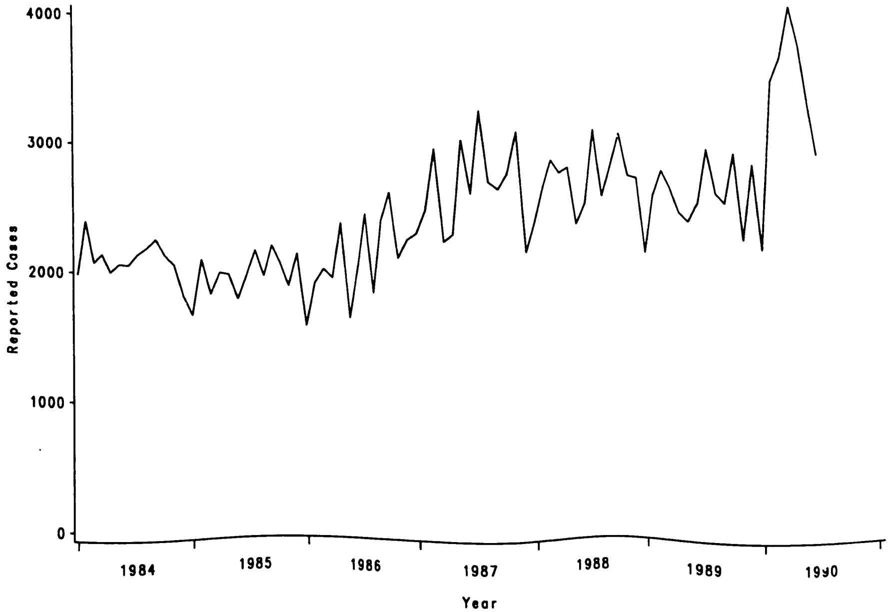


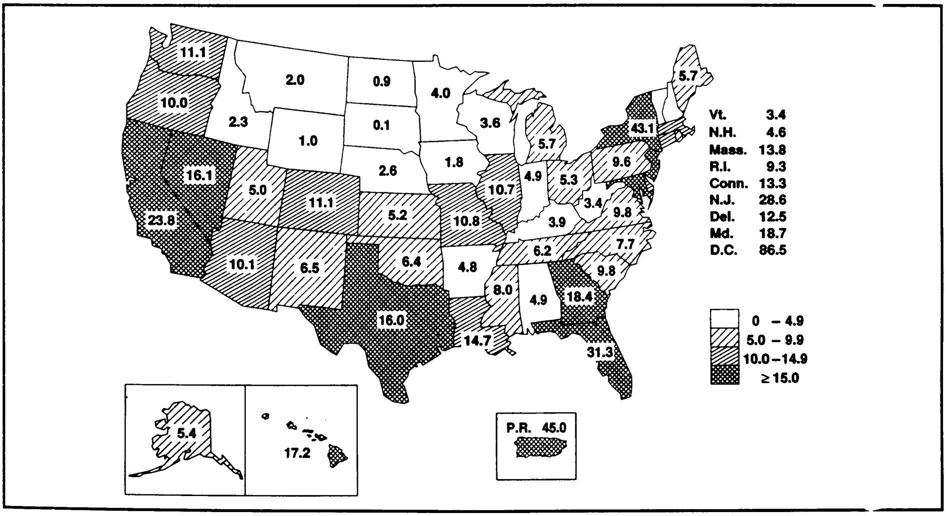

FIGURE V. Syphilis cases, by 4-week period of report — United States, 1984–1990



## Quarterly AIDS Map

The following map provides information on the reported number of acquired immunodeficiency syndrome (AIDS) cases per 100,000 population by state of residence for July 1989 through June 1990. The map appears quarterly in *MMWR*. More detailed information on AIDS cases is provided in the monthly *HIV/AIDS Surveillance Report*, single copies of which are available free from the National AIDS Information Clearinghouse, P.O. Box 6003, Rockville, MD 20850; telephone (800) 458-5231.

**AIDS cases per 100,000 population — United States, July 1989–June 1990**



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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 public on the succeeding Friday. The editor welcomes accounts of interesting cases, outbreaks, environmental hazards, or other public health problems of current interest to health officials. Such reports and any other matters pertaining to editorial or other textual considerations should be addressed to: Editor, *Morbidity and Mortality Weekly Report*, Centers for Disease Control, Atlanta, Georgia 30333; telephone (404) 332-4555.



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